Proposal to the City of Napa for

DESIGN-BUILD SERVICES FOR THE REPLACEMENT OF HILLCREST AND SILVERADO PUMP STATIONS

May 9, 2019

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APPENDICES

A

TRANSMITTAL LETTER

May 9, 2019

City of Napa Utilities Department
Attn: Bill Ash, P.E.
1340 Clay Street
Napa, CA 94559

Re: Proposal to Provide Design - Build Services for the Replacement of Hillcrest and Silverado Pump Stations

Dear Mr. Ash,

The **GSE Construction Team** welcomes this opportunity to provide design-build services to the City of Napa for the Replacement of the Hillcrest and Silverado Pump Stations Project. We recognize that this is an important and time-sensitive project to replace two potable water pump stations destroyed in the catastrophic Atlas Fire of 2017. **Time is definitely of the essence:** the City is currently maintaining water supplies to the Silverado Country Club community using expensive rental equipment, and there are funding deadlines for reconstruction imposed by FEMA / Cal OES. The City also wants new fire-resistant, resilient facilities operational as soon as possible to avoid a repetition of the destruction in 2017.

In this Proposal we have demonstrated that our team can replace the destroyed pump stations with two modern, fire-resistant, easy-to-operate-and-maintain facilities that meet the City's needs, within budget and **well ahead of schedule.** To achieve this, we have assembled a strong design-build team that has worked together before and is highly-experienced in the design and construction of potable water system infrastructure. Getting this project right requires an experienced team with individuals who are able to anticipate and overcome challenges that have the potential for delays and additional costs. We have demonstrated on multiple projects that we have the necessary experience and resources to meet the challenges of a demanding construction project.

GSE Construction Company is the Design-Builder and Prime Contractor for this project and will lead the team. Over the past 35 years, we have successfully completed more than 600 projects as a general engineering contractor. Our 175-person-strong team has an outstanding record that includes water and wastewater treatment and conveyance infrastructure projects delivered using both conventional and alternative delivery methods for a diverse range of clients, including state and federal agencies, cities and counties, special districts, national laboratories and private-sector industrial firms. Projects have typically included brand new facilities, retrofitting of ageing structures, expansion of capacity, and replacement of existing equipment for pump stations, treatment plants, pipelines, and storage tanks and reservoirs.

Our Lead Designer, **Coleman Engineering,** is a highly skilled and experienced consulting engineering firm that specializes only in water and wastewater infrastructure. Based in Roseville, CA, they are a full-service firm that provides planning, modeling, design, bidding and construction support services. Proposed team members from Coleman Engineering and GSE Construction are currently working together on the City of Brentwood's Non-Potable Storage Facility Project and will bring the benefit of their well- established working relationships to the City's project. Coleman's Design Project Manager, Simon Gray P.E., has extensive California and international water and wastewater design-build experience on contractor-led alternative project delivery teams.

We have assembled an experienced, specialized team of professional engineers and surveyors to support Coleman Engineering in the design phase. These firms work regularly on water and wastewater design projects with Coleman Engineering:

- ***Crawford & Associates, Inc*** is our geotechnical engineer from Sacramento, CA.
- ***Frisch Engineering, Inc*** is our electrical and instrumentation and controls engineer based in Folsom. CA.

- ***VE Solutions, Inc and Sigerson Architects*** will provide structural design and architectural services. Sigerson Architects, a firm based in Sacramento, is working on the Brentwood project with GSE Construction and Coleman Engineering.
- ***Carlson, Barbee & Gibson, Inc*** of West Sacramento is the team's surveyor.
- ***SMB Environmental*** of Roseville will perform the biological resources monitoring

For the construction phase, we will self-perform the civil and mechanical construction, and have two primary subcontractors for manufacture and installation of electrical and instrumentation and control facilities. Both are also working on the Brentwood project with us:

- ***Tesco Controls, Inc,*** is a major national instrumentation and control / SCADA manufacturer, supplier and designer with its corporate office in Sacramento.
- ***Fidel Electric, Inc*** is our electrical subcontractor based in Pacheco, CA

As the primary contact for GSE Construction Company, Inc. as the Design – Builder, I will be the signatory to contracts with the City. Team contacts for the project are listed below:

	DESIGN-BUILDER AND PRIME CONTRACTOR	LEAD DESIGNER
Corporate Name	G.S.E. Contruction Company, Inc.	Coleman Engineering, Inc.
Authorized Representative	Dennis Gutierrez	Chad Coleman, P.E.
Title	Vice President	President
Address	6950 Preston Avenue Livermore, CA 94551	1358 Blue Oaks Blvd., Suite 200 Roseville, CA 95678
Office Phone Number	925-447-0292	916-791-1188
Cell Phone Number	925-525-6176	916-847-3476
E-Mail Address	dgutierrez@gseconstruction.com	chad@coleman-eng.com

We confirm that we have taken into account all addenda issued by the City in preparing this submittal.

We look forward to partnering with the City of Napa to complete an outstanding project. Please don't hesitate to contact me if you have any questions on our Proposal or need further information.

Sincerely,

Dennis Gutierrez, Vice President
GSE Construction Company, Inc

B

BUSINESS INFORMATION

In this Section we have included the completed Business Information Form from Attachment B of the RFP and requested business information.

The table (found on page 3) provides details of each participant, type of entity, company officers or principals, and location of company headquarters and office nearest to Napa.

BUSINESS INFORMATON FORM

To be submitted with the proposal

Design-Build Services for the Replacement of Hillcrest and Silverado Pump Stations Napa, California

GSE Construction Company, Inc.
Legal Name of Firm

6950 Preston Avenue
Firm's Address

925-447-0292
Firm's Telephone Number

Livermore, CA 94551
City, State, Zip Code

S-Corporation
Type of Organization (Partnership, Corporation, etc.) – for Joint Venture, provide above information for each party.

Michael Tippett, Project Manager
Name of Project Manager and Title

Michael Tippett, Project Manager | 707-787-7125
Name, Title and Phone Number of Person to Which Project Correspondence Should be Directed

GSE Construction Company, Inc. | 6950 Preston Avenue | Livermore, CA 94551
Address Where Project Correspondence Should be Sent

Subconsultant/Subcontractor	Area of Responsibility	Phone
Coleman Engineering, Inc.	Lead Designer, Civil & Mechanical Engineering, Permitting	916-791-1188
Crawford & Associates, Inc	Geotechnical Investigation and Design	916-455-4225
Frisch Engineering	Electrical and Instrumentation and Control Engineering	916-353-1025
VE Solutions, Inc .	Structural Engineering and Architecture	916-505-0519
Carlson, Barbee & Gibson, Inc.	Survey	916-375-1877
SMB Environmental	Biological Resources Monitoring	916-517-2189
Tesco Controls	SCADA and Controls	916-538-5976
Fidel Electric, Inc.	Electrical Subcontractor	925-687-1449

FIRM NAME	TYPE OF ORGANIZATION (PARTNERSHIP, CORPORATION, ETC.)	COMPANY OFFICERS	HEADQUARTERS	OFFICE NEAREST TO NAPA
GSE Construction, Inc.	Corporation	Dennis Gutierrez VP, Steve Mazza VP	Livermore, CA	Livermore, CA
Coleman Engineering, Inc.	Professional Corporation	Chad Coleman, PE, President	Roseville, CA	Roseville, CA
Crawford & Associates, Inc.	Professional Corporation	Benjamin Crawford, PE, GE, President	Sacramento, CA	Pleasanton, CA
Frisch Engineering, Inc.	Professional Corporation	Thomas Frisch, PE, President Mike Frisch, PE , Vice President	Folsom, CA	Folsom, CA
VE Solutions, Inc.	Professional Corporation	Brad Friederichs, PE, SE, President	Carmichael, CA	Carmichael, CA
Sigerson Architects	Sole Proprietor Professional Services	Saxon Sigerson, AIA, Owner	Fair Oaks, CA	Fair Oaks, CA
Carlson, Barbee & Gibson, Inc.	Professional Corporation	Andrea Bellanca, PE, PLS, Principal	San Ramon,CA	San Ramon,CA
Tesco Controls, Inc.	Corporation	Shain Thomas, CEO, Seth Robinson, CFO	Sacramento, CA	San Francisco, CA
Fidel Electrical, Inc.	Corporation	Paul Fidelus, President	Pacheco, CA	Pacheco, CA
SMB Environmental	Professional Corporation	Steve Brown, Owner	Roseville, CA	Roseville, CA

Since its founding in 1980, GSE has successfully performed over 600 projects ranging in value from $100,000 to $100,000,000.

GSE Construction, and its affiliated partners on the project, have not had any contracts terminated, either partially or completely, by our clients in the last three years.

C

STATEMENT OF QUALIFICATIONS AND EXPERIENCE

GSE CONSTRUCTION TEAM

Section C describes the GSE Construction Team, its members, and their qualifications and experience both in general terms and with comparably-sized water pump station projects. These qualifications and demonstrated experience include the engineering and construction of projects implemented using both design build and design-bid-build delivery methods for municipal clients.

GSE CONSTRUCTION (DESIGN-BUILDER AND PRIME CONTRACTOR)

Founded in 1980, GSE Construction Company, Inc is a California corporation that has successfully completed over 600 projects as a general engineering contractor. We have decades of experience and expertise successfully building water and wastewater infrastructure for both municipal agencies and the private sector in Northern California. Our resume includes projects delivered using both a conventional design-bid-build approach and alternative delivery methods such as design build. We have constructed both new and retrofitted facilities for water, wastewater and recycled water treatment and conveyance, including pump stations, storage tanks, pipelines, anaerobic / aerobic treatment plants, tertiary treatment processes, disinfection and dechlorination systems, and biogas generation.

GSE Construction typically self-performs significant portions of our projects, including site-work, underground utilities, structural concrete, metal fabrication, and the installation of mechanical pumping and piping systems. This cross-discipline expertise ensures close and efficient coordination of work: saving time and ensuring a high-quality product. For design build projects, our specialist construction expertise allows us to provide competitive estimating at the conceptual stage of a project, contribute constructability knowledge during design, and follow-through with quality construction.

Located in Livermore, CA, we have 175 employees, of which 25 are professionals and 150 are field operatives. Individuals within the firm hold licenses and certification in design build project management (Design Build Institute of America); civil and chemical engineering; quality assurance and control; safety, storm water pollution prevention plans (SWPPP); and facility testing, commissioning and start-up.

> *"The involvement and effectiveness of GSE's management and quality control personnel, the initiative in submitting a successful value engineering proposal, completion of the contract five months ahead of schedule, and the highly professional manner in which the work was accomplished deserves recognition."*
>
> ***R.L. Moeller, Commander, U.S. Navy,***
> *Potable Water Systems Improvement Project*

Our previous public sector clients for water projects in Northern California include:

- Santa Clara Valley Water District (SCVWD)
- City of Lathrop
- East Bay Municipal Utilities District (EBMUD)
- City of Antioch
- Dublin San Ramon Services District (DSRSD)
- City of Brentwood
- Zone 7 Water Agency
- Contra Costa Water District (CCWD)

The following is a sample listing of our water design build projects:

Public Agencies

- Foster Square Fire Water Booster Pump Station, Foster City, CA
- Tuolumne City Sanitary District WWTP Improvements Phase 3, Tuolumne, CA
- CCWD On-Call Construction and Technical Services Contract, Concord, CA
- Brentwood Non-Potable Water Storage Facility, Brentwood, CA
- Mallard Slough Pumping Station, Rio Vista, CA
- EBMUD Temporary Dewatering Facility, Oakland, CA
- San Joaquin County On-Call Concrete Maintenance, Lathrop, CA
- Mountain House WWTP Mixing and Decanter System Upgrades, Mountain House, CA
- Watsonville WWTP Aeration System Upgrades, Watsonville, CA
- Santa Cruz DAFT Replacement Project, Santa Cruz, CA
- Montevina WTP Upgrades, Los Gatos, CA
- Flow Control Station #2 Fall Control Improvements (Phases 1 & 2), Oakley, CA
- Monterey Trickling Filter Upgrades, Monterey, CA
- Lawrence Livermore National Laboratory Site Wide Mechanical Utility Valve Replacement, Livermore, CA

Private Sector

- Meritage - Sellars Ave. Sewer Lift Station, Brentwood, CA
- E&J Gallo Fresno Anaerobic Treatment System (F.A.T.S), Fresno, CA
- Aquarius (Fresh & Easy) Wastewater, Pretreatment system, Riverside, CA
- Woodbridge Winery Anaerobic Wastewater Pretreatment System, Woodbridge, CA
- Marquez Brothers International (MBI) Wastewater Pretreatment System, Hanford, CA
- Unilever NAICS Wastewater Treatment Plant Upgrades, Henderson, NV
- Dr. Pepper/Snapple Product Water Purification System, Victorville, CA
- Marquez Brothers International (MBI) Odor Control Upgrades, Hanford, CA
- Swiss American Sausage (Hormel) Wastewater Pretreatment System, Lathrop, CA

- Frito Lay Wastewater pH Diversion System, Modesto, CA
- Intel RODI System, Chandler, AZ
- E&J Gallo Livingston Nitrate Treatment System, Livingston, CA
- Land O'Lakes pH Neutralization System, Tulare, CA
- Foster Farms WWPS Upgrades, Livingston, CA
- Land O Lakes Milk Silo Foundation, Tulare, CA

More details of some of these projects, and other relevant projects delivered using conventional design-bid-build methods are given later in this section.

COLEMAN ENGINEERING (LEAD DESIGNER)

Coleman Engineering, Inc. is a private consulting engineering firm focused entirely on water and wastewater engineering. Founded in 2010 and located in Roseville, CA, the firm has subsequently grown to nine full-time staff. Three of our professionals are licensed Professional Engineers in California, with additional registrations in the states of Nevada, Utah, Washington, Texas, and Idaho. The company's president and principal engineer, Chad Coleman P.E., is also a Certified Grade 3 Water Treatment Operator in California. Our Design Project Manager, Simon Gray P.E., has extensive water and wastewater design build experience in contractor-led design build project teams both in the US and abroad.

Coleman Engineering provides the following planning, design and construction phase services:

Planning Studies

- Master planning for water, sewer, and recycled water systems.
- Development of Capital Improvement Plans for public agencies, and Specific Plans for private sector developments.
- Water and wastewater facility condition and vulnerability assessments.
- Reviews of operation and maintenance procedures.

> *"Very high technical competency. Design and plans completed well in advance of schedule. Responses to questions and comments were provided very quickly"*
>
> ***Keith Coggins,***
> *City of Oakley*

Modeling

- Hydraulic models of pressurized and gravity conveyance systems.
- Hydraulic transient modeling.

Funding Support

- Engineering and managerial support to obtain and manage state and federal funding from a variety of loan and grant sources.
- Engineering and managerial support of bridge loans to fund planning, environmental and design activities.

Design

- Feasibility and pre-design studies and reports, including detailed alternatives evaluations and project selection.
- Preliminary and final design of water, wastewater, and recycled water treatment and pipeline conveyance projects, including plans, technical specifications, and contract documents for bidding.
- Capital and life-cycle cost estimating.
- Schedule preparation and constructability review.

Bidding and Construction

- Bid support, including responses to Requests for Information (RFIs), pre-bid meetings and site walks, bid addenda, bid evaluation, and contract award recommendation.
- Engineering Services During Construction, including site meetings, submittal reviews, responses to RFIs, claims support and evaluation, pay request reviews, and construction observation.
- Contractor schedule review and analysis.
- Funding agency contract conditions compliance monitoring.
- Full construction management and inspection.
- Record drawings and operations and maintenance manuals.

Water, wastewater and recycled water system project experience includes:

- Water pump stations
- Water storage tanks and reservoirs
- Transmission and distribution pipelines
- Water meter installation and retrofits
- Well down-hole designs
- Well pumping stations
- Wellhead treatment systems
- Water system hydraulic modeling
- Water treatment plant process and operations
- Water system condition and vulnerability assessments
- Wastewater lift and recycled water booster pump stations
- Wastewater treatment plant process and operations

- Interceptor and trunk sewers
- Local collection system pipelines
- Force mains
- Trenchless pipeline replacement and rehabilitation
- Sewer system hydraulic modeling
- NPDES/WDR compliance studies and reporting
- Decentralized and onsite wastewater systems
- Wastewater and recycled water storage ponds

PREVIOUS EXPERIENCE WORKING TOGETHER

GSE Construction and Coleman Engineering have successfully collaborated on multiple water and wastewater projects, including the Non-Potable Water Storage Tank and Pump Station for the City of Brentwood, the Sellers Avenue Sewer Lift Station, Zone 1 Reservoir 1.3 for the City of Brentwood and WWTP Upgrades for the Tuolumne City Sanitary District. This combination has never failed to deliver projects on time and under budget. Currently, the companies are working together on design build projects for Contra Costa Water District, and for Lennar and Meritage Homes.

BUSINESS ENTITY

GSE Construction Company, Inc, a California corporation, is the Design-Builder, Prime Contractor and the sole contracting entity with the City for the Replacement of the Hillcrest and Silverado Pump Stations Project . All other team members will be contracted to GSE, or as lower-tier design subconsultants or construction subcontractors. GSE Construction will be the prime point of contact for the team with all City staff and will maintain sole responsibility for project delivery, budget, and schedule adherence. All other team members are committed to assisting GSE Construction with their tasks but GSE will bear the overall responsibility for project delivery to the City. The company's headquarters is in Livermore, CA: this will be the office that manages the project in Napa. Dennis Gutierrez, Vice President, will be the company officer with signatory authority responsible for the project on behalf of GSE Construction.

Coleman Engineering, a professional California corporation, is the Lead Designer and Engineer and will be contracted as a sub consultant to GSE Construction. Coleman Engineering will manage all design engineering functions including planning, permitting, environmental coordination, design, and engineering services during construction. Coleman Engineering will manage all lower tier design engineering subconsultants. Chad Coleman, President, is the owner of the company. Coleman Engineering's company headquarters is in Roseville: this will also be the office for the Hillcrest and Silverado PS project.

DESIGN BUILD TEAM ORGANIZATION

Details of the Design-Build Team organization are shown on the Organization Chart on the following page.

ORGANIZATION CHART

CITY OF NAPA
Bill Ash, PE, Project Manager

LEAD DESIGNER
CIVIL & MECHANICAL ENGINEERING FOR PUMP STATIONS AND PIPELINES; PERMITTING
Coleman Engineering, Inc.

Chad Coleman, P.E.	Principal-in-Charge/Quality Assurance Lead
Simon Gray, P.E.	Design Project Manager

DESIGN-BUILDER AND PRIME CONTRACTOR
GSE Construction, Inc.

Dennis Gutierrez	Project Executive
Michael Tippett	Project Manager
JJ Macarandan	Field Superintendent
Paul Havlicek	Procurement Manager
Nate Jones	Estimator
Bezhad Nasari	Quality Assurance / Quality Control Manager

GEOTECHNICAL INVESTIGATION AND DESIGN
Crawford & Associates, Inc.
Ben Crawford, P.E., G.E. — Principal Engineer

ELECTRICAL / INSTRUMENTATION & CONTROL ENGINEERING
Frisch Engineering
Tom Frisch P.E — Electrical Instrumentation & Controls Engineer

STRUCTURAL ENGINEERING
VE Solutions, Inc.
Brad Friedrichs, S.E. — Structural Engineer

ARCHITECTURE
Sigerson Architects
Saxon Sigerson, AIA — Architect

TOPOGRAPHICAL MAPPING AND SURVEY
Carlson, Barbee & Gibson, Inc.
Mark Wehber, PLS — Surveyor

BIOLOGICAL RESOURCES MONITORING
SMB Environmental
Steve Brown — Principal Environmental Scientist

SCADA AND CONTROLS SUBCONTRACTOR
Tesco Controls, Inc.
Kevin Ford — Project Manager

ELECTRICAL SUBCONTRACTOR
Fidel Electric, Inc.
Paul Fidelus — Project Manager

KEY PERSONNEL

GSE
Dennis Gutierrez | Project Executive
Michael Tippett | Construction Manager
JJ Macarandan | Field Superintendent
Bezhad Nasari | Quality Assurance/ Quality Control Manager

COLEMAN ENGINEERING
Chad Coleman, PE | Principal-in-Charge/ Quality Assurance Lead
Simon Gray, PE | Design Phase Manager

ALL RESUMES ARE INCLUDED IN APPENDIX - RESUMES

"GSE CONSTRUCTION CONFIRMS THAT ALL KEY PERSONNEL AS REPRESENTED IN OUR PROPOSAL WILL REMAIN AS PART OF THE PROJECT TEAM, IN THEIR REPRESENTED ROLES, FOR THE DURATION OF THE PROJECT OR TO THE EXTENT THAT THEIR ROLE IS NECESSARY FOR THE DELIVERY OF THE PROJECT."

KEY TEAM MEMBERS' INFORMATION

The following table gives biographical and relevant project experience information for key team members. Detailed resumes for all team members identified in the Organization Chart are included in the Appendix.

NAME & ROLE	FIRM	BIO STATEMENT	RELEVANT EXPERIENCE
Dennis Guiterrez Project Executive Full project duration: 5% of time	GSE Construction	Dennis currently serves as Vice President at GSE Construction, having held previous roles of Project Engineer, Superintendent, Project Manager, Design-Build Coordinator, and Estimator. Dennis' focus is on Industrial and alternative delivery projects. He has been involved in all phases of the design process from feasibility assessments through to the issuance of For Construction documents. Dennis has supervised water and wastewater treatment projects including associated grading, underground utility construction, concrete structures, mechanical, and electrical installations. Dennis will serve as the Project Executive and company representative for all project contractual matters.	» Montevina WTP Upgrades | $15.6M | Los Gatos, CA » Intel CH-8 RODI | $5.3M | Chandler, AZ » LLNL Sitewide Utilities Replacement | $2.8M | Livermore, CA » Foster Farms WWPS Upgrades | $3.9M | Livingston, CA » Land O' Lakes pH Neutralization System & Truck Scales Facility | $6.8M | Tulare, CA
Michael Tippett Project Manager Full project duration: 50% of time	GSE Construction	Michael is an experienced project manager with an extensive work history overseeing complex heavy civil engineering projects. His role as a Senior Project Manager at GSE involves managing all aspects of projects including: CPM schedule with updates, budgets, change orders, subcontractors, procurement, project administration, startup, and closeout. Michael will manage all construction phase activities for GSE.	» Brentwood Non-Potable Water Storage - $10M » Griffith Pump Station - $10.5M » SE Water Pollution Control Plant 521/522 and Disinfection Upgrades - $30M » Joint Base Lewis McChord - $5M
JJ Macarandan Field Superintendent Full project duration: 100% of time	GSE Construction	JJ began his career with GSE as a Superintendent on the $17 Million ECHO Disinfection Chemical Storage Project. While on that project, he oversaw GSE's craft labor, managed the process equipment start-up and handled coordination with subcontractors. JJ supervises daily field work and manages day to day and long-term scheduling of work, equipment, subcontractors, and manpower. JJ will serve as the on-site point of contact with the City's construction manager and inspection team.	» Anaerobic Digester No. 4 | $8.2M | Dublin, CA » BN 2200 Site Remediation Project | $2.3M | Livermore, CA » EBMUD Diablo Vista Pumping Plant and Rate Control Station | $7.9M Lafayette, CA » ECHO Disinfection Chemical Storage Project | $17M | Elk Grove, CA
Bezhad Nasari QA/QC Manager Full project duration: 5% of time	GSE Construction	Behzad has over 10 years of experience in project control and quality control management of multimillion dollar infrastructure projects. He started with GSE as a Quality Control Manager on the $17M Echo Disinfection Chemical Storage project and was promoted to project engineer on the $18.6M Lathrop Consolidated Treatment Facility Phase II. There he was responsible for preparing & submitting project Submittals, RFI's, Change Orders, closeout and coordination with subcontractors.	» City of Brentwood Non-Potable Storage Facility | $10.5M | Brentwood, CA » Lathrop Consolidation Treatment Facility Phase II | $19.5M | Lathrop, CA » ECHO Disinfection Chemical Storage Project | $17M | Elk Grove, CA
Chad Coleman, P.E. Lead Designer's Principal-In-Charge and Design Quality Assurance Lead Full project duration: 5% of time	Coleman Engineering	Chad has over 25 years of experience planning, designing, and managing construction of water and wastewater infrastructure and facilities. He is experienced with the planning, design, and construction management of water supply pumping stations, municipal wells, water treatment plants, water storage tanks, transmission and distribution piping, as well as wastewater collection system rehabilitation and design, wastewater lift stations and wastewater treatment plants.	» Allendale Booster Pump Station | City of Hollister, CA » Midas Booster Pump Station | Rocklin, CA » Pump Stations 2.3 and 3.3 | City of Brentwood, CA » Reno VA Hospital Booster Pump Station | City of Reno, NV » Non-Potable Water Storage Tank and Pump Station | Brentwood, CA
Simon, Gray, P.E. Lead Designer's Design Phase Manager Design phase: 50% of time Consruction phase: 10% of time	Coleman Engineering	Simon has 35 years of technical and managerial experience covering all aspects of water and wastewater project implementation. His career is well balanced and includes design, contracting, project and construction management in the United States and abroad. This extensive experience includes successful design phase management as part of contractor-led, multi-discipline 'fast-track' design build project teams, with particular emphasis on constructability and design–construction coordination. Simon also has heavy civil engineering experience on airport, highway, port and bridge projects.	» Atherton Drive Water Storage Tank and Booster Pump Station| $5.3M |City of Manteca, CA (design build) » Strategic Sewage Disposal Scheme (SSDS) Upgrade of Existing Preliminary Treatment Works| $120M | Hong Kong (design build) » SSDS Stage 1, Chemical Dosing Facilities Contract,| $18M | Hong Kong (design build) » Point Lisas Seawater Reverse Osmosis (SWRO) Desalination Plant, | $120M | Trinidad, West Indies (design build) » Ting Kau Bridge | $220M | Hong Kong (design build)

ADDITIONAL COMPANY PARTICIPANT DETAILS

Business entity details as requested in the RFP are included in the table below. More information about subconsultants, subcontractors and design professionals not highlighted in this section is given in the next section, Section D: Summary of Subconsultants / Subcontractors, as requested in the RFP.

FIRM	YEARS IN BUSINESS	AVERAGE ANNUAL $ VALUE OF WORK IN LAST 5 YEARS	BONDING CAPACITY	# OF EMPLOYEES	# OF EMPLOYEES IN THE OFFICE MANAGING THIS PROJECT
GSE Construction (Livermore, CA)	38	$55,000,000	$90,000,000	175 (25 professionals, 150 craft employees)	175 (25 professionals, 150 craft employees)
Coleman Engineering (Roseville, CA)	9	$2,000,000	N/A	8 (6 professionals, 2 other employees)	8 (6 professionals, 2 other employees)
Crawford & Associates, Inc. (Sacramento, CA)	8	$3,100,000	N/A	22 employees	22 employees
Frisch Engineering (Folsom, CA)	17	$2,000,000	N/A	9 professionals	9 professionals
VE Solutions, Inc. (Carmichael, CA)	21	$750,000	N/A	2 professionals	2 professionals
Sigerson Architects (Fair Oaks, CA)	19	$190,000	N/A	1 professional	1 professional
Carlson, Barbee & Gibson, Inc. (San Ramon, CA)	29	$30,000,000	N/A	110 employees	2 employees
TESCO Controls, Inc. (Sacramento, CA)	46	$75,000,000	$15,000,000	350 employees	20 employees
Fidel Electric Inc.	14	$1,500,000	$500,000	5 (2 professionals, 3 other employees)	5 (2 professionals, 3 other employees)
SMB Environmental	8	$250,000	N/A	1 professional	1 professional

LICENSING AND QUALIFICATIONS

The following table provides details of the licenses held by both team member firms and key team members. Additional details for licenses and certifications held by key team members are given in the resumes included in the Appendices.

FIRM	KEY TEAM MEMBER	LICENSES HELD
GSE Construction		CA License #401498 – Class A (General Engineering Contractor), Class B (General Building Contractor); Class C16 (Fire Protection Contractor); Class C36 (Plumbing). Hazardous Substances Removal Certification in CA.

FIRM	KEY TEAM MEMBER	LICENSES HELD
TESCO Controls, Inc.		CA corporation and contractor
Fidel Electric, Inc.		CA corporation. Contractor License C10-895636

FIRM	KEY TEAM MEMBER	LICENSES HELD
Coleman Engineering		Professional CA Corporation
	Chad Coleman	P.E. (CA, ID, UT, NV); CA Water Treatment Operator, Grade 3
	Simon Gray	P.E. (CA, WA); Chartered Engineer (UK)

FIRM	KEY TEAM MEMBER	LICENSES HELD
Crawford & Associates, Inc	Ben Crawford	Professional CA corporation | P.E., G.E.(CA)
Frisch Engineering	Tom Frisch	Professional CA corporation | P.E., (CA)
VE Solutions, Inc.	Brad Friederichs	Professional CA corporation | P.E., S.E. (CA)
Sigerson Architects	Saxon Sigerson	Sole proprietor for professional services | AIA
Carlson, Barbee & Gibson, Inc	Mark Wehber	Professional CA corporation | P.L.S. (CA)
SMB Environmental	Steve Brown	Sole proprietor for professional services

GENERAL DESIGN-BUILD EXPERIENCE

Design-Build Approach

GSE recognizes that the key to a successful Design-Build project is communication and collaboration. The potential for cost and time savings made possible by the Design-Build approach can only be realized when stakeholders are engaged at each phase of the project and are able to share information quickly and effectively. For this reason, GSE hand selects its key partners and utilizes the latest in web-based project management systems for its design/build projects.

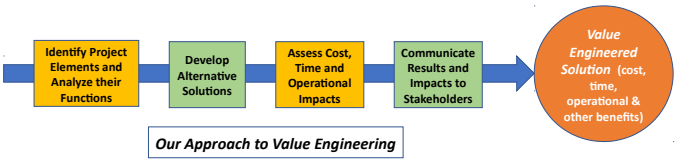
Members of the GSE and Coleman Engineering team have worked together on municipal water and wastewater projects since 2006. On the Brentwood Zone 1.3 Reservoir, Dennis Gutierrez served as GSE's project manager working with Chad Coleman, the lead designer of the project. The project received an award and was featured on the cover of Government Engineering Magazine. The positive working relationship formed in this project led to more successful projects, culminating in recent Design/Build projects for pump stations in the City of Brentwood and Foster City. The familiarity of the GSE and Coleman team members allows for an efficient collaborative process resulting in a more seamless design/build process.

Many of the team members selected for this project, both from design and construction firms, are currently working together on the City of Brentwood Non-Potable Water Storage Tank project. This includes Frisch Engineering, Tesco Controls, and Fidel Electric, among others. The established working relationship between the project team ensures the project can be completed quickly without sacrificing quality or cost.

To be successful one needs not just the right people but also the right tools. GSE utilizes the Procore web-based Construction Management system as the central collaboration and management tool for its projects. From here, each stakeholder, from the Designers, to the Owner, to Contractors can access project files, plans, specifications, company directories, photos, inspections, RFIs, submittals, and more. The intuitive design of the Procore system makes it easy for stakeholders, from managers to foremen, to inspectors and operations & maintenance personnel, to access and share project documents. Having a clearly organized central point for project files dramatically reduces the time necessary for processing of design documents, submittals, and RFIs. Moreover, having a centralized up-to-date project platform minimizes the potential for mistakes and rework.

Value Engineering

The principles that make the Design/Build project methodology successful are that same that facilitate true value engineering; namely expertise, communication, and collaboration. GSE employs a systematic and team-based approach to value engineering that begins at the onset of the project. At each step in the Design process (e.g., Basis of Design, 30% Plans, etc.), the GSE project manager will facilitate an analysis of the main project elements to identify their functions and if an alternative solution exists to deliver those functions. The steps of the Value Engineering Analysis are summarized below;



Our Approach to Value Engineering

The GSE & Coleman team members are well-versed in the use of value engineering tools. Recent project experience includes the use of value engineering tools which led a modification in the layout and sub grade preparation of the Brentwood NPW storage tank. The relocation of the tank coupled with soil-cement stabilization of the subgrade allowed construction to proceed ahead of schedule while also minimizing future weather impacts to the project. Similar collaborative value engineering options were developed and pursued relative to the Electrical and Controls elements of the Foster City and Brentwood pump station projects which resulted in cost and schedule savings.

Change Management

One of the benefits of the Design/Build project delivery is that the need for change orders is minimized. GSE considers the two primary causes of change orders on a Design/Build project to be differing site conditions and owner requested changes to scope. This contrasts significantly with the Design-Bid-Build methodology which often fosters a cumbersome and adversarial approach to managing changes.

During the Construction phase of the project, GSE utilizes the Procore platform to track and communicate any changes that would affect project scope and deliverables. Each impact is recorded as a Change Event (CE) and assigned a corresponding number (i.e. CE #013). It is important to note that not all Change Events have an impact on the prime contract. Those CEs which may impact the scope or deliverables of the project will be issued as Potential Change Orders (PCOs) and communicated to the Owner's project manager via Procore.

Based on historical data, GSE Change Orders for Pump station projects typically range from 0%-3% of base project cost. Change order details for recently completed Design/Build and pump station projects are listed on the next page;

PROJECT	ORIGINAL PROJECT VALUE	CHANGE ORDERS	CHANGES AS % OF BASE
Napa MST Recycled Water Booster Pump Station	$2,400,330	$79,765	3.32%
Utility Water Pump Station	$739,800	$35,797	4.84%
Tower Pump Station Rehab Project	$1,073,556	($2,952)	-0.27%
ESIPS Pump No. 3 Project	$543,600	$3,045	0.56%
Recycled Water System Phase IV Pump Station	$1,399,000	$22,517	1.61%
Sewer Lift Station @ Monitor St. and White Lane	$1,604,780	($25,022)	-1.56%
WWTP No. 3 Digester Mixing Pump Replacement	$339,000	($611)	-0.18%
LVW Nitrate Treatment System	$1,870,490	$114,442	6.08%
Mallard Dam I/O Improvements	$540,700	($75,731)	-14.01%
Land O Lakes Facility Upgrades	$6,604,553	$220,781	3.34%
El Estero Influent Pump Replacement	$2,583,700	$258,362	10.0%

The above table clearly demonstrates GSE Construction's ability to deliver projects successfully on budget with limited change orders. The vast majority of change orders relate to either owner-initiated changes to the design, or are caused by differing site conditions, unforeseen by the the owner, designer, or GSE Construction.

The following project sheets demonstrate representative project experience over the last 5 years.

PROJECT EXPERIENCE

MST RECYCLED WATER & BOOSTER PUMP STATION NO. 1

NAPA | CA

DETAILS

YEAR COMPLETED
2016

CONTRACT AMOUNT
$2,400,330

OWNER
Napa Sanitation District

ENGINEER
RMC Water & Environment

PROJECT RELEVANCE

Construction of a pump station, pipelines, and additional work. The work included demolition of existing fencing, concrete, building utilities, and pavement. UG/AG Steel Piping, valves, and appurtenances for recycled water suction and discharge. Installation of vertical turbine pumps (3 pumps, 2 additional pump cans for future), Hydro pneumatic and surge tanks. Construction of reinforced masonry buildings, reinforced concrete structures and equipment pads and installation of associated pipe, valves, fittings, and appurtenances. Installation of instruments, PLCs, SCADA equipment, including system integration and software programming. AB/AC paving, grading, drainage. Performance/ functional testing of electrical mechanical, and pumping/piping systems.

INTERNATIONAL WINEMAKER LWN NITRATE TREATMENT SYSTEM

LIVINGSTON | CA

DETAILS

YEAR COMPLETED
2014

CONTRACT AMOUNT
$1,880,776

OWNER
International Winemaker

ENGINEER
Applied Technologies Inc.

PROJECT RELEVANCE

GSE provided all equipment and services necessary to provide a treatment system for wells 7, 6, and 4. Provided a blended incoming water quality specification for all wells to be below the maxiumum contaminate level (MCL) of 42 mg/L at all times. Designed and installed a complete solution to treat maximum of 1000 gallons per minute of incoming potable water and reduce the nitrate level from 100 mg/L to below 20 mg/L in effluent of the treatment system.

PROJECT EXPERIENCE

RECYCLED WATER BOOSTER PUMP STATION
MOORPARK | CA

DETAILS

YEAR COMPLETED
2017

CONTRACT AMOUNT
$1,399,000

OWNER
County of Ventura

PROJECT RELEVANCE
The project consisted of the construction of the new Phase IV Recycled Water Booster Pump Station. It included a CMU block pump enclosure housing, 4 pumps and motor units, variable speed drives, panels for electrical power distribution, panels for system control, pipe, valves and fittings and a 5,000 gallon hydropneumatic tank.

MONTEVINA WTP IMPROVEMENTS PROJECT
LOS GATOS | CA

DETAILS

YEAR COMPLETED
2017

CONTRACT AMOUNT
$15,100,000

OWNER
San Jose Water Company

ENGINEER
HDR

PROJECT RELEVANCE
Design, furnish and installation of structural, mechanical , and underground utilities as part of HDR Constructor's Design/Build expansion of the Montevina WTP facility. Work included demolition of an existing media filtration plant and construction of a new Membrane filtration facility including flocculation & settling basins, Ultra Filtration (UF) Skids, Recovery RO, CIP System, Chemical Feed, Lab, and Administration Building.
As part of the project a new Solids Dewatering facility was constructed remotely consisting of two (2) 40' Diameter Gravity Thickeners, Sludge pumping station, FKC Screw Press, sludge conveyors, chemical feed system and associated site improvements.

ENGINEERING EXPERIENCE

Coleman Engineering has designed many potable water supply pump stations in the 100 – 1,000 gpm capacity range similar to those for the Hillcrest and Silverado pump stations. Coleman's experience includes water supply pump stations up to 5,450 gpm capacity. Representative project examples are detailed below. Coleman's Design Project Manager, Simon Gray, has extensive experience in the planning, design, assessment and construction of over 30 water, wastewater and recycled water pump stations ranging from 100 gpm to over 1,150 mgd. Details of Chad's and Simon's individual pump station experience are included in their resumes in the Appendices.

MIDAS BOOSTER PUMP STATION, ROCKLIN, CA: Coleman Engineering designed a water booster pump station for a new residential development. The pump station was located at the existing Placer County Water Agency Midas Tank site in Rocklin, CA. The design included hydraulic modeling of the distribution system, a surge analysis, and a preliminary design report and cost estimate. The pump station included a pump building, electrical and control panel, emergency generator with automatic transfer switch, fuel tank, surge tank, and a total of 3 jockey pumps and 2 booster pumps with variable frequency drives. Two jockey pumps operate in a range of 12 -70 gpm and the third in a range 70 – 240 gpm. The booster pumps operate in the range 240 – 1162 gpm. The project also included modifications to an existing tank, with a new above ground wall mounted tank nozzle and tie-ins to the exiting tank inlet/outlet and overflow lines.

ALLENDALE BOOSTER PUMP STATION, HOLLISTER, CA: The project included the design of a booster pump station for the City of Hollister, CA. The pump station draws off an existing City storage tank and pumps potable water to a new residential development. It has seven pumps: two jockey pumps each discharging 51 gpm, three low-flow pumps each of 202 gpm, and two high-flow pumps each capable of pumping 1,616 gpm. Coleman Engineering prepared civil, mechanical, electrical, structural engineering plans and specifications, as well as for instrumentation and control and superstructure architecture.

HYDROPNEUMATIC PUMP STATIONS 2.3 AND 3.3, BRENTWOOD, CA: Coleman Engineering was responsible for design of two hydropneumatic booster pump stations for the City of Brentwood, CA. Pump Station 2.3 has a firm capacity of 1,400 gpm and a total capacity of 5,400 gpm. It is used to provide domestic service and fire protection water to the northwest side of Brentwood. The system included a 25,000-gallon hydropneumatic tank and a 450kW generator. Pump station 3.3 was required to serve the new Vineyards development in the City. The pump station included four domestic pumps capable of a firm capacity of 750 gpm and a maximum capacity of 3,300 gpm. In addition, the site included a 275kW emergency generator and a 20,000-gallon hydropneumatic tank.

RENO VA HOSPITAL BOOSTER PUMP STATION, RENO NV: The project included the design of a potable water pump station to meet domestic and fire flow demands. Coleman Engineering prepared a full range of plans and specifications for the six-pump station that included one 7.5 HP jockey pump delivering 12.5 gpm, one 100 HP fire-flow pump with a capacity of 1,000 gpm, and four 30 HP domestic water pumps each with a capacity of 350 gpm.

NON-POTABLE WATER STORAGE TANK AND PUMP STATION, BRENTWOOD, CA: The project include the design of a 3 million-gallon pre-stressed concrete water storage tank together with a non-potable water pump station capable of a firm delivery of 3,300 gpm. The tank elevation was set to correspond to the existing hydraulic grade line of the wastewater treatment plant discharge so that double pumping would be avoided. The tank and pump station were sized to maximize the opportunity to store and deliver recycled water so that surface water discharge is minimized.

ATHERTON DRIVE WATER STORAGE TANK AND BOOSTER PUMP STATION, CITY OF MANTECA, CA: Simon Gray was the design phase project manager for this fast track, $5.3 million design build project comprising a 3.6 million-gallon capacity welded steel tank, a 1,500 gpm booster pump station with five 150 HP vertical turbine pumps in a CMU building, piping, and on-site standby power generation. Site improvements, including landscape and building architecture, were also part of the project. The site layout was designed to allow for a future well with a wellhead treatment system. *Simon completed this project with a previous employer.*

HYDROPNEUMATIC PUMP STATION AT BRENTWOOD

CONSTRUCTION EXPERIENCE

GSE Construction's treated water facility experience includes new construction and renovation of;

- Pump stations
- Pipeline, conveyance, and transmission systems
- Storage tanks and reservoirs
- Potable water filtration facilities
- Chemical feed and disinfection systems
- UV and ozone disinfection systems
- Reclaimed/reuse water treatment facilities
- Membrane filtration and treatment systems

GSE self performs critical elements of its work including earthwork, underground utilities, structural concrete, metals erection, equipment installation, and piping.

Average Tenure of GSE Craft Foreman– 16.4 Years

PROJECT MANAGEMENT EXPERIENCE

Michael Tippett will serve as the Project Manager and main point of contact for the project. Michael brings with him a wealth of experience managing pump station projects for clients such as San Francisco Public Utilities Commission (SFPUC) and most recently for the City of Brentwood. Michael employs an open and collaborative approach making him ideally suited for a design/build project delivery.

Michael will host and record on-site progress meetings with representatives of the City, the design team, and key subcontractors on a weekly basis. The meeting agenda and minutes will be issued to participants and maintained on the Procore site. Lines of communication and procedures/timeframes for decision making will be established at the onset of the project.

At each stage of design progression (e.g., Basis of Design, 30%, 60%, 90%), a collaborative Design Review Meeting (DRM) will be held to solicit feedback and perform a value engineering review of the design documents. Following the DRM, a cost analysis of any proposed changes would be prepared and distributed to the team for review and approval. A summary of the design decisions and scope changes will be distributed to the team for confirmation.

Monthly Primavera P6 CPM Schedule Updates will be provided to the team throughout the design and construction phases of the project. In addition, JJ Macarandan, GSE Project Superintendent, will prepare and distribute weekly 3-Week Look-Ahead schedules during the construction phases of the project. JJ will serve as the day-to-day point of contact during construction. He will be responsible for notifying the City of any potential safety or operational coordination issues, as well as oversee and direct all subcontractors on site.

SAFETY EXPERIENCE

GSE Construction has an extensive record of safe construction spanning more than three decades. We developed and employ a well-established approach to ensure and monitor safe work practices. It is comprised of several innovative methods to improve communication and eliminate complacency with regard to safety. The program is designed to comply with all Cal OSHA, Fed OSHA requirements (29 CFR, Part 1910 & 1926), USACE Safety and Health Requirements Manual (EM 385-1-1) and requirements tailored to meet specific contract requirements. Components of our approach include development and implementation of a project-specific Injury and Illness Prevention Plan (IIPP) and daily Job Hazard Analyses (JHAs) that are reviewed and updated throughout the project.

Site Specific and General Safety Training

GSE ensures that all employees receive the required safety training for their specific craft and tasks prior to arrival on the project. Periodic retraining is conducted as required to ensure that each individual employee is up to date on their safety certifications and training. If an employee demonstrates that they may require additional training, we conduct retraining so that the employees are aware of the safe work practices required on site. In addition, each employee receives site-specific safety training prior to commencing work on site.

Monthly Joint Site Safety Inspection Program

Each month our onsite Construction Manager and safety staff will partner with our subcontractors to conduct joint safety inspections to review ongoing work, identify hazards and review hazard mitigation measures. From our past experience, this program provides true opportunities to improve communication and foster overall partnerships regarding safety.

Weekly Tool Box Safety Meetings

Each Monday a tool box safety meeting is held with the entire work force on the project. Specific tasks are discussed that are pertinent to general safety as it pertains to the construction industry and the project.

Subcontractor Responsibility

Subcontractor employees are treated the same as in-house staff, with the same expectations for safe performance, the same discipline plan and the same motivational program. Our safety staff will ensure that subcontractors meet safety expectations through daily monitoring of the work.

Safety Incentive Program

We utilize a proven safety incentive program that includes both in-house personnel and subcontractors. Individuals are nominated by their fellow coworkers for safety awareness and innovation. Prizes are provided including gift cards, tee shirts, and specialty items. Projects that demonstrate excellence in their approach to jobsite safety are also rewarded with safety lunches and barbeques.

The following letter provides details of the Experience Modification Ratios (EMR)

HUB International Insurance Services Inc.
2300 Clayton Rd.
Concord, CA 94520
P: (925) 609-6500
F: (925) 609-6550
www.hubinternational.com

October 15, 2018

To Whom It May Concern:

RE: GSE Construction, Inc.
#4101646

This letter will serve as evidence of GSE Construction's current and prior experience modifications:

October 1, 2018/19 -	84%	
October 1, 2017/18 –	88%	
October 1, 2016/17 –	106%	* Subsequently amended to 92%
October 1, 2015/16 -	70%	
October 1, 2014/15 -	67%	

Evidence from the Worker Compensation Insurance Rating Bureau's web-site is available upon request.

Thank you and please advise if you have any questions.

Sincerely,

Rachel M. Stroup

Rachel M. Stroup
Senior Vice President
Construction Division

* Supporting documentation can be found in Appendix 3

REFERENCES

TEAM NAME	REFERENCE 1	REFERENCE 2	REFERENCE 3
GSE, Construction Inc.,	Roger Remolacio PE, CCM 4Leaf, Incorporated | 2126 Rheem Drive | Pleasanton, CA 94588 Office: 925-462-5959 | Cell: 925-605-8346 | Email: rremolacio@4leafinc.com	Ken Reed, Projects Manager City of Lathrop | 390 Town Center Dr. | Lathrop, CA 95330 Office: 209-941-7363 | Cell: 209-712-3138 | E mail: kreed@ci.lathrop.ca.us **https://www.youtube.com/watch?v=F1IheyICw9I&feature=youtu.be**	Alex Stroup, P.E., Senior Engineer Contra Costa Water District Direct: 925-688-8016 | Email: astroup@ccwater.com
Dennis Gutierrez, Project Executive	Luis Llamas, PE. Principal Engineer Contra Costa Water District (CCWD) Office: 925-688-8174 | Mobile: 925-383-2644 | Email: lllamas@ccwater.com	Suzan England, PE Senior Utilities Engineer City of Hayward Water Pollution | Control Facility Office: 510-293-5098 | Mobile: 510-385-3133 | Email: Suzan.England@yahward-ca.gov	Andrew Delgado, Owner/CEO Total Process Systems (Consultant for Mariani Packing Company) Mobile: 408-438-0152 | Email: adelgado@totalprosystems.com
Michael Tippett, Project Manager	John Samuelson, PE, Engineering Manager City of Brentwood Office: 925-516-5307 | Email: jsamuelson@brentwood.com	Gerrit Post, PE, Project Manager Covello Company Mobile: 925-766-2099 | Email: Gerrit.post@psomas.com	Boon Lim, Construction Manager San Francisco Public Utility Commission Mobile: 415-517-3116 | Email: blim@sfwater.org
JJ Macarandan, Construction Superintendent *(the role of Construction Superintendent also acts as the Construction Foreman when on jobsite)*	Rudy Portugal, PE, Associate Engineer Dublin San Ramon Services District | 7051 Dublin Blvd. | Dublin CA 94568 Office: 925-875-2251 | Mobile: 925-98-9121 | Email: rportugal@dsrsd.com	Rolando Bueno, Senior Civil Engineer - Construction Division East Bay Municipal Utility District | 1100 21st St. | Oakland, CA 94607 Office 510-287-7038 | Mobile: 510-453-7478 | Email: rolando.bueno@ebmud.com	Kevin Swazas, PE, CCM, Senior Construction Manager Sacramento Regional County Sanitation District | EchoWater Project 8521 Laguna Station Road | Elk Grove, CA 95758 Mobile: 916-832-9119 | Email: swazask@sacsewer.com
Bezhad Nasari, QA/QC Manager	John Samuelson, Engineering Manager Public Works/Engineering City of Brentwood | 150 City Park Way | Brentwood, CA 94513-1164 Office: 925.516.5307 | Fax: 925.516.5421 | Email: jsamuelson@brentwoodca.gov	Maggie Kido, P.E., PMP, Project Manager | Program Management Office (PMO) Sacramento Regional County Sanitation District | EchoWater Project 8521 Laguna Station Road | Elk Grove, CA 95758 Office: 916-875-9439 | Mobile: 916-832-5436 | Email: kidom@sacsewer.com	Ken Reed, Senior Construction Manager City of Lathrop | 390 Towne Centre Drive | Lathrop, CA 95330 Office: 209-941-7363 | Mobile: 209-712-3136 Email: kreed@ci.lathrop.ca.us www.ci.lathrop.ca.us
Coleman Engineering	James Lowden, General Manager Los Molinos Community Services District Office: 530-824-2914	Keith Coggins, Engineer Development Manager City of Oakley Office: 925-625-7155	Chris Ehlers, Assistant Director of Public Works/Operations City of Brentwood Office: 925-516-6030
Chad Coleman	Brenda Bonillo, District Secretary Tuolumne City Sanitary District Office: 209-928-3517	Clarence Chu, President Locke Water Works Company Office: 916-776-1661	Charles Palmer, District Engineer Calaveras County Water District Office: 209-754-3174
Simon Gray	Sean White, Director of Water Resources City of Ukiah | 300 Seminary Ave. | Ukiah, CA Office: 707-467-5712 | Email: swhite@cityofukiah.com	Mike Michael, Engineering Manager (Development} (formerly City Engineer, Shelton, WA) Department of Public Works City of Bainbridge Island | 280 Madison Avenue N | Bainbridge Island, WA 981110 Office: 206-780-3745 | Email: mmichael@bainbridgewa.gov	Phil Govea, Formerly Deputy Director of Public Works, City of Manteca, CA Now Engineering Services Director / District Engineer Delta Diablo Sanitation District Office: 925 -756-1900

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SUMMARY OF SUBCONSULTANTS/ SUBCONTRACTORS

In this Section we have identified and provided a summary of our design subconsultant and construction subcontractor firms and their relevant skills, qualifications and experience. Details of the key personnel from these firms who are part of the GSE Construction Team have been included in Section C - Summary of Qualifications and Experience. These key individuals are shown on the Organization Chart also included in Section C.

Our Lead Designer, Coleman Engineering, Inc., and its key personnel, are fully detailed in Section C.

DESIGN SUBCONSULTANTS

Crawford & Associates, Inc – Geotechnical Investigation and Design: Crawford & Associates, Inc is a full-service geotechnical engineering firm based in Sacramento, CA, with other Northern California offices in Pleasanton, Ukiah, Modesto and Rocklin. In addition to geotechnical investigation, testing and reporting, the firm provides geotechnical foundation design, materials testing, special inspection, and hazardous materials assessment services in the water and wastewater, bridge and structures sectors. In the water and wastewater fields, Crawford specializes in investigation for, and design of, pump stations, treatment plants, tanks, pipelines and reservoirs. The firm has broad experience working with various oversight agencies, including FEMA; Cal OES; FHWA; Caltrans; regional water quality control boards; State of California Departments of Water Resources and Fish and Wildlife, United States Corps of Engineers; and Union Pacific Railroad. Typical clients include cities, counties and special districts. The firm merged with Taber Consultants in 2016, one of the nation's oldest geotechnical engineering firms. Crawford & Associates has significant experience working with Coleman Engineering and its staff, including the highly relevant Atherton Drive Water Storage Tank and Booster Pump Station Project for the City of Manteca, CA. This $5 million project was a successful design build project.

Principal Ben Crawford will be the firm's lead for the Hillcrest and Silverado Pump Stations Replacement Project.

Frisch Engineering – Electrical and Instrumentation & Control Engineering Frisch Engineering was founded in 2001 and has been dedicated to the water, wastewater and power industries ever since. Based in Folsom, CA and with over 650 projects completed, the firm provides a high level of quality and performance to ensure each project is success from concept to completion. Typical projects are pump stations, treatment plants, reservoirs, wells, wastewater lift stations, power plants, hydro-electric facilities, substations, and telemetry systems. Frisch Engineering is proficient in power distribution, protective relaying, hardware controls, PLCs, SCADA, programming, and instrumentation. They are very experienced in automated controls, power coordination, arc-flash safety, and communications, since these elements are used in most projects. Most systems require radio, telephone, and / or LAN / WAN for communications to SCADA. Frisch Engineering is presently working as a consultant on conventional design-bid-build projects, and as an engineer and construction partner on design-build projects.

Principal Tom Frisch will be the firm's lead for the Hillcrest and Silverado Pump Stations Replacement Project.

VE Solutions, Inc – Structural Engineering Founded in 1997 and located in Carmichael, CA, VE Solutions, Inc provides structural engineering design for steel, concrete, prestressed concrete, masonry and wood buildings and structures. The firm has particular experience in the rehabilitation of damaged structures. VE Solutions' Principal, Brad Friederichs, has worked on numerous water and wastewater infrastructure projects as structural designer for Coleman Engineering. For these and other projects where architectural treatment is needed, VE Solutions regularly teams with Saxon Sigerson of Sigerson Architects, based in Fair Oaks, CA. This team of Brad and Saxon will work closely together to develop the new superstructure designs for the Hillcrest and Silverado Pump Stations.

Sigerson Architects Saxon Sigerson founded Sigerson Architects in 1999. He has a degree in Architecture from the University of Southern California. He has worked on architectural designs for major pump stations in Auburn and Pasadena, CA.

Carlson, Barbee & Gibson, Inc – Topographical Mapping and Survey A 30-year old firm, Carlson, Barbee & Gibson (CBG) specializes in civil engineering, planning and survey. With offices in San Ramon, CA and West Sacramento, CA, the firm has over 100 professionals, registered engineers and licensed surveyors. Survey services include full topographic mapping, boundary surveys, preparation of plat maps and legal descriptions, right-of-way surveys, ALTA land title surveys, construction staking and GIS mapping.

Survey Manager Mark Wehber will be the lead for topographical mapping and survey for this project.

SMB Environmental – Biological Resources Monitoring: SMB Environmental is a Roseville-based environmental consulting firm that specializes in providing environmental, regulatory, and public relations support for a variety of water and wastewater projects. SMB has direct experience in preparing environmental clearance documents to meet CEQA and NEPA requirements, and in successfully completing environmental compliance documentation for federal, state and local projects.

Principal Steve Brown will be the lead for the Hillcrest and Silverado Pump Stations Replacement Project.

CONSTRUCTION SUBCONTRACTORS

Tesco Controls, Inc – SCADA and Controls Tesco Controls, Inc. is a leading full-service systems integrator and original equipment manufacturer. Their business is designing, manufacturing, and integrating electrical and process control systems for water, wastewater, transportation, lighting and renewable energy applications. Tesco specializes in designs that optimize operations, increase overall efficiency, and reduce operating costs.

Tesco is a 100% employee-owned company with 6 regional locations from California to Louisiana. Their 125,000 sq. ft. state-of-the-art manufacturing and technical services facility is headquartered in Sacramento, CA. Since 1972, Tesco has completed over 50,000 projects, including the successful implementation of over 400 SCADA systems nationwide.

Tesco's engineering services include instrumentation and control systems design;

electrical switchgear design (UL-891); electrical motor control equipment design (UL-845); industrial control panel design (UL-508); power distribution systems design and analysis; Arc flash risk assessments (AFRA), analysis, labeling, and mitigation; network infrastructure; and radio/telemetry systems design. Their systems integration capabilities include electrical equipment manufacturing, system fabrication and installation supervision, PLC manufacturing and programming, SCADA system development, software configuration, documentation, field testing, calibration, start-up, operator instruction and personnel training. A significant portion of Tesco's projects are delivered using design-build and alternative delivery methods.

Fidel Electric, Inc – Electrical Fidel Electric Inc. was founded in 2004 by Anthony and Paul Fidelus. The firm provides electrical contracting for water and wastewater treatment and conveyance facilities. This includes pump station power, odor control, and HVAC. Key public agency clients for pump stations include the City of West Sacramento, Contra Costa Water District, EBMUD and Central Contra Costa Sanitation District. For the City of Napa, they worked on the MST Recycled Water and Booster Pump Station Project.

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PROJECT UNDERSTANDING AND APPROACH

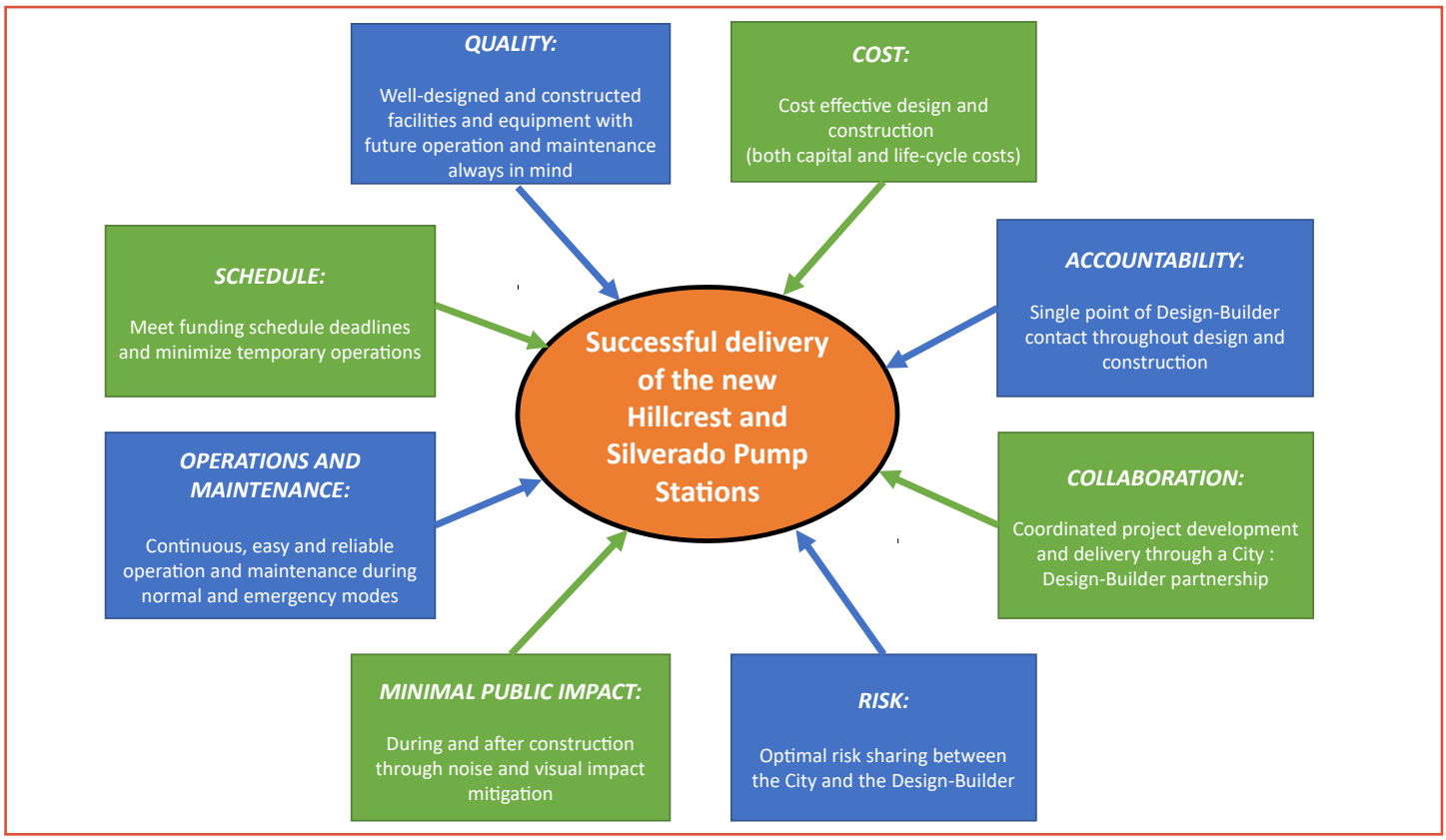
PROJECT UNDERSTANDING

The catastrophic 2017 Atlas Fire destroyed two City-owned potable water pump stations in the Silverado Country Club neighborhood: the Hillcrest and Silverado pump stations. The original wooden superstructures to both stations were destroyed, leaving just scorched and charred pipework and pumps on each exposed concrete slab foundation. The City is currently using rental pumps and ancillary equipment to maintain water service to the community, and now intends under this project to reconstruct both pump stations with increased fire resistance.

The original Hillcrest pump station consisted of three pumps: two 40 HP Paco pumps each with a capacity of 425 gallons per minute (gpm) and a total dynamic head (TDH) of 195 feet; and a 50 HP Paco pump capable of pumping 625 gpm through a TDH of 180 feet. The Hillcrest pump station pumped directly from the City's Pressure Zone 3 into the 2 million-gallon (MG) capacity Milliken Tank that serves the higher-elevation Pressure Zone 4. The Milliken Tank's total storage capacity is more than adequate to provide fire flows of 1,000 gpm for a duration of 1 hour (60,000 gallons) to Pressure Zone 3 under gravity: meeting the City's current Fire Code requirements. These fire flow demands will be confirmed with Napa County Fire at the start of design, per the City's request. As a result, the replacement Hillcrest pump station will be initially sized to be similar to its existing capacity and it is assumed for the purpose of this proposal that it does not need to be upgraded to a total capacity of 1,000 gpm. However, this capacity issue will be addressed during the project design phase, since the RFP also mentions a need to fill the Milliken Tank more efficiently. The design will evaluate the viability and cost effectiveness (in terms of both capital and long-term life cycle costs) of a layout that provides three equally-sized pumps equipped with Variable Frequency Drives (VFD) to meet both normal operating and fire flow demands. This is discussed in more detail in the Project Approach below.

The Silverado pump station was located adjacent to the Milliken Tank in Pressure Zone 4 and pumped flow from this tank into the Silverado Highlands Tank serving the higher-elevation Pressure Zone 5. The pump station had three pumps: two 5 HP Paco pumps each with a capacity of 100 gpm with a TDH of 71 feet and a larger 50 HP Paco pump with a capacity of 1,000 gpm again pumping through a TDH of 71 feet.

The Silverado Highlands Tank is small, with a capacity of just 10,000 gallons. As a result, it provides minimal, if any, fire flow storage. The replacement Silverado PS must thus be capable of pumping the full fire flow demand of 1,000 gpm to protect Pressure Zone 5. It is also assumed that since the Silverado pump station is fed from the Milliken Tank, that tank has sufficient fire flow storage to serve both Pressure Zones 4 and 5. The City has confirmed this, and that the tank also assists in providing fire protection to Zone 3. The Milliken Tank has sufficient storage to meet demands for simultaneous fire events in multiple pressure zones. We understand that efficiency in filling the Milliken Tank is a key consideration of this project.



The project includes an analysis of two alternatives for replacing the pump station facilities:

- **Alternative A** is the replacement-in-kind of the two existing pump stations to return them to their pre-fire condition. This includes replacement of the stations' reinforced concrete foundations and all pumps, valves, meters and piping; replacement of power supply, SCADA and craneage facilities, and replacement of a standby generator at the Silverado pump station site. Both superstructures would be replaced in-kind by wooden enclosures with similar architectural treatment to those of the destroyed pump stations.
- **Alternative B** requires improved hazard mitigation improvements and increased fire resiliency to protect the pump stations. In addition to the appropriate improvements provided under Alternative A, the pump stations would be constructed with CMU block walls, metal roofs or other compatible and code-compliant fire-resistant construction; fixed standby generators with automatic transfer switches within both pump stations; use of VFD pumps of equal size to match daily and fire flow demands and more efficiently fill the Milliken Tank; and exterior connections and valves to allow easy connection of temporary diesel pumps in the event of a total system failure.

The City intends to construct an agreed form of **Alternative B.** Alternative A will be used primarily for pricing so that FEMA / Cal OES, as funding agencies, are apprised of the 'like-with-like' replacement costs.

The replacement pump stations are required to meet current City water system design standards for reliability, emergency operation and resilience, and service area fire flow requirements. Detailed objectives for successful delivery of the two replacement pump stations are illustrated on the previous page.

PROJECT APPROACH: DESIGN PHASE

Design Phase Tasks

Attachment E – Scope of Work and Project Technical Requirements of the RFP details the proposed scope of work for both the design and construction phases. In Section H – Exceptions to Scope of Work below, we have modified and expanded the description of the scope to fully detail the tasks and activities to be completed in the design phase. This same scope and task list is also used in Section G – Project Schedule so that task activities, task durations, and milestones are correlated. The approach to design is detailed below. We have assumed, for the purposes of the approach described below and on the project schedule, that the full set of construction-ready design documents will have to be approved by the City before any construction takes place. The project schedule presented in Section G shows that this approach allows the City's key milestones set by the funding agencies to be met: in fact, the schedule shows that we intend to finish the project earlier than these key dates to allow the City to reduce current temporary facility costs and put the replacement pump stations back into service as early as possible. At the start of the project, we will also look, with the City's approval, to see if a phased and earlier approval of design elements, say the structure foundations, with a resulting earlier start to construction, improves the schedule further.

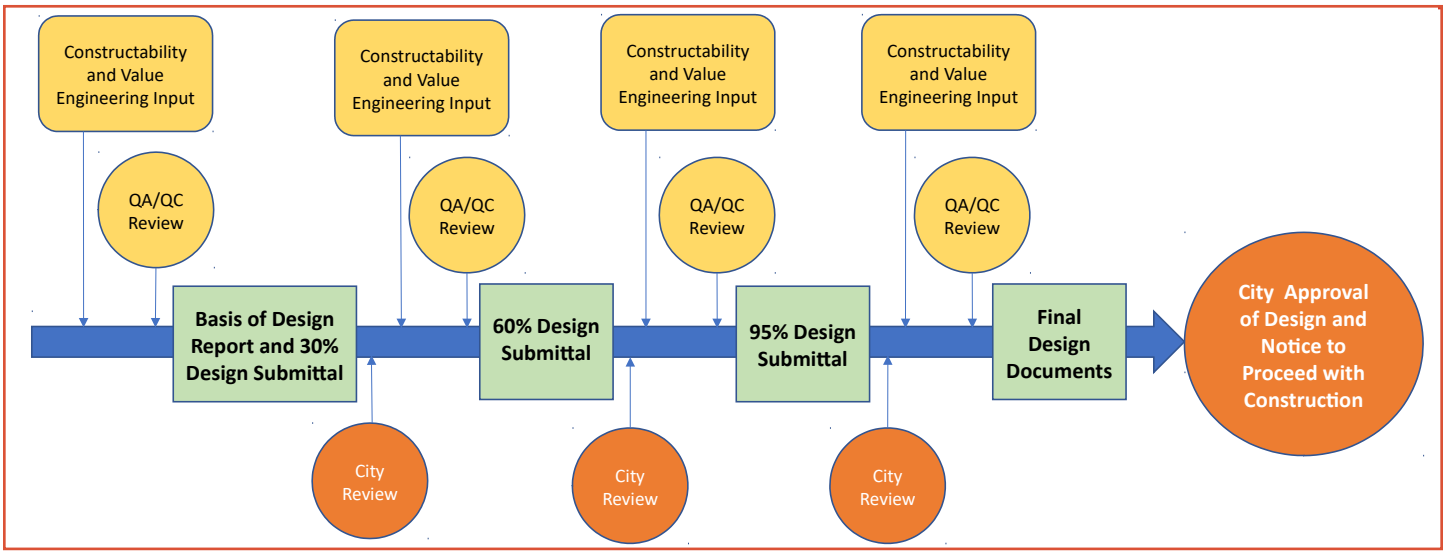
Design activities are detailed in the first tasks: Task 1 – Project Management and Meetings and Task 2 – Design Preparation.

Task 1 – Project Management and Meetings includes for project management in the design, construction and commissioning phases. During the design phase, Task 1 activities include project planning and preparation of the Project Management and Quality Management Plans, communication and coordination including the City, project scheduling and updates, and the kick-off and subsequent progress meetings.

Task 2 – Design Preparation includes all technical and non-managerial tasks for design. Initial activities in this task include a team site visit, data collection and review, and a workshop to confirm the scope for the Basis of Design Report (BODR). The design phase consists of a series of design submittals at increasing levels of completion for City review. The intent is to ensure that the City's input into the design is considered on a regular basis and that the City is a partner that concurs with decisions made as the design progresses. The design team can then proceed with further work with confidence. An integral part of the design process will be regular consultation with GSE Construction to ensure the design is compatible with proposed equipment and the contractor's intended methods and sequencing of construction. This approach is one of continuous constructability review and value engineering analysis.

Design submittals will be made at 30%, 60%, 90% and Final levels of completion. Each submittal will be reviewed internally prior to submittal using the quality management procedures detailed in Section F. Each submittal will also be subject to a constructability and value engineering review prior to issue. The 30% submittal will be coincident with the BODR and will include preliminary site plans and process diagrams; equipment and field instrument schedules; preliminary equipment submittals; civil, mechanical and electrical / I&C plans; electrical single-line diagrams; and an initial draft of technical specifications. At 60% design level of completion, the submittal will incorporate agreed City comments and include further design development, preparation of plans that now include structural and architectural details, and technical specifications. Geotechnical investigations, site topographical mapping, and coordination with utility companies will start prior to submittal of the BODR, with the geotechnical investigation report being produced prior to the 60% submittal. After review, the 90% design submittal will be made, followed by that for the Final Design Documents. Once the City has approved these documents and issued a notice-to-proceed, the construction phase will start.

This design approach for potable water pump stations has been used numerous times by our design team. Examples of similar projects demonstrating the approach and how consideration of alternatives has reduced impacts are included in Section C – Statement of Qualifications and Experience.



CONTINUOUS CONSTRUCTABILITY REVIEW AND VALUE ENGINEERING THROUGHOUT DESIGN

Technical Approach

Following a detailed review of the RFP, the pre-proposal meeting and site walk, we have developed the following technical basis for the Alternative B design of the two replacement pump stations:

Hillcrest Pump Station

The Hillcrest PS does not have to directly provide for fire flows, which means that it does not have to meet the current fire code demand of 1,000 gpm for 1 hour. However, the City has stated that:

"Operations would prefer for the Hillcrest PS to fill the tank more efficiently using larger pumps than what was previously there."

Taking into account the City's requirements in the RFP, we have interpreted the Hillcrest PS design criteria for this proposal stage to be three VFD pumps of equal size each capable of an operating range 200 gpm to 500 gpm to adequately meet daily and fire flow demands. The pumps would each pump through a TDH of 195 feet per the previous station design. We have selected pumps that, subject to a detailed review of the pump station's discharge hydraulics, will also achieve a discharge rate of 1,000 gpm when two pumps are in operation. This matches the fire flow demand, even though the fire flow rate is not technically required for this station. We will confirm technical feasibility of this early in the design phase. The control system will be designed to allow for two as well as single pump continuous running. A standby generator will be provided that is capable of running two pumps and associated facilities within the pump station.

The selected pump for the three equally-sized pumps in the Hillcrest Pump Station is the Paco CR 95-2 60 Hz 40 HP pump now manufactured by Grundfos. This is a vertical, multistage centrifugal pump with inlet and outlet pumps on the same level (inline). The motor is located above the pump. VFDs are provided for each pump.

The layout plan on the next page shows a potential layout for both pump stations. The suction main in the pump and electrical room has been aligned adjacent to one of the long walls to allow ease-of-access to the pumps for operation and maintenance. The discharge main is buried beneath the slab to also improve access to the pumps. The previous station had the suction and discharge mains on the station floor on either side of the pumps, making access to each pump difficult. The new proposed layout allows for adequate working space around the pumps. Outside of the building, the suction and discharge mains will be routed to connect to the existing underground piping. An overhead crane and the chlorine analyzer are also located in the pump and electrical room.

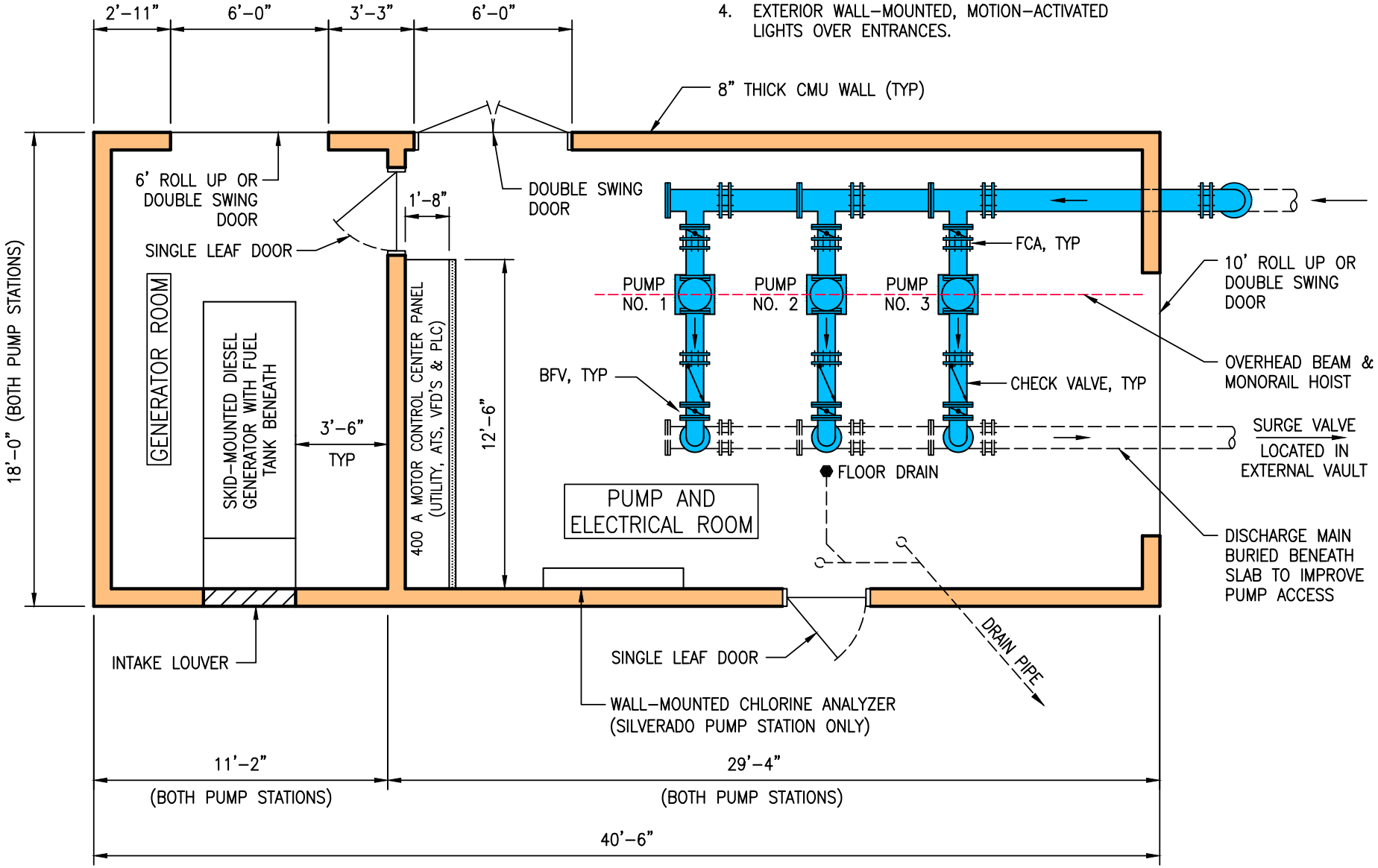
The 12' 6" long by 1' 8" wide by 7' 6' high 400A Motor Control Center panel in a NEMA 1 Enclosure for this station will contain the utility connection, main and distribution breakers, automatic transfer switch, pump controls, VFDs, the programmable logic controller, and associated ancillary equipment. The remote utility meter will be wall-mounted in a separate NEMA 3R enclosure.

Silverado Pump Station

In contrast to Hillcrest, the Silverado PS has to meet fire flow demands of 1,000 gpm for one hour. The City has advised that it requires a three-pump station with any two pumps together capable of meeting this 1,000 gpm flow rate. In addition, there is a requirement that each pump is equipped with VFDs to allow the City to run just one pump at low flows for tank maintenance. At this proposal stage, our design criteria for the Silverado PS is for three equally-sized pumps with VFDs, each capable of pumping in the range 200 – 500 gpm at a TDH of 71 feet. Any two pumps operating together must be capable of pumping 1,000 gpm. The station will be equipped with one standby generator of sufficient capacity to run two pumps, so that fire flow demands can be met even in the event of power failure.

The selected pump for the three equally-sized pumps in the Silverado Pump Station is the same as for Hillcrest, except that it will be equipped with a 25

NOTES:
1. ROOMS CAN BE SWITCHED IN PLAN TO SUIT EACH PUMP STATION.
2. PUMPS TO BE IN-LINE CENTRIFUGAL, TYP.
3. INLET AND DISCHARGE MAINS ORIENTATION TO SUIT EXISTING PIPELINES AT EACH SITE.
4. EXTERIOR WALL-MOUNTED, MOTION-ACTIVATED LIGHTS OVER ENTRANCES.



HP motor. Any two of these pumps pumping together will meet the fire flow demand of 1,000 gpm. We propose an identical pump station layout plan for the Silverado station to that for Hillcrest. The MCC panel will be identical to that of Hillcrest.

Superstructure Design

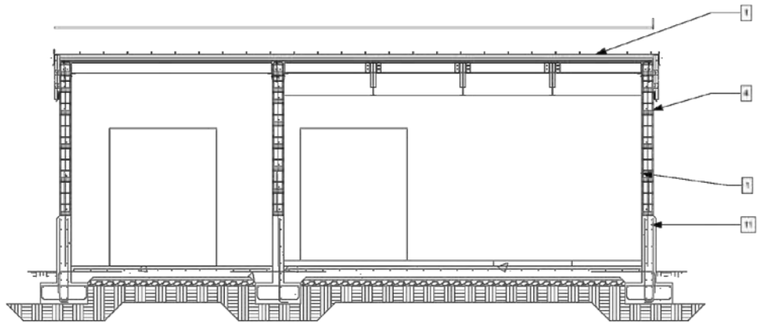
Both pump stations and electrical and control facilities will be housed within fire-resistant CMU buildings with metal roofs to significantly improve resiliency. The buildings will each receive an architectural and landscaping treatment that is consistent with their surroundings: at Hillcrest the pump station will be designed to be consistent with existing adjacent residential buildings and their perimeter block walls. We anticipate working with the City and the Silverado Country Club community to ensure that the building elevations and visual impacts are acceptable. One preliminary potential architectural treatment is presented on the following page.

Non – CMU Building Alternatives

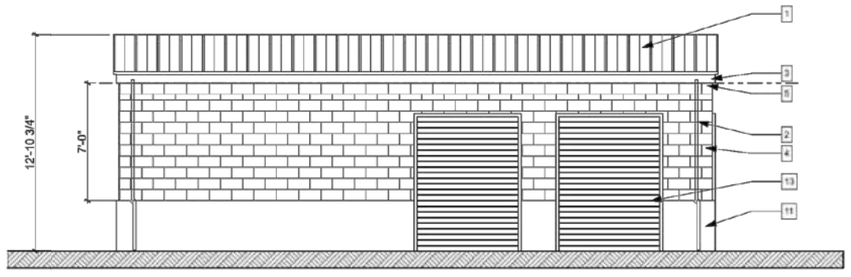
As part of value engineering investigations during this proposal stage, we have also evaluated two potential alternatives using pre-fabricated buildings and also skid-mounted pre-packaged pump stations. Details of these two alternatives are presented in Section K. Both alternatives offer advantages in terms of cost and schedule.

The potential cost and schedule savings of these alternatives over our base proposal based on the CMU buildings are also presented in Section K – Recommended Value Modifications. We anticipate discussing these alternatives in greater detail during contract negotiations.

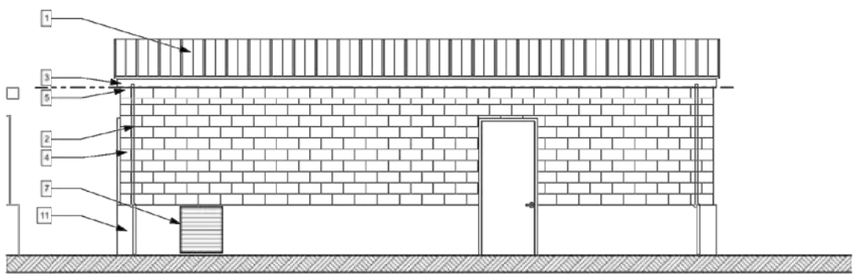
PRELIMINARY



2 SECTION
SCALE: 1/4" = 1'-0"



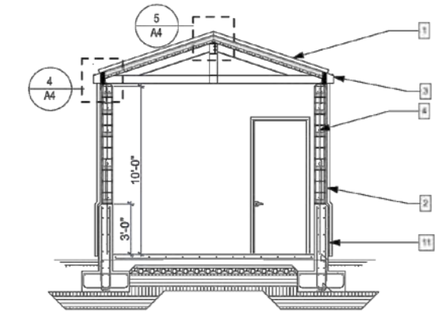
NORTH ELEVATION
SCALE: 1/4" = 1'-0"



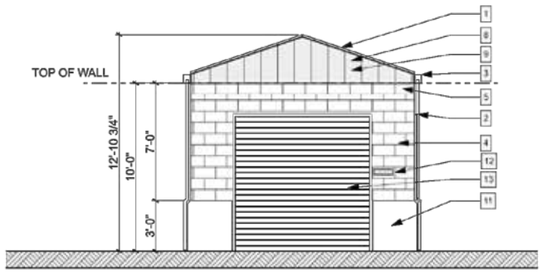
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

KEYED SHEET NOTES

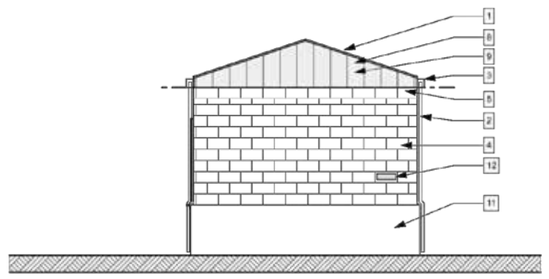
1. METAL ROOF PANELS - 4 : 12 ROOF PITCH
2. 2" X 3" GALV. METAL DOWNSPOUT - PAINT TO MATCH GUTTER
3. METAL GUTTER - FORM FROM METAL ROOF MATERIAL
4. 8 x 8 x 16 SPLIT FACE CMU BLOCK
5. 8 x 8 x 16 STANDARD CMU BLOCK AS LAST COURSE OF BLOCK @ TOP OF WALL
6. HOLLOW METAL DOOR - PAINT
7. GENERATOR ACOUSTIC LOUVER
8. GABLE END SIDING - INSTALL METAL ROOF PANELS VERTICALLY
9. CMU WALL EXTENDS TO BOTTOM OF ROOF FRAMING @ GABLE ENDS
10. 8 x 8 x 16 STANDARD CMU BLOCK @ GABLE END BEHIND SIDING
11. 10" CONCRETE WALL
12. SIGN TO MATCH EXIST. SIGNAGE ON SITE
13. METAL ROLLUP DOOR



1 SECTION
SCALE: 1/4" = 1'-0"



EAST ELEVATION
SCALE: 1/4" = 1'-0"



WEST ELEVATION
SCALE: 1/4" = 1'-0"

BAR IS ONE INCH AT FULL SCALE
0 1"
IF NOT ONE INCH ON THIS SHEET SCALE ACCORDINGLY

NO.	REVISIONS	BY	APP	DATE
6				
5				
4				
3				
2				
1				

HILLCREST AND SILVERADO PUMP STATIONS
ELEVATIONS & SECTIONS

DESIGNED UNDER THE DIRECTION OF:
EDIT ENGINEER DATE
R.C.E. No. - REGISTRATION EXPIRES
DESIGN: DATE:
DRAWN: DATE:
CHECKED: DATE:

SCALE
DRAWING NUMBER
SHEET NUMBER
OF SHEETS

PROJECT APPROACH - CONSTRUCTION PHASE

Upon approval of the 90% Design Documents, the GSE team will schedule a "Pre-Con" meeting with the City to review the construction work plan including, but not limited to, the following topics:

- Project communications and contact list
- Site specific safety plan (IIPP)
- Mobilization & staging plan
- QA/QC procedures
- Storm water pollution prevention plan (SWPPP)
- Neighborhood outreach & communications

Regular weekly meetings will be conducted by GSE's construction manager throughout the Construction and Commissioning phase of the project. Meeting agenda and minutes will be kept and distributed to the entire project team via GSE's online Procore Construction Management system. All project documents and correspondence, such as RFI's, submittals, inspections and photos, will be hosted on a dedicated Procore website made available to the City and the design team. More information on Procore can be found at ***https://www.procore.com/***

Mobilization will commence upon final approval of the project plans and all required permitting is in place. Mobilization to the site will be sequenced to minimize disruption to the nearby residents. Materials and equipment stored onsite will be kept within the fenced areas. Temporary fabric and/or plastic slats can be added to the fencing at the Hillcrest site if required. Care will be given to ensure City personnel are provided 24/7 access to the sites for maintenance of the temporary pumps. The temporary pumps connection points will be relocated to allow for continued operation while the existing pump pads and piping are demolished.

Demolition of the existing pump pads and piping will be performed sequentially at the sites. Special attention will be placed on noise, silica, and dust abatement at both sites, and particularly the Hillcrest site. All refuse and recyclable waste from demolition will be promptly removed and disposed of per applicable regulations. Upon completion of the demolition phase, the site will be conditioned and rough graded in preparation for the new concrete foundations.

Also, following the demolition phase, modifications to underground utilities will be performed to accommodate construction of the new pump station layout while maintaining supply to customers. It is anticipated that a short shutdown of the temporary pumps may be required to accommodate modifications to the inlet and discharge lines. The design of tie-points and layout will be done so as to minimize the disruption to pumping operations. GSE will provide ample notification to the City of any proposed shut downs and coordinate with City staff to ensure pipe disinfection and testing standards are met.

Upon installation of the pumps, generator, and electrical gear, an onsite pre-commissioning meeting will be convened to review the start-up and testing plan with City personnel. Following the substantial completion of the facility, a mechanical & electrical checkout of the system will be conducted, and all systems signed-off prior to disinfection and start-up. Mechanical checkout will include hydrostatic testing of piping systems, HVAC balancing, and the pump manufacturer's verification of proper installation. Electrical checkout will consist of continuity testing, point-to-point, bumping and rotation of motors.

Following mechanical/electrical checkout Tesco Controls will perform onsite programming, calibration and start-up of the pump station. A final shutdown and crossover of the piping system will be conducted to allow removal of the temporary pumping system. Special attention will be paid during this time frame to ensure water quality standards are met. It is anticipated that the commissioning of pump stations will be performed sequentially to minimize disruption and facilitate a smooth start-up process.

F

QUALITY ASSURANCE/ QUALITY CONTROL

OUR TEAM'S APPROACH TO QUALITY MANAGEMENT

Quality management in both design and construction comprises two distinct elements that are often confused or erroneously lumped together: quality control and quality assurance. Our approach includes both.

Quality Control. Quality control is a process of independent checking that confirms that project deliverables have been designed and / or constructed for their intended use to required standards of quality; fitness-for-purpose; safety; function; ease of construction, operation and maintenance; cost-effectiveness, and the like. We manage quality control using a project-specific **Quality Management Plan (QMP)** which describes the procedures required for checking. Quality control is based upon applying the "right reviews" at the "right time" with the "right people" to ensure that a project starts off correctly and ends successfully.

Quality Assurance. While also part of a QMP, quality assurance is distinct from quality control in that it is not the direct act of project deliverable checking. Instead, it is a process of verification and validation. Our quality assurance procedures are used to check that quality control procedures are being followed: we 'assure' our clients that we are actually doing what we say we are doing when it comes to independent checking and peer review of project deliverables. In a project's design phase, our quality assurance includes third party review of the quality control checking by our firm-wide Quality Manager. In construction, examples of quality assurance include independent representative materials testing. As an example, a construction contract can require a contractor to employ an independent testing firm to test concrete strength or foundation compaction to validate the results of the contractor's own materials testing.

DESIGN PHASE QUALITY MANAGEMENT

To meet quality expectations during the design phase of the project, we will prepare a QMP that forms part of an overall Project Management Plan (PMP). The PMP will be distributed to all members of our and the City's team at the start of the project. It will detail the project objectives, the project team, the deliverables required and those responsible for their production, a detailed project schedule that shows those deliverables, and project meetings and other milestones. For the City team, it will show when their input is needed to review deliverables and how long they have to provide comment on those submittals. The QMP will detail methods and procedures to verify that deliverables meet the City's and industry quality standards. It will also define the independent peer reviewers for each design submittal.

Prior to submittal, senior engineers highly experienced in the type of work being performed will review each deliverable as a ***quality control*** review. These reviewers are independent of the design team, so they are not influenced by previous approaches or thinking. With every submittal, the independent peer reviewers will sign a standard Quality Control Review Form to confirm that they have carried out the quality control review. The Design Manager will then sign the form to confirm receipt of comments from the peer reviewer and to confirm that agreed modifications to the submittal have been incorporated prior to it being released to the City. As verification, the Designer's Principal-in-Charge will then review that this procedure has been followed for each submittal and will sign-off as the final signature on the form. The completed Quality Control Review Form is kept on file with the project quality files for future reference in case of an internal quality audit, or one carried out by the City. This is our ***quality assurance.*** We will submit the fully-signed form with our submittals to demonstrate and verify to the City our compliance with our quality management procedures. As further quality assurance, our Design-Build Contractor's QA QC Manager will periodically review the project records to ensure that Quality Control Review Forms are fully completed and have been submitted with each deliverable.

During design, we will require each of our sub consultants to provide details of, and follow, their own program of quality control for their deliverables to the Lead Designer. For quality assurance compliance, the sub consultants are also required to demonstrate with documentation to our Design-Build Contractor's QA QC Manager that they are following their quality management programs.

A timetable for proposed deliverables is included in Section G – Project Schedule. Allowance is made internally for quality management procedures before deliverable submittal to the City.

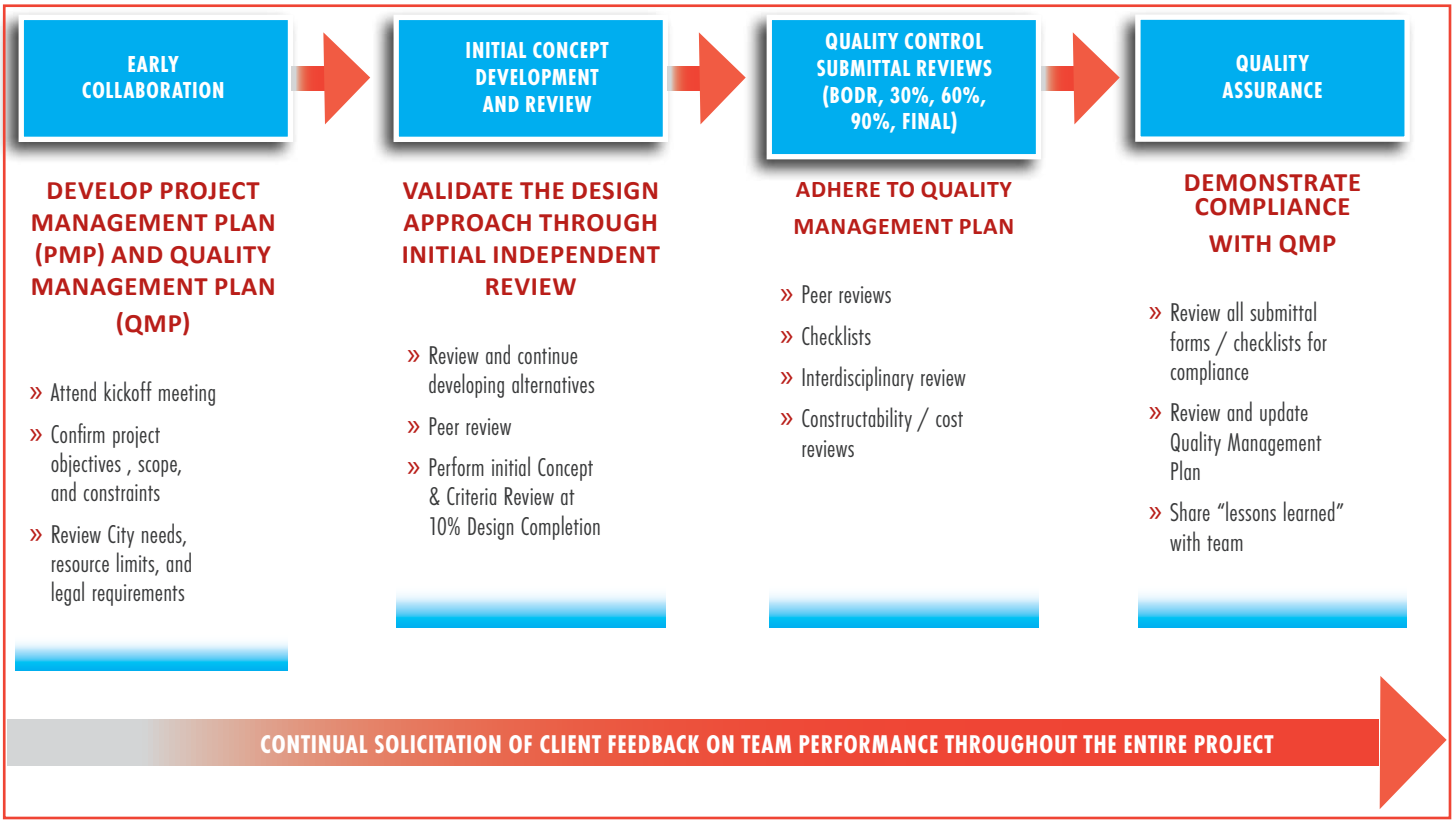
In addition to formal QMP procedures, we follow a number of other management practices during design to maintain quality:

- Efficient and regular communication, with an emphasis on "more" rather than "less".
- Effective use of meetings and workshops.
- Action and decision logs.
- Internal milestones for deliverable production.
- Technical memoranda.

We use meetings and workshops effectively by preparing detailed agendas that identify objectives for that meeting, information and input requested and decisions that need to be made. Action and decision logs are used at meetings to ensure key issues are promptly resolved and not forgotten. Each action item is allocated to a responsible team member, and a deadline established for its resolution and completion. Action and decision logs are reviewed at every meeting and included in meeting minutes.

Technical memoranda are used to describe proposed approaches and to present findings as soon as they become available after inspection, assessment or calculation work. Properly executed as concise interim deliverables, technical memoranda allow decisions to be made in real time, recommendations to be acted upon quickly, and the team (including our client) to move forward with confidence on an agreed track. Waiting until the final report or design submittal to present a project's findings or design increases the risk of abortive and repeated work, lack of consensus, and potentially project schedule and budget over-run.

QUALITY MANAGEMENT IN DESIGN PHASE



CONSTRUCTION QUALITY MANAGEMENT

GSE Construction considers QA/QC to be one of the primary responsibilities of our management team. Behzad Nazari will serve as the Construction Quality Manager (CQM) with responsibility for development of the project-specific Construction Quality Plan (CQP). Our construction management team will work in concert with the City of Napa's representatives to develop and implement policies and procedures that will include the appropriate level of checks and balances to ensure quality throughout the project. Our onsite Superintendent will assume the main responsibility for the implementation of the CQP with regular review and oversight by the CQM. These two individuals comprise the core of GSE's QA/QC team and they are responsible for the following activities in order to ensure that the QCP is successful;

- Independent review, inspection and testing of the work to ensure that the quality of work complies with the requirements of the contract documents and the QCP.
- Attend post award conference, design meetings, QC planning meetings, and special coordination meetings.
- Interact directly with City of Napa representatives regarding the effectiveness and capability of the quality control organization.
- Monitor the adherence to procedures for submittal reviews and RFIs including turnaround times.
- Manage and coordinate the three phases (Preparatory, Initial and Follow-Up) of control and documentation required by the QCP.
- Review status of record drawing updates on a regular basis to ensure that they are being maintained.
- Review daily inspector reports and compile a monthly QA/QC status report throughout the construction phase.
- Supervise construction inspection activities.
- Coordinate documentation control efforts.
- Maintain authority to stop any portion of the work due to less-than-quality performance.
- Coordinate off-site inspection of fabricator and supplier products.
- Oversee independent testing and inspection firms, such as soils, concrete welding and coatings review and submit test reports.
- Verify that appropriate sign-offs and approvals have been obtained
- Ensure that project close-out activities have been accomplished.
- Report to the Superintendent and Project Manager any work that does not comply with the CQP or contract documents.
- Develop, track and reconcile punch lists to ensure compliance with the CQP and contract documents.

G

PROJECT SCHEDULE

The GSE Construction / Coleman Engineering team has the available resources to complete this important design build project well within the time schedule required by the City. We are looking forward to providing quality design engineering services in an expeditious and professional manner so that subsequent construction can move forward quickly and seamlessly. Our aim is to construct, on schedule and within budget, quality facilities that are easy to operate and maintain.

We have developed a preliminary project schedule that is shown on the following pages. The schedule considers the key City milestones and deadlines:

- City Council approval and Contract award: June 18, 2019
- Contract Final Completion: October 31, 2020

Our schedule includes tasks that are based on, and expanded from, the Scope of Work and Project Technical Requirements detailed in Attachment E of the RFP. For the design phase, we have included for three design submittals before completion of approved construction documents: at a 30% design level of completion (with the Basis of Design Report); and at 60% and 90% completion stages. Time for City review of the submittals is incorporated into the schedule. We have also assumed that design must be completed and approved by the City before a Notice-to-Proceed for construction is issued.

The schedule is realistic and not overly aggressive. It meets and exceeds project deadlines, with anticipated Substantial Completion in early May 2020 and Final Completion in mid- July 2020.

This is approximately 3½ months ahead of the City's deadline.

We will achieve this schedule through a rapid start to a concentrated design period that in turn allows use of part of the 2019 construction season. Depending on the onset of winter weather, we intend to make all structures closed and watertight as soon as possible. This will ensure a limited, if at all, winter break and that we can continue equipment field testing and process commissioning. This will allow the two pump stations to be put back into service in the midsummer of 2020.

There could be some opportunities to shorten this schedule further by allowing some construction to commence before approval of the full design. Such an initial phase could include site preparation and trenching for external utilities, perhaps also pump station foundation construction. We would investigate these possibilities with the City prior to the issue of the project Notice-to-Proceed in early July 2019.

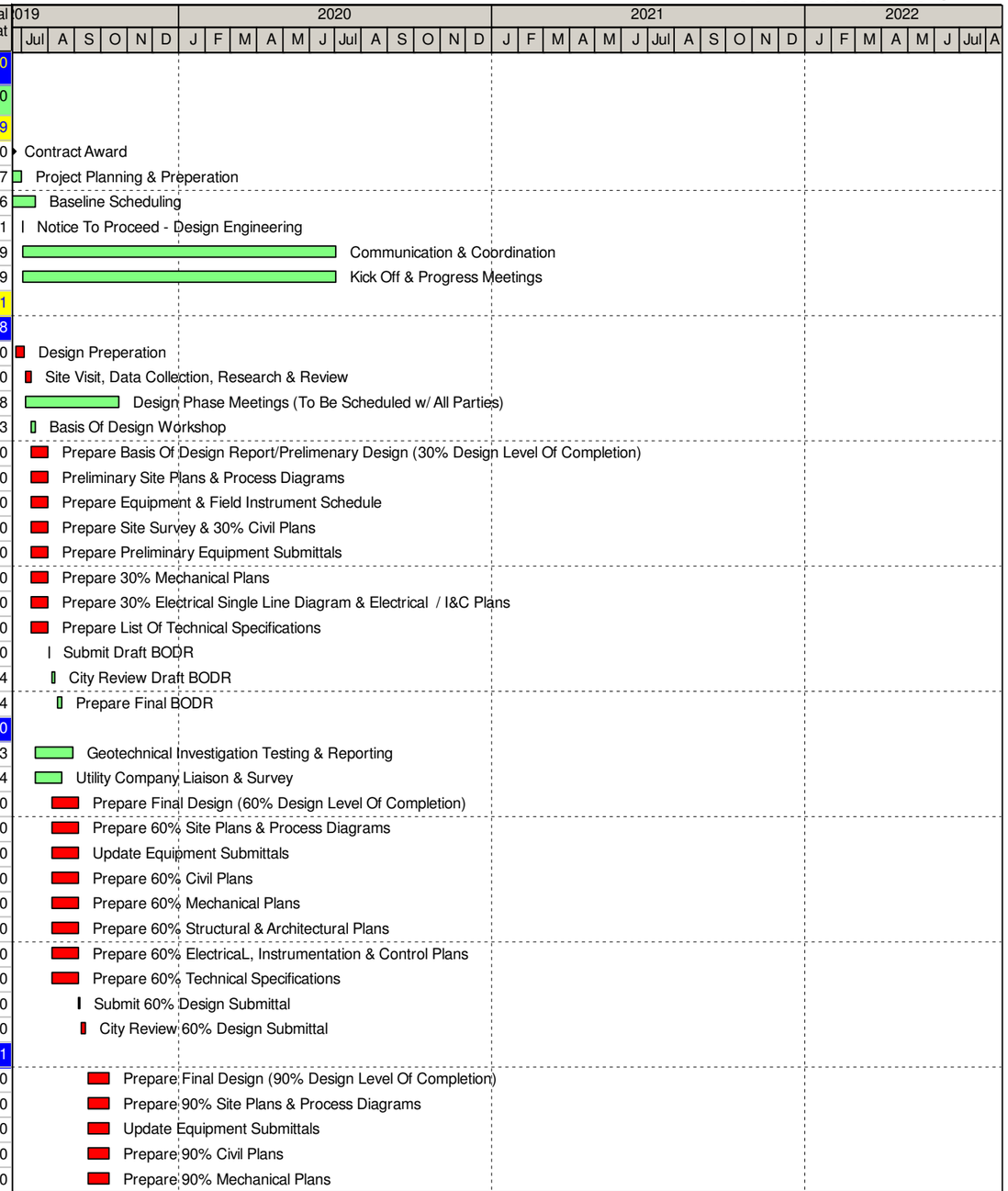
In summary, we anticipate the following general milestones:

- Contract award:
  June 18, 2019
- Notice-to-Proceed (Design engineering):
  July 2, 2019
- Basis of Design Report and 30% design submittal:
  August 2, 2019
- 60% design submittal:
  September 6, 2019
- 95% design submittal:
  October 11, 2019
- Final Design Submittal:
  November 8, 2019
- City approval of design documents:
  November 15, 2019
- Notice-to-Proceed (Construction):
  November 15, 2019
- Construction Substantial Completion:
  May 22, 2020
- Commissioning:
  June 2020 –July 2020
- Contract Final Completion and Acceptance:
  July 17, 2020

PROJECT SCHEDULE

ATTACHMENT 5

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
Total		273	273	18-Jun-19	17-Jul-20	0
Napa DB-R1 City Of Napa Hillcrest & Silverado Pump Stations Re		273	273	18-Jun-19	17-Jul-20	0
Napa DB-R1.Task 1 Project Management & Meetings		262	262	18-Jun-19	01-Jul-20	9
PM-1000	Contract Award	0	0	18-Jun-19*		0
PM-1020	Project Planning & Preperation	9	9	19-Jun-19	01-Jul-19	7
PM-1040	Baseline Scheduling	20	20	19-Jun-19	17-Jul-19	96
PM-1010	Notice To Proceed - Design Engineering	1	1	02-Jul-19	02-Jul-19	1
PM-1030	Communication & Coordination	251	251	03-Jul-19	01-Jul-20	9
PM-1050	Kick Off & Progress Meetings	251	251	03-Jul-19	01-Jul-20	9
Napa DB-R1.1 Design Preparation		102	102	25-Jun-19	15-Nov-19	11
Napa DB-R1.1.Task 2 Design Preparation Through 30%		84	84	25-Jun-19	22-Oct-19	28
DP1-1000	Design Preperation	7	7	25-Jun-19	03-Jul-19	0
DP1-1010	Site Visit, Data Collection, Research & Review	5	5	05-Jul-19	11-Jul-19	0
DP1-1020	Design Phase Meetings (To Be Scheduled w/ All Parties)	77	77	05-Jul-19	22-Oct-19	28
DP1-1120	Basis Of Design Workshop	3	3	12-Jul-19	16-Jul-19	3
DP1-1030	Prepare Basis Of Design Report/Prelimenary Design (30% Design	15	15	12-Jul-19	01-Aug-19	0
DP1-1040	Preliminary Site Plans & Process Diagrams	15	15	12-Jul-19	01-Aug-19	0
DP1-1050	Prepare Equipment & Field Instrument Schedule	15	15	12-Jul-19	01-Aug-19	0
DP1-1060	Prepare Site Survey & 30% Civil Plans	15	15	12-Jul-19	01-Aug-19	0
DP1-1080	Prepare Preliminary Equipment Submittals	15	15	12-Jul-19	01-Aug-19	0
DP1-1090	Prepare 30% Mechanical Plans	15	15	12-Jul-19	01-Aug-19	0
DP1-1100	Prepare 30% Electrical Single Line Diagram & Electrical / I&C Plar	15	15	12-Jul-19	01-Aug-19	0
DP1-1110	Prepare List Of Technical Specifications	15	15	12-Jul-19	01-Aug-19	0
DP1-1130	Submit Draft BODR	1	1	02-Aug-19	02-Aug-19	0
DP1-1140	City Review Draft BODR	5	5	05-Aug-19	09-Aug-19	14
DP1-1150	Prepare Final BODR	5	5	12-Aug-19	16-Aug-19	14
Napa DB-R1.1.1 Design Preparation Through 60%		42	42	17-Jul-19	13-Sep-19	0
DP2-1120	Geotechnical Investigation Testing & Reporting	33	33	17-Jul-19	30-Aug-19	3
DP2-1130	Utility Company Liaison & Survey	23	23	17-Jul-19	16-Aug-19	14
DP2-1140	Prepare Final Design (60% Design Level Of Completion)	23	23	05-Aug-19	05-Sep-19	0
DP2-1170	Prepare 60% Site Plans & Process Diagrams	23	23	05-Aug-19	05-Sep-19	0
DP2-1180	Update Equipment Submittals	23	23	05-Aug-19	05-Sep-19	0
DP2-1190	Prepare 60% Civil Plans	23	23	05-Aug-19	05-Sep-19	0
DP2-1200	Prepare 60% Mechanical Plans	23	23	05-Aug-19	05-Sep-19	0
DP2-1210	Prepare 60% Structural & Architectural Plans	23	23	05-Aug-19	05-Sep-19	0
DP2-1220	Prepare 60% ElectricaL, Instrumentation & Control Plans	23	23	05-Aug-19	05-Sep-19	0
DP2-1230	Prepare 60% Technical Specifications	23	23	05-Aug-19	05-Sep-19	0
DP2-1150	Submit 60% Design Submittal	1	1	06-Sep-19	06-Sep-19	0
DP2-1160	City Review 60% Design Submittal	5	5	09-Sep-19	13-Sep-19	0
Napa DB-R1.1.2 Design Preparation Final Design		45	45	16-Sep-19	15-Nov-19	11
DP3-1000	Prepare Final Design (90% Design Level Of Completion)	19	19	16-Sep-19	10-Oct-19	0
DP3-1010	Prepare 90% Site Plans & Process Diagrams	19	19	16-Sep-19	10-Oct-19	0
DP3-1020	Update Equipment Submittals	19	19	16-Sep-19	10-Oct-19	0
DP3-1030	Prepare 90% Civil Plans	19	19	16-Sep-19	10-Oct-19	0
DP3-1040	Prepare 90% Mechanical Plans	19	19	16-Sep-19	10-Oct-19	0



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

City Of Napa Hillcrest Silverado Pump Stations Replacemant Project

TASK filter: All Activities

Status Date: 18-Jun-19

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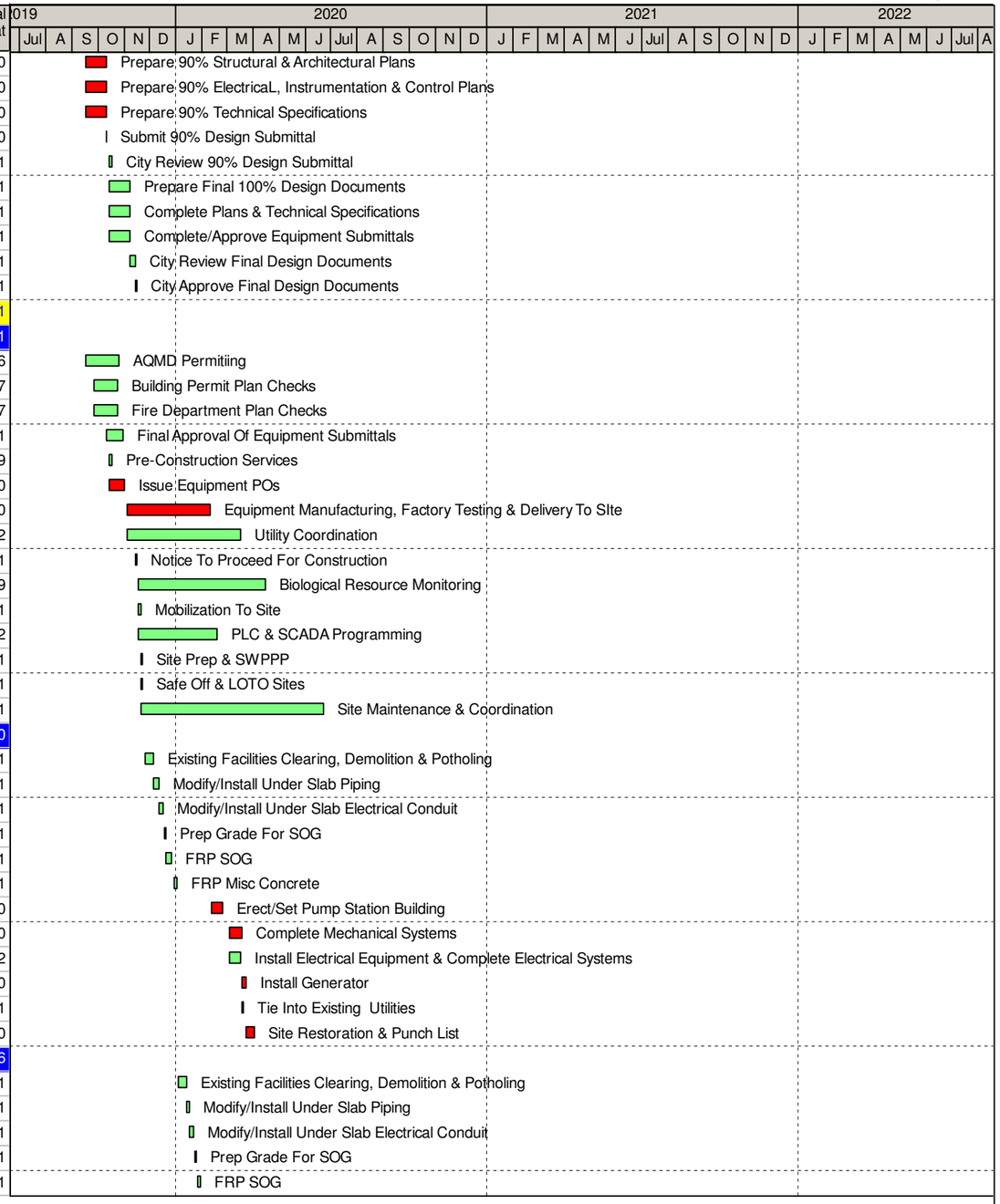
GSE CONSTRUCTION

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
DP3-1050	Prepare 90% Structural & Architectural Plans	19	19	16-Sep-19	10-Oct-19	0
DP3-1060	Prepare 90% ElectricaL, Instrumentation & Control Plans	19	19	16-Sep-19	10-Oct-19	0
DP3-1070	Prepare 90% Technical Specifications	19	19	16-Sep-19	10-Oct-19	0
DP3-1080	Submit 90% Design Submittal	1	1	11-Oct-19	11-Oct-19	0
DP3-1090	City Review 90% Design Submittal	5	5	14-Oct-19	18-Oct-19	11
DP3-1100	Prepare Final 100% Design Documents	19	19	14-Oct-19	07-Nov-19	11
DP3-1110	Complete Plans & Technical Specifications	19	19	14-Oct-19	07-Nov-19	11
DP3-1120	Complete/Approve Equipment Submittals	19	19	14-Oct-19	07-Nov-19	11
DP3-1130	City Review Final Design Documents	5	5	08-Nov-19	14-Nov-19	11
DP3-1140	City Approve Final Design Documents	1	1	15-Nov-19	15-Nov-19	11
Napa DB-R1.Task 3 Construction		193	193	16-Sep-19	22-Jun-20	11
Napa DB-R1.Task 3.1 Preconstruction & Construction Services		193	193	16-Sep-19	22-Jun-20	11
PC-1050	AQMD Permitiing	30	30	16-Sep-19	25-Oct-19	26
PC-1030	Building Permit Plan Checks	20	20	27-Sep-19	24-Oct-19	27
PC-1040	Fire Department Plan Checks	20	20	27-Sep-19	24-Oct-19	27
PC-1070	Final Approval Of Equipment Submittals	15	15	11-Oct-19	31-Oct-19	1
PC-1010	Pre-Construction Services	5	5	14-Oct-19	18-Oct-19	79
PC-1060	Issue Equipment POs	15	15	14-Oct-19	01-Nov-19	0
PC-1080	Equipment Manufacturing, Factory Testing & Delivery To SIte	65	65	04-Nov-19	10-Feb-20	0
PC-1120	Utility Coordination	90	90	04-Nov-19	17-Mar-20	2
PC-1000	Notice To Proceed For Construction	1	1	15-Nov-19	15-Nov-19	11
PC-1020	Biological Resource Monitoring	100	100	18-Nov-19	14-Apr-20	59
PC-1090	Mobilization To Site	3	3	18-Nov-19	20-Nov-19	11
PC-1140	PLC & SCADA Programming	60	60	18-Nov-19	18-Feb-20	12
PC-1100	Site Prep & SWPPP	2	2	21-Nov-19	22-Nov-19	21
PC-1110	Safe Off & LOTO Sites	2	2	21-Nov-19	22-Nov-19	21
PC-1130	Site Maintenance & Coordination	145	145	21-Nov-19	22-Jun-20	11
Napa DB-R1.Task 3.3 Hillcrest Pump Station		87	87	25-Nov-19	02-Apr-20	0
HC -1000	Existing Facilities Clearing, Demolition & Potholing	7	7	25-Nov-19	05-Dec-19	21
HC -1010	Modify/Install Under Slab Piping	4	4	06-Dec-19	11-Dec-19	21
HC -1020	Modify/Install Under Slab Electrical Conduit	4	4	12-Dec-19	17-Dec-19	21
HC -1030	Prep Grade For SOG	2	2	18-Dec-19	19-Dec-19	21
HC -1040	FRP SOG	4	4	20-Dec-19	27-Dec-19	21
HC -1050	FRP Misc Concrete	3	3	30-Dec-19	02-Jan-20	21
HC -1060	Erect/Set Pump Station Building	10	10	11-Feb-20	25-Feb-20	0
HC -1070	Complete Mechanical Systems	11	11	04-Mar-20	18-Mar-20	0
HC -1080	Install Electrical Equipment & Complete Electrical Systems	10	10	04-Mar-20	17-Mar-20	2
HC -1100	Install Generator	3	3	19-Mar-20	23-Mar-20	0
HC -1110	Tie Into Existing Utilities	2	2	19-Mar-20	20-Mar-20	1
HC -1090	Site Restoration & Punch List	8	8	24-Mar-20	02-Apr-20	0
Napa DB-R1.Task 3.2 Silverado Pump Station		99	99	03-Jan-20	22-May-20	6
SL-1010	Existing Facilities Clearing, Demolition & Potholing	7	7	03-Jan-20	13-Jan-20	21
SL-1020	Modify/Install Under Slab Piping	3	3	14-Jan-20	16-Jan-20	21
SL-1030	Modify/Install Under Slab Electrical Conduit	3	3	17-Jan-20	22-Jan-20	21
SL-1040	Prep Grade For SOG	2	2	23-Jan-20	24-Jan-20	21
SL-1050	FRP SOG	4	4	27-Jan-20	30-Jan-20	21



Remaining Level of Effort
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City Of Napa Hillcrest Silverado Pump Stations Replacemant Project

TASK filter: All Activities

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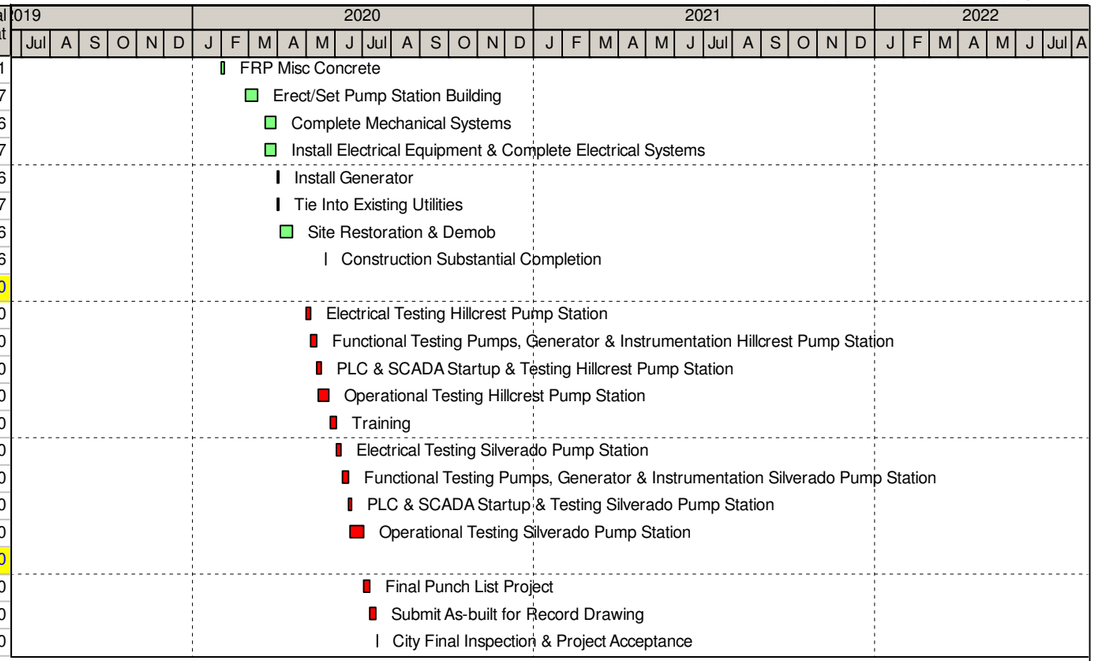
GSE CONSTRUCTION

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
SL-1060	FRP Misc Concrete	3	3	31-Jan-20	04-Feb-20	21
SL-1070	Erect/Set Pump Station Building	10	10	26-Feb-20	10-Mar-20	7
SL-1080	Complete Mechanical Systems	8	8	19-Mar-20	30-Mar-20	6
SL-1090	Install Electrical Equipment & Complete Electrical Systems	8	8	19-Mar-20	30-Mar-20	7
SL-1100	Install Generator	3	3	31-Mar-20	02-Apr-20	6
SL-1110	Tie Into Existing Utilities	2	2	31-Mar-20	01-Apr-20	7
SL-1120	Site Restoration & Demob	10	10	03-Apr-20	16-Apr-20	6
SL-1130	Construction Substantial Completion	1	1	22-May-20	22-May-20	6
Napa DB-R1.Task 4 Commissioning		43	43	01-May-20	01-Jul-20	0
CM-1000	Electrical Testing Hillcrest Pump Station	4	4	01-May-20	06-May-20	0
CM-1010	Functional Testing Pumps, Generator & Instrumentation Hillcrest P	4	4	07-May-20	12-May-20	0
CM-1020	PLC & SCADA Startup & Testing Hillcrest Pump Station	4	4	13-May-20	18-May-20	0
CM-1030	Operational Testing Hillcrest Pump Station	7	7	15-May-20	26-May-20	0
CM-1080	Training	5	5	27-May-20	02-Jun-20	0
CM-1040	Electrical Testing Silverado Pump Station	4	4	03-Jun-20	08-Jun-20	0
CM-1050	Functional Testing Pumps, Generator & Instrumentation Silverado	5	5	09-Jun-20	15-Jun-20	0
CM-1060	PLC & SCADA Startup & Testing Silverado Pump Station	4	4	16-Jun-20	19-Jun-20	0
CM-1070	Operational Testing Silverado Pump Station	10	10	18-Jun-20	01-Jul-20	0
Napa DB-R1.Task 5 Close Out		11	11	02-Jul-20	17-Jul-20	0
CO-1000	Final Punch List Project	4	4	02-Jul-20	08-Jul-20	0
CO-1010	Submit As-built for Record Drawing	5	5	09-Jul-20	15-Jul-20	0
CO-1020	City Final Inspection & Project Acceptance	2	2	16-Jul-20	17-Jul-20	0



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City Of Napa Hillcrest Silverado Pump Stations Replacemant Project

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GSE CONSTRUCTION

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H

EXCEPTIONS TO SCOPE OF WORK

GSE Construction, Inc does not take exception to the Scope of Work provided in Attachment E of the Request for Proposals. However, we propose the following clarifications, modifications and additions to the Scope of Work to expand upon the description of the services to be provided under the project Agreement:

- **Task 1.4** - Rename the title of Task 1.4 as "Kick-off and progress meetings".
- **Task 2.2** - Rename the title of Task 2.2 as "Site visit, data collection and review, research".
- **Task 2.4** – Rename the title of Task 2.4 as "Prepare Basis of Design Report / Preliminary Design (30% Design Level of Completion)". Add the following sub-tasks to incorporate design criteria and the individual elements to be included within the preparation of the Basis of Design Report and the 30% Preliminary Design submittal:
  - 2.4.1 Preliminary site plans and process diagrams.
  - 2.4.2 Prepare equipment and field instrument schedule.
  - 2.4.3 Prepare site survey and 30% civil plans.
  - 2.4.4 Prepare preliminary equipment submittals.
  - 2.4.5 Prepare 30% mechanical plans.
  - 2.4.6 Prepare 30% electrical single line diagram and electrical / I&C plans.
  - 2.4.7 Prepare draft of technical specifications.
  - 2.4.8 Prepare Final BODR.
- **Task 2.5** - Rename the title of Task 2.5 as "Design phase meetings".
- **Task 2.6** - Rename the title of Task 2.6 as "Geotechnical investigation, testing and report".
- **Task 2.7** - Rename the title of Task 2.7 as "Utility company liaison and survey".
- **Task 2.8** - Rename the title of Task 2.8 as "Final Design (60% Design Level of Completion)". Add the following sub-tasks to detail the individual elements to be included within the preparation of the 60% Final Design submittal:
  - 2.8.1 60% site plans and process diagrams.
  - 2.8.2 Update equipment submittals.
  - 2.8.3 Prepare 60% civil plans.
  - 2.8.4 Prepare 60% mechanical plans.
  - 2.8.5 Prepare 60% structural and architectural plans.
  - 2.8.6 Prepare 60% electrical / I&C plans.
  - 2.8.7 Prepare 60% technical specifications.
- **Task 2.9** - Rename the title of Task 2.9 as "Final Design (90% Design Level of Completion)". Add the following sub-tasks to detail the individual elements to be included within the preparation of the 90% Final Design submittal:
  - 2.9.1 90% site plans and process diagrams.
  - 2.9.2 Update equipment submittals.
  - 2.9.3 Prepare 90% civil plans.
  - 2.9.4 Prepare 90% mechanical plans.
  - 2.9.5 Prepare 90% structural and architectural plans.
  - 2.9.6 Prepare 90% electrical / I&C plans.
  - 2.9.7 Prepare 90% technical specifications.
- **Task 2.10** - Rename the title of Task 2.10 as "Final Design Documents". Add the following sub-tasks to detail the individual elements to be included within the preparation of the Final Design Documents submittal:
  - 2.10.1 Complete plans and technical specifications.
  - 2.10.2 Complete equipment submittals.
- **Task 2.13** – Add new Task 2.13 for permitting. Add the following sub tasks to Task 2.13:
  - 2.13.1 Building Department plan checks.
  - 2.13.2 Fire Department plan checks.
- **Task 3.1** – Add new Task 3.1 as "Issue equipment purchase orders"
- **Task 3.2** - Add new Task 3.2 as "Equipment manufacture, off-site testing and delivery to site".
- **Task 3.3** - Renumbered as Task 3.3 from Task 3.1 in the RFP.
- **Task 3.4** - Renumbered as Task 3.4 from Task 3.2 in the RFP. Rename Task 3.4 as "Contractor / subcontractor management".
- **Task 3.5** - Renumbered as Task 3.5 from Task 3.3 in the RFP. Rename Task 3.5 as "Facility demolition".

- **Task 3.6** - Renumbered as Task 3.6 from Task 3.4 in the RFP. Rename Task 3.6 as "Facility reconstruction". Add the following sub tasks to Task 3.6:
  - 3.6.1 Pump station foundations.
  - 3.6.2 Pump station superstructures.
  - 3.6.3 Mechanical infrastructure.
  - 3.6.4 Process and instrumentation
  - 3.6.5 Electrical infrastructure
  - 3.6.6 Site restoration.
- **Task 3.7** - Renumbered as Task 3.7 from Task 3.5 in the RFP.
- **Task 3.8** - Renumbered as Task 3.8 from Task 3.6 in the RFP.
- **Task 3.9** - Renumbered as Task 3.9 from Task 3.7 in the RFP. Rename Task 3.9 as "Demobilization and site clearance".
- **Task 3.10** – Renumbered as Task 3.10 from Task 3.8 in the RFP.
- **Task 3.11** – Add new task for "Prepare construction punch list".
- **Task 4.1** - Rename Task 4.1 as "Equipment field testing".
- **Task 4.2** - Organize the task scope under the following sub-tasks:
  - 4.2.1 Gates and valves.
  - 4.2.2 Pumps.
  - 4.2.3 Electrical and instrumentation.
- **Task 4.3** - Rename Task 4.3 as " Facility performance testing"
- **Task 4.4** - Add new task for "Complete punch list construction items".
- **Task 5.1** - Rename Task 5.1 as "Record drawings and operation and maintenance manuals"

TECHNICAL CLARIFICATIONS

» No allowances have been included for tree removal and/or replacement. If during the design & permitting process it becomes apparent this will be required, then a design and cost proposal will be developed to perform this supplemental work.

» It has been assumed that no additional paved parking areas or turn arounds will required for either the Hillcrest or Silverado pump stations. This assumption will be revisited in the design phase.

» For the basis of this proposal, we have assumed tie-point of the water and drain lines within 5' of the boundary limits of the pumping stations.

» For the basis of this proposal, we have assumed de-chlorinated testing/disinfection water can be disposed of at the nearest sanitary sewer manhole to the pump stations. Confirmation of this assumption will be made during the design phase of the project and documented in the Disinfection & Testing plan.

» For the basis of this proposal, we have assumed that any communications cabling & signal wire within the boundary limits of the pumping stations can be reused with minor modifications. If during the design process it becomes apparent new cabling runs will be required between pump stations and/or other facilities (e.g, Milliken treatment plant), then a design and cost proposal will be developed to perform this supplemental work.

» For the basis of this proposal, we have assumed that the existing PG&E transformers at the Hillcrest and Silverado sites remain operational and serve as the tie-point for electrical power. Pricing includes new electrical power feeder runs from the transformers to the new pump stations per PG&E standards.

I

EXCEPTIONS TO TERMS OF AGREEMENT

In accordance with the requirements of the Request for Proposals, GSE Construction, Inc. has reviewed the Design Build Institute of America (DBIA) Document No. 535: Standard Form of General Conditions of Contract Between Owner and Design-Builder, and the City of Napa's Supplemental General Conditions and Public Works Requirements for the contract between the City of Napa and the Design-Builder for the Hillcrest and Silverado Highlands Pump Stations Replacement Project. GSE Construction, Inc. has the following exceptions to the sample contract provided and proposes the following amendments for the City's consideration. **We have also provided an explanation for the proposed modifications highlighted in blue.**

ARTICLE 4 – Hazardous Conditions and Differing Site Conditions

4.2—Differing Site Conditions

General Condition 4.2.1 is hereby deleted and replaced in its entirety as follows:

"4.2.1 Concealed or latent physical conditions or subsurface conditions at the Site that (i) materially differ from the conditions indicated in the Agreement or any geotechnical report the Design-Builder has reviewed or (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as inherent in the Work are collectively referred to herein as "Differing Site Conditions." If Design-Builder encounters a Differing Site Condition which jeopardizes the completion of the Work, Design-Builder and Owner shall meet to reach a mutually acceptable resolution. ~~**For all other Differing Site Conditions, Design-Builder accepts responsibility for all costs and efforts to resolve."**~~

ARTICLE 7—Indemnification

Articles 7.1, 7.2, 7.3, 7.4 and 7.5 are hereby deleted in their entirety and replaced as follows:

"Owner and each of its officers, employees, consultants and agents including, but not limited to, the Public Works Director , shall not be liable or accountable in any manner for loss or damage that may happen to any part of the Work; loss or damage to materials or other things used or employed in performing the Work; injury, sickness, disease, emotional injury, or death of any person; or damage to property resulting from any cause whatsoever **(hereinafter " Claim or Damage")** except ~~**their**~~ **to the extent the Claim or Damage arises from the sole** negligence, willful misconduct or active negligence **of an indemnified party,** attributable to performance or character of the Work, **or to the extent of defects in designs (if any) provided to Design-Builder,** and **subject to such exceptions,** Design-Builder releases all of the foregoing persons and entities from any and all such claims. [See Comment 1 below]

To the furthest extent permitted by law (including without limitation California Civil Code Section 2782), Design-Builder shall ~~**assume defense of**~~, release, and indemnify and hold harmless, Owner and each of its officers, employees, ~~**consultants,**~~ and agents including, but not limited to, the Public Works Director (but excluding ~~**agents who are any**~~ design professionals **who are not officers or direct employees of Owner),** from claims, suits, actions, losses and liability of every kind, nature and description, including but not limited to claims, etc., and fines of regulatory agencies or relating to claims, etc., for copyright and/or infringement patent, and attorney's fees and consultant's fees, directly or indirectly, from any cause whatsoever, directly or indirectly, arising out of, connected with, or resulting from performance of the Work, failure to perform the Work, or condition of the Work which is caused in whole or in part by any act or omission of Design-Builder, Subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether it is caused in part by the negligence of Owner or by any person or entity required to be indemnified hereunder, or resulting from allegations of: ***[See Comment 2 below]***

a. The breach or alleged breach of, or failure or alleged failure to perform, the Work by the Design-Builder or any subcontractor;
b. Design-Builder's failure or alleged failure to comply with any applicable law;
c. Design-Builder's negligent use of Owner's property or any negligent activities or Work performed hereunder by Design-Builder;
d. The negligent act, omission, misconduct, or fault, or the alleged negligent act, omission, misconduct or fault of Design-Builder or any subcontractor;
e. Any and all stop payment notices filed in connection with the Work, including all expenses and attorneys' fees incurred by Owner in discharging any stop payment notice; **provided, however, that the obligation with respect to stop payment notices shall not apply to the extent that the stop payment notice arose from Owner's breach of its obligation to make payment, issue change orders, or other material obligations.**
f. Any failure to comply with the requirements of General Condition 4.1 Hazardous Conditions.

With respect to third-party claims against Design-Builder, Design-Builder waives any and all rights to any type of express or implied indemnity against Owner and each of its officers, employees, consultants, and agents including, but not limited to Owner, the Public Works Director, **if and to the extent that Design-Builder is required to indemnify such persons.** ***[See Comment 3 below]***

Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Design-Builder, its Subcontractors of any tier, or the officers or agents of any of them.

To the furthest extent permitted by law (including, without limitation, Civil Code Section 2782), the indemnities, releases of liability and limitations of liability, claims, procedures, and limitations of remedy expressed throughout Contract Documents shall apply even in the event of breach of contract, **partial or concurrent** negligence (active or passive), fault or strict liability of the party(ies) indemnified, released, or limited in liability, and shall survive the termination, rescission, breach, abandonment, or completion of the Work or the terms of the Contract Documents. ***[See Comment 4 below]***

Design-Builder's obligation to defend and indemnify shall not be excused because of Design-Builder's inability to evaluate liability or because Design-Builder evaluates liability and determines that Design-Builder is not liable to

the claimant. Design-Builder will respond within 30 days to the tender of any claim for defense and indemnity by the Owner, unless this time has been extended by the Owner If Design-Builder fails to accept or reject a tender of defense and indemnity within 30 days, in addition to any other remedy authorized by law, so much of the money due Design-Builder under and by virtue of the contract as shall reasonably be considered necessary by Owner, may be retained by Owner until disposition has been made of the claim or suit for damages or until Design-Builder accepts or rejects the tender of defense, whichever occurs first. **In the event that Design-Builder provides a defense upon receiving a tender, it may later seek reasonable and equitable reallocation or reimbursement of defense costs to the extent that under the relevant facts, the indemnified party was not entitled to the defense under this provision.**

The indemnities in the Contract Documents shall not apply to any indemnified party to the extent of its sole negligence or willful misconduct; nor shall they apply to Owner or other indemnified party to the extent of its active negligence **or defects in designs furnished to Design-Builder by any indemnified party."**

Comments on Proposed Modifications to Article 7

1. *California Civil Code Section 2782 – see below – uses the word "arises", and also has a required exception for defects in design. To the extent that the owner's contract documents include criteria, parameters, etc., these would be designs.*

2. *This modification clarifies that owner's design professionals are not indemnitees. Design professionals carry their own errors and omissions insurance. Unfortunately, it has become common when owners sue their design professionals for malpractice for the design professionals to cross-complaint against the general contractor by alleging they are "agents" and entitled to a defense under a written indemnity provision, even though the owner's claims are based on the design professionals' own exclusive negligence.*

3. *This suggested modification is to clarify that the restriction applies only in instances where the Design-Builder owes a duty of indemnity. Otherwise, this clause would preclude the Design-Builder from receiving indemnity where the Owner is solely or willfully at fault, for example.*

4. *This clarification is required to avoid the clause violating California Civil Code Section 2782(a) and (b)(2).*

ARTICLE 11 – Stop Work and Termination for Cause

In Clause 11.2.3, delete the words "equipment, scaffolds, tools" from the third line of the first paragraph. Insert the word "reasonable" before the word "cost" on the tenth line of the first paragraph.

J

COST PROPOSAL SUBMISSION FORMS

City of Napa Water Division (Napa, CA)

COST PROPOSAL WORKSHEET

To be submitted with the proposal

DESIGN BUILD
HILLCREST AND SILVERADO PUMP STATIONS REPLACEMENT PROJECT
NAPA, CALIFORNIA

Cost Proposal From:

GSE Construction Company Inc.
Proposer Name

Print Name of Authorized Proposer Representative

Signature of Authorized Proposer Representative

Date

Each item in the following cost proposal includes the complete management, analysis, permitting, design, construction, inspection, testing, documentation and other required expenses other than bonds and insurance of all components delivered to the City in a fully operational state as described in the RFP.

Alternative A		
Item	**Description**	**Cost Proposal**
	Total Alternative A	**SEE COST SUBMITTAL**

City of Napa Water Division (Napa, CA)

Alternative B		
	Total Alternative B	**SEE COST SUBMITTAL**

Other	
Bonds and Insurance (as percent of subtotal of construction costs)	

NOTE: A corresponding itemized construction cost proposal organized by the Construction Institute (CSI) MasterFormat Division titles listed below shall be submitted for each pump station.

Itemize all costs associated with construction costs for the pump stations within the following CSI Division titles:

Division 1 – General Requirements
Division 2 – Site Work and Demolition
Division 3 – Concrete
Division 9 – Finishes
Division 10 – Specialties
Division 11 – Equipment
Division 13 – Special Construction
Division 15 – Mechanical
Division 16 - Electrical

Proposers may include additional or more detailed cost information; however, the Cost Proposal Worksheet must be submitted.

NOTE: GSE Construction's ability to successfully deliver projects on budget with limited change orders is detailed in Section C.

K

RECOMMENDED VALUE MODIFICATIONS

As part of value engineering investigations during this proposal stage, we have evaluated potential alternatives using pre-fabricated buildings and skid-mounted pre-packaged pump stations. Both alternatives offer advantages in terms of cost and schedule. The following plans show general arrangement layouts and building elevations for both the Hillcrest and the Silverado Pump Stations.

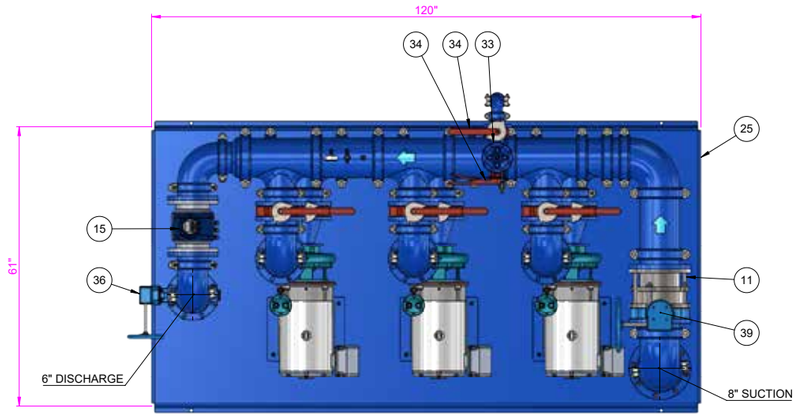
The proposed value modification is based on the manufacturer's standard offering however it can be adjusted to meet project specific requirements. The selection of a packaged system is not expected to lengthen the project duration provided the decision to use a pre-engineered system is made at the 30% design milestone.

Based on the initial submitted offering, the benefits to the project would be as follows;

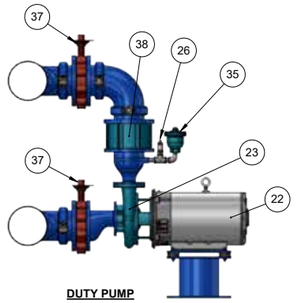
On-site Construction Duration reduced: 8 weeks

Total Project Cost Reduced (Deduct): $848,900

We can review the potential for implementing these alternatives with the City at the start of the project.



PLAN VIEW

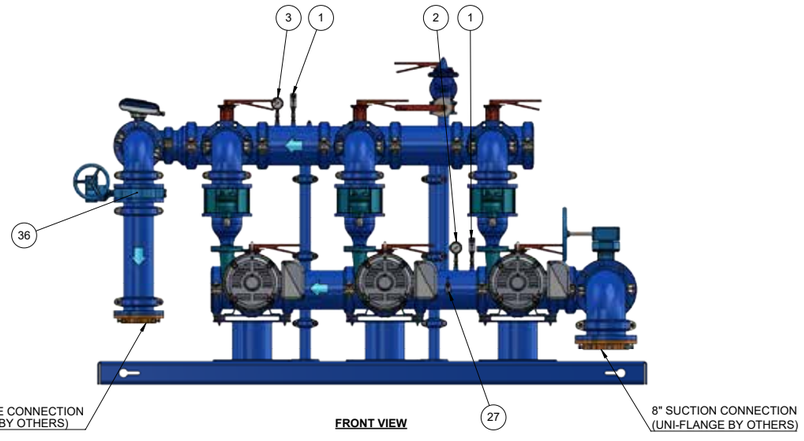


DUTY PUMP

DESIGN SPECIFICATIONS

Design Flow Rate:	425 GPM @ 85 PSI Boost
Duty Pump Details:	40 HP/Pump | 500 GPM @ 245 TDH
Minimum Power:	480 Volt / 3 Phase
Model #	CB#P3C040X00425-085XXXB483IAS-8

ITEM NO.	DESCRIPTION	Size	QTY.
1	*-14.5 - 145PSI PRESSURE TRANSMITTER WITH DISPLAY *YELLOW CORD *1/4" BRASS BALL VALVE	1/4"	2
2	*100PSI NO SHOK PRESSURE GAUGE 2.5" *1/4" BRASS BALL VALVE	2-1/2"	1
3	*160PSI NO SHOK PRESSURE GAUGE 2.5" *1/4" BRASS BALL VALVE	2-1/2"	1
4	ATS	250A	1
5	BUILDING, PRE-FABRICATED CONCRETE	192" x 144"	1
6	BUILDING, PRE-FABRICATED CONCRETE	192" x 132"	1
7	Control Panel	36x24x08	1
8	CRANE, JIB	120"	1
9	DAY TANK	150 GAL	1
10	DEHUMIDIFIER		1
11	DISMANTLING JOINT	8"	1
12	DUPLEX OUTLET, GFCI, 120V, LIGHT SWITCH		1
13	DUPLEX OUTLET, GFCI PROTECTED, 120V		2
14	FLOOR DRAIN	6"	2
15	FLOW METER, 6" KROHNE, FLANGED NSF-61		1
16	GENERATOR	150 kW	1
17	HVAC UNIT,	3 Ton	1
18	LIGHT FIXTURE, EMERGENCY		1
19	LIGHT FIXTURE, EXTERNAL		1
20	LIGHTING PANEL	125 A	1
21	Main Distribution Panel	400A	1
22	Motor, 3600 RPM	40 HP	3
23	Pump, Centrifugal	21BF	3
24	RUBBER MATTING, WALL-TO-WALL		1
25	Skid, Bent	72x120	1
26	SWITCH, POINT LEVEL SENSOR, PNP, IFM, G1/2	1/2"	3
27	TAP, SAMPLING, LEAD FREE, CHROME PLATED, 3/4" MPT	3/4"	1
28	THERMOSTAT		1
29	TRANSFORMER	3kVA	1
30	UNIT HEATER	5kW	1
31	VFD DRIVE, ACS550	40 HP	2
32	VFD DRIVE, ACS550	50 HP	1
33	VALVE, PRESSURE RELIEF, 2" FLANGED, ANGLED	2"	1
34	VALVE, 2" BFV, NSF61, LUG, LEVER OP	2"	2
35	VALVE, 3/4" AIR RELIEF, VALMATIC	3/4"	3
36	VALVE, 6" BFV,NSF61, LUG, GEAR OP	6"	1
37	VALVE, 6" BFV, NSF61, LUG, LEVER OP	6"	6
38	VALVE, 6", WAFER CHECK, VALMATIC	6"	3
39	VALVE, 8" BFV,NSF61, LUG, GEAR OP	8"	1



FRONT VIEW

END VIEW

REV.	DESCRIPTION	DATE	APVD
	REVISIONS		

PRECISION PUMPING SYSTEMS
6515 BUSINESS WAY
BOISE, IDAHO 83716
208-323-5300
www.gopps.us

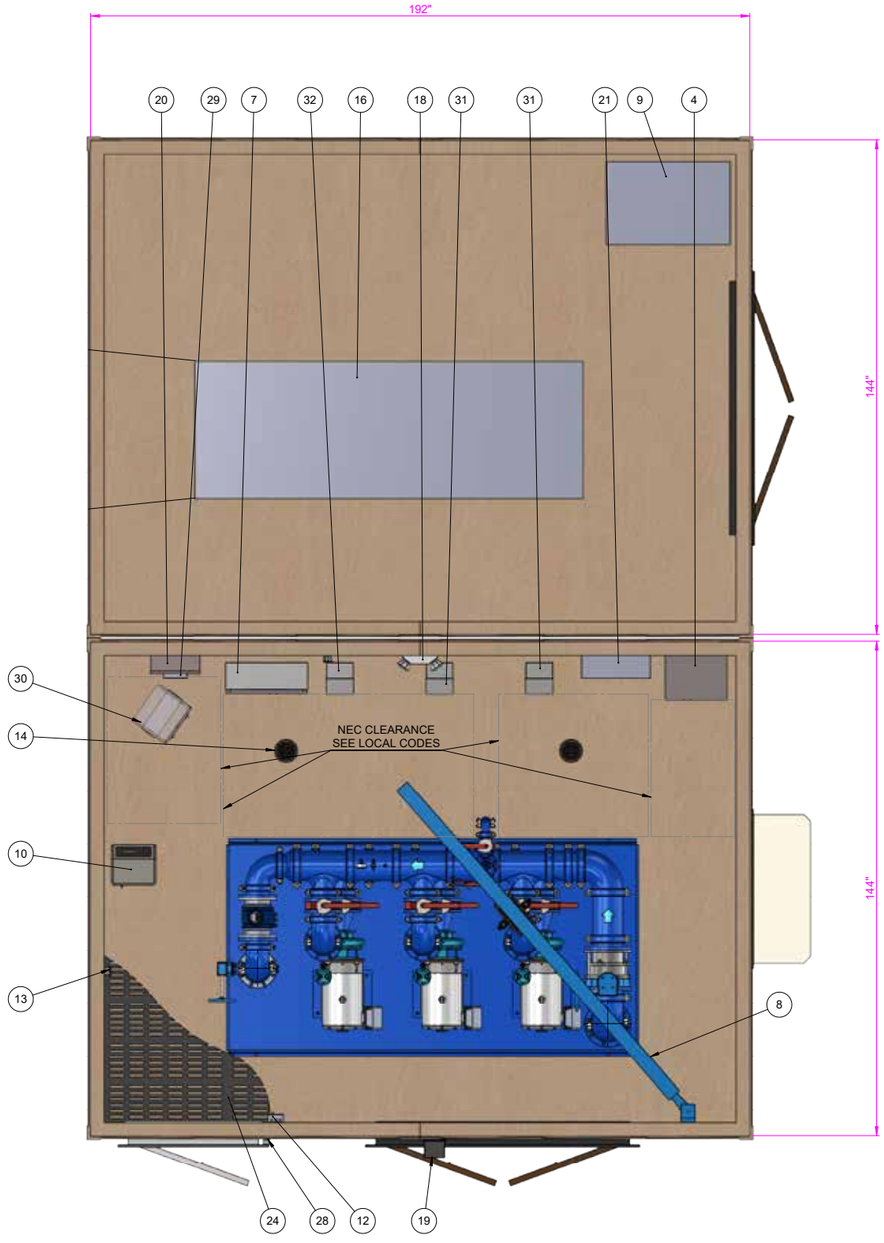
MATERIAL
Piping: STEEL A53
Skid: STEEL A36

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ± 1/8"
ONE PLACE DECIMAL: ± .10
TWO PLACE DECIMAL: ± .01
DO NOT SCALE DRAWING

DRAWN: SEM. DATE: 1/11/2019

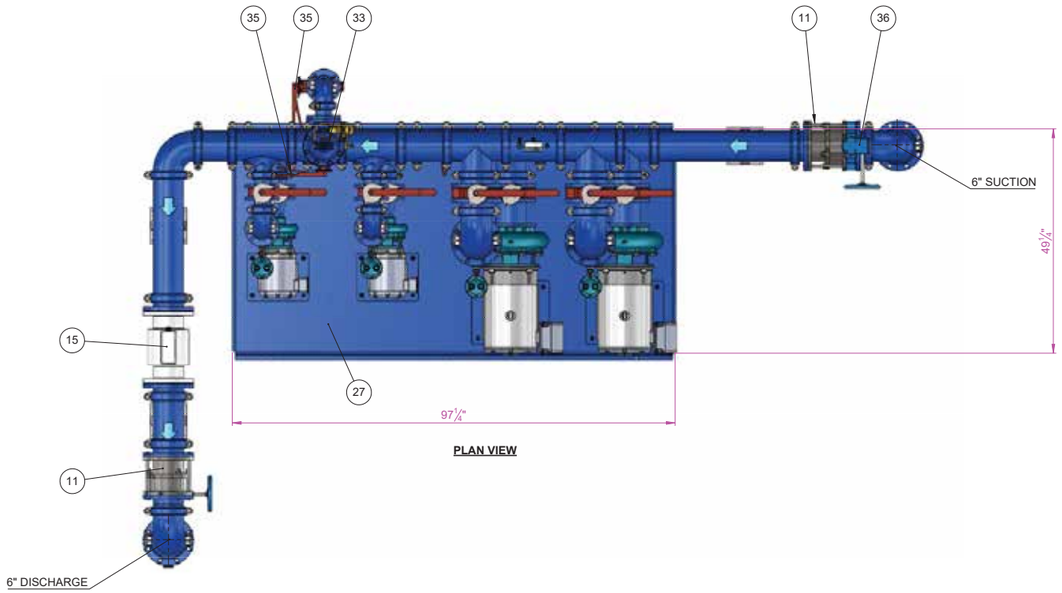
TITLE: **BOOSTER SYSTEM PUMP STATION**
PROJECT: HILLCREST - NAPA
LEVEL: 60% Pre-Final
PART NO: 2C-1CHF-NJ-NF-FM-8
JOB: SIZE: D SCALE: NTS SHEET: 1 OF 2 REV -

POTABLE
NOT FOR FABRICATION

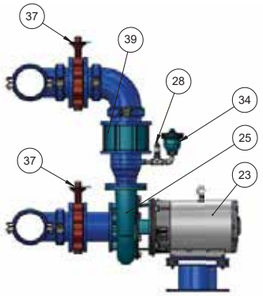


PLAN VIEW

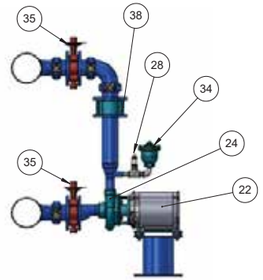
PPS PRECISION PUMPING SYSTEMS 6515 BUSINESS WAY BOISE, IDAHO 83716 208-323-5300 www.goppsi.us	MATERIAL Piping: STEEL A53 Skid: STEEL A36	TITLE: BOOSTER SYSTEM PUMP STATION
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES FRACTIONAL ± 1/8" ONE PLACE DECIMAL: ± .10 TWO PLACE DECIMAL: ± .05 DO NOT SCALE DRAWING	PROJECT: HILLCREST - NAPA
		LEVEL: 60% Pre-Final
		PART NO.: 2C-1CHF-NJ-NF-FM-8
	DRAWN: SEM DATE: 1/11/2019	JOB: SIZE: D SCALE: NTS SHEET: 2 OF 2 REV: -



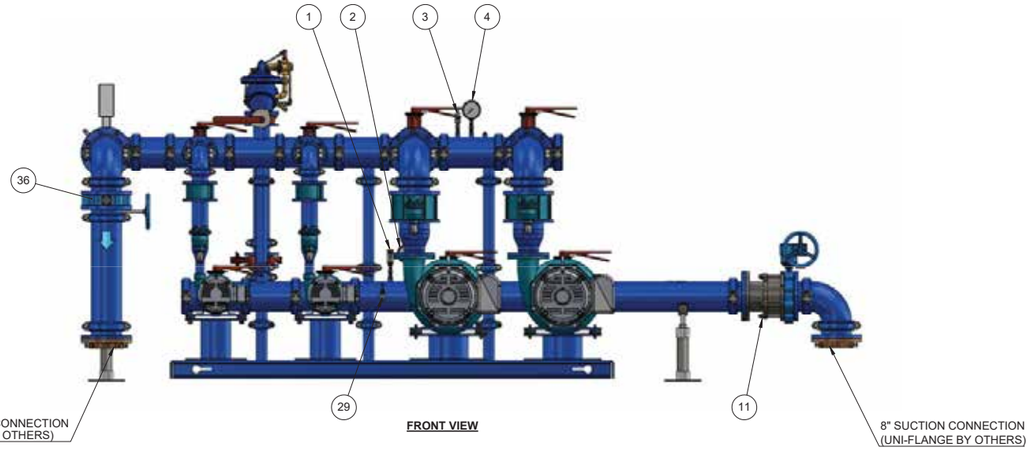
PLAN VIEW



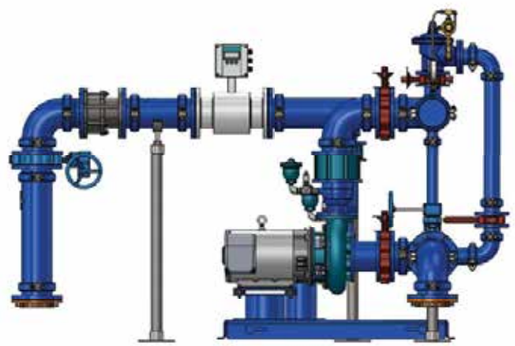
HIGH FLOW PUMP



DUTY PUMP



FRONT VIEW



END VIEW

DESIGN SPECIFICATIONS

Design Flow Rate:	100 GPM @ 41 PSI
Duty Pump Details:	5 HP/Pump | 114 GPM @ 111 TDH
Jockey Pump Details:	25 HP/Pump | 1020 GPM @ 75 TDH
Minimum Power:	480 Volt / 3 Phase
Model #	CB#P2C005F00100-031XXXB483IAS-6

ITEM NO.	DESCRIPTION	Size	QTY.
1	*-14.5 - 145PSI PRESSURE TRANSMITTER WITH DISPLAY *YELLOW CORD *1/4" BRASS BALL VALVE	1/4"	1
2	*-30PSI TO 15PSI NO SHOK PRESSURE GAUGE 2.5"	2-1/2"	1
3	*100PSI PRESSURE TRANSMITTER *YELLOW CORD *1/4" BRASS BALL VALVE	1/4"	1
4	*160PSI NO SHOK PRESSURE GAUGE 2.5"	2-1/2"	1
5	ATS	150A	1
6	BUILDING, PRE-FABRICATED CONCRETE	192" x 120"	2
7	Control Panel	36x24x08	1
8	CRANE, JIB	120"	1
9	DAY TANK	75 GAL	1
10	DEHUMIDIFIER		1
11	DISMANTLING JOINT	6"	2
12	DUPLEX OUTLET, GFCI, 120V, LIGHT SWITCH		1
13	DUPLEX OUTLET, GFCI PROTECTED, 120V		2
14	FLOOR DRAIN	6"	2
15	FLOW METER 6", M20-HR-020-F15-S-AC-XX-MM-XX-VDC-GR-XX	6"	1
16	GENERATOR	60 kW	1
17	HVAC UNIT,	3 Ton	1
18	LIGHT FIXTURE, EMERGENCY		1
19	LIGHT FIXTURE, EXTERNAL		1
20	LIGHTING PANEL	125 A	1
21	Main Distribution Panel	400A	1
22	MOTOR, 3600 RPM	5 HP	2
23	Motor	25 HP	2
24	Pump, Centrifugal	3BF	2
25	PUMP, CENTRIFUGAL	15BF	2
26	RUBBER MATTING, WALL-TO-WALL		1
27	SKID, BENT	48x96	1
28	SWITCH, POINT LEVEL SENSOR, PNP, IFM, G1/2	1/2"	4
29	TAP, SAMPLING, LEAD FREE, CHROME PLATED, 3/4" MPT	3/4"	1
30	THERMOSTAT		1
31	TRANSFORMER	3kVA	1
32	UNIT HEATER	5kW	1
33	3", 52-03 SURGE ANTICIPATOR VALVE, ANGLED	3"	1
34	VALVE, 3/4" AIR RELIEF, VALMATIC	3/4"	4
35	VALVE, 3" BFV, NSF61, LUG, LEVER OP	3"	6
36	VALVE, 6" BFV,NSF61, LUG, GEAR OP	6"	2
37	VALVE, 6" BFV, NSF61, LUG, LEVER OP	6"	4
38	VALVE, 3", WAFER CHECK, VALMATIC	3"	2
39	VALVE, 6", WAFER CHECK, VALMATIC	6"	2
40	VFD DRIVE, ACS550	5 HP	2
41	VFD DRIVE, ACS550	25 HP	2

POTABLE
NOT FOR FABRICATION

REV.	DESCRIPTION	DATE	APVD
	REVISIONS		

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208-323-5300
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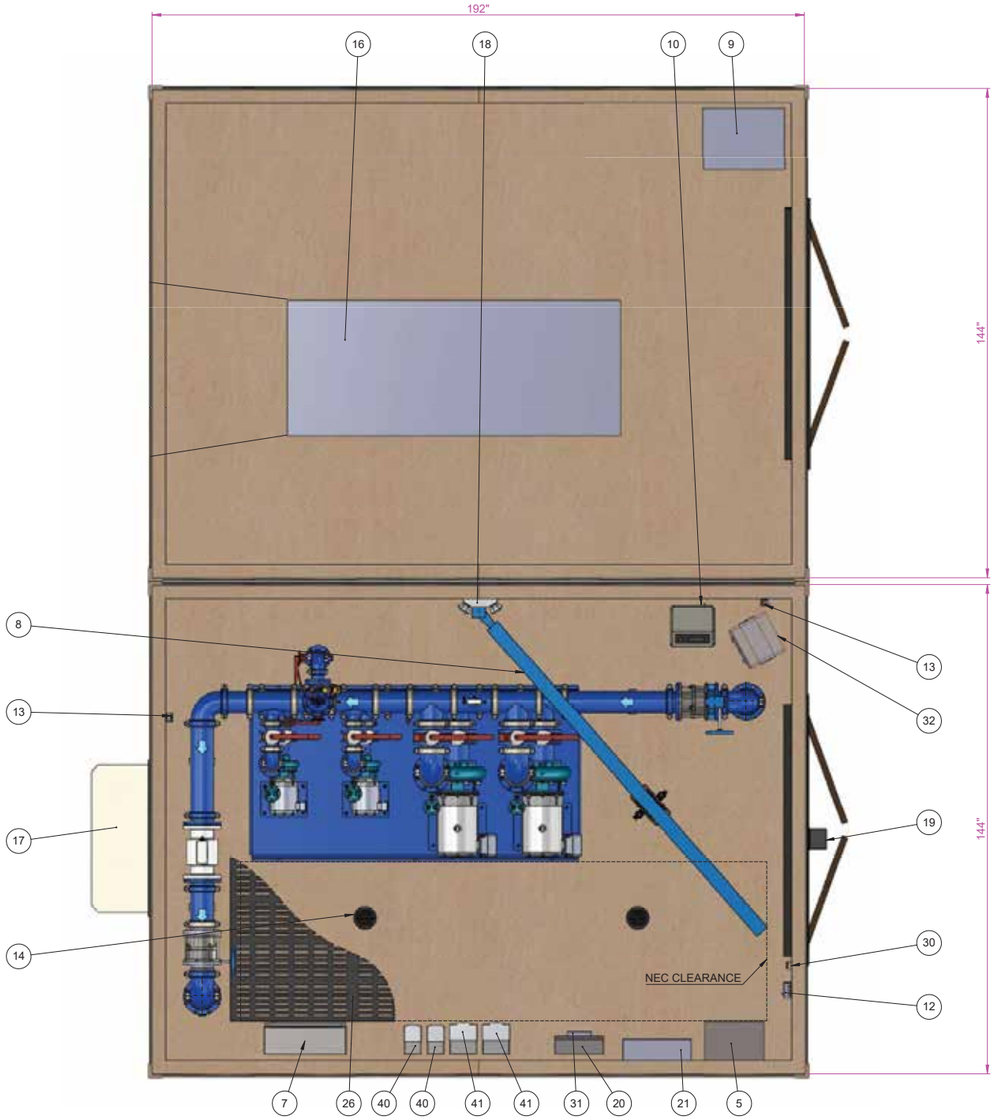
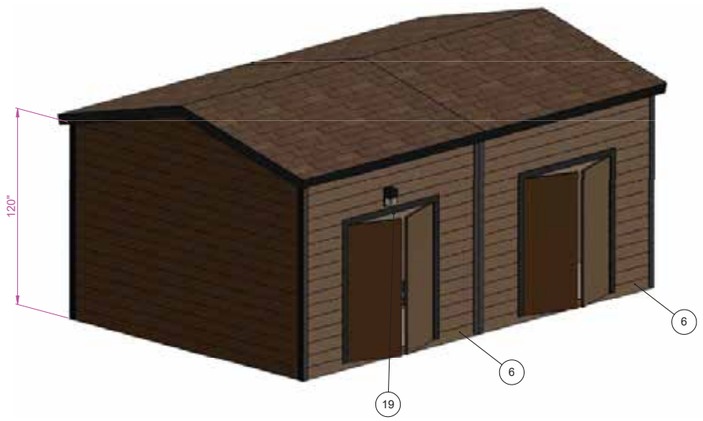
TWO PLACE DECIMAL: ± .05
DO NOT SCALE DRAWING

DRAWN: SEM | DATE: 1/11/2019

TITLE: BOOSTER SYSTEM PUMP STATION
PROJECT: SILVERADO - NAPA
LEVEL: 60% Pre-Final
PART NO: 2C-2CHF-NF-6
JOB: | SIZE: D | SCALE: NTS | SHEET: 1 OF 2 | REV -



PLAN VIEW



PPS PRECISION PUMPING SYSTEMS 6515 BUSINESS WAY BOISE, IDAHO 83716 208-323-5300 www.gopps.us	MATERIAL Piping: STEEL A53 Skid: STEEL A36	TITLE:	BOOSTER SYSTEM PUMP STATION
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ± 1/8" ONE PLACE DECIMAL: ± .10 TWO PLACE DECIMAL: ± .05 DO NOT SCALE DRAWING	PROJECT:	SILVERADO - NAPA
		LEVEL:	60% Pre-Final
		PART NO:	2C-2CHF-NF-6
	DRAWN: SEM DATE: 1/11/2019	JOB:	SIZE: D SCALE: NTS SHEET: 2 OF 2 REV: -

1

RESUMES

DENNIS GUTIERREZ

Project Executive

Dennis currently serves as Vice President at GSE Construction, having held previous roles of Project Engineer, Superintendent, Project Manager, Design-Build Coordinator, and Estimator. Dennis' focus has been on Industrial and Alternative Delivery projects. He has been involved in all phases of the design process from feasibility assessments to geotechnical investigations and through to the issuance of For Construction documents. Dennis has also supervised water and wastewater treatment projects including associated grading, underground utility construction, concrete structures, mechanical, and electrical installations.

Dennis will serve as the Design/Build Coordinator for the project overseeing the Preconstruction Phase including design, permitting and process equipment procurement.

YEARS OF EXPERIENCE

+15 years

EDUCATION

M.A. Environmental Policy

Middlebury Institute of International Studies

B.A. Political Economy

Pitzer College

LICENSE AND CERTIFICATIONS

Licensed "A" Contractor in California, Oregon, and Idaho
Hazwoper 40
CPR/First Aid
OSHA 10 Hour
DBIA Certification (Pending)

SOFTWARE

Microsoft Office
Primavera SureTrak
Microsoft Project
AutoDesk Buzzsaw & Design Review
Prolog LT
Forefront
Viewpoint
Procore

RELEVANT PROJECT EXPERIENCE

LLNL Sitewide Utilities Replacement | $2.8M | Livermore, CA
Montevina WTP Improvements | $15M | Los Gatos, CA
Foster Farms WWPS Upgrades | $3.9M | Livingston, CA
Land O' Lakes pH Neutralization System & Truck Scales Facility | $6.8M | Tulare, CA
E&J Gallo LWN Nitrate Treatment System | $1.8M | Livingston, CA
Intel CH-8 RO/DI System Project | $5.3M | Chandler, AZ
Modesto Phase 2 BNR/Tertiary WWTP | $103M | Modesto, CA
Digester Improvements & FOG/Food to Energy Facility | $6.2M |San Rafael, CA
Dr. Pepper/Snapple Process Water Treatment System | $435k | Victorville, CA
Unilever/GHB Water Treatment Plant Upgrades | $2.7M | Henderson, NV Marquez Brothers Wastewater Pretreatment System | $4.9M | Hanford, CA Woodbridge Winery Anaerobic Pretreatment System PH II | $3.9M | Acampo, CA Temporary Dewatering Facility | $1.3M | Oakland, CA
Aquarius Wastewater Pretreatment System | $3M | Riverside, CA
Mariani Wastewater Pretreatment System | $4M | Vacaville, CA
Sedimentation Basin Rehabilitation PH I, II, & III | $4.5M | Oakland, CA
Zone 1 Reservoir 1.3 | $3.3M | Brentwood, CA
Hennessey WTP Filter Gallery Improvements | $1.5M | Napa, CA
Fleming Hill WTP Sludge Dewatering Facility | $7M | Vallejo, CA

PROFESSIONAL AFFILIATIONS

Design Build Institute of America (DBIA)
California Water Environment Association (CWEA)

PUBLICATIONS/ACCOLADES

Government Engineering Magazine (2006)
NECA Project Excellence Award (2005)

YEARS OF EXPERIENCE

17 years

EDUCATION

B.A. Business Administration
Sonoma State University

Certificate in Financial Analysis
Columbia College

PROFESSIONAL

CA General Builder Lic."B"
CA Contractor Lic. C27
Competent Person,
Multiple OSHA 30 hour
OSHA Golden Gate Certificate

SOFTWARE

Microsoft Office
P6 + SureTrak
Bluebeam Revu
ViewPoint Vista
Procore
Foundation & Oracle Textura

MICHAEL TIPPETT

Construction Manager

Michael is an experienced Project Manager with extensive work history overseeing complex heavy civil engineering projects. His role as a Senior Project Manager at GSE involves managing all aspects of projects including, but not limited to: CPM schedule with updates, budgets, change orders, subcontractors, procurement, project administration, startup, and closeout. Michael will serve as the direct company representative and decision maker in all contractual matters for the project.

Prior to working for GSE Construction, Michael served as the project manager on over $100M of Water Treatment & Process facility capital improvement projects.

RELEVANT PROJECT EXPERIENCE

Brentwood Non Potable Water Storage| $15M | July 2018 – Present Senior Project Manager

The Project is located at 2251 Elkins Way, Brentwood, CA. The work included the construction of a 3 MG non-potable water reservoir and related appurtenant structures, pump station and control building, tank facility improvement, existing utility pump station modification, sheeting, shoring and bracing, electrical, lighting, PLC, SCADA, pumps, SWPPP and erosion control, demolition, piping, dewatering and cathodic protection.

Griffith Pumpstation | $20M | Oct 2017 – Jul 2018 | Senior Project Manager

The Griffith Pump Station, built in 1989, is a dry and wet weather pump station located at Hunters Point. The work included replacement of wet weather pumps, replacement of dry weather pumps, replacement of sumps pumps, new manifold and process piping, bar screen(s) replacement, 3 monorail crane installations, HVAC and odor control systems replacement, fuel tank replacement, hydraulic power work, water tight door replacement, electrical systems, process instrumentation, automation & system integration, and structural canopies.

SE Water Pollution Control Plant 521/522 and Disinfection Upgrades | $35M | Jul 2016 – Jul 2018 | Senior Project Manager

The Southeast Water Pollution Control Plant (SEP) is located in the southeast part of San Francisco. The plant treats approximately two-thirds of the city's wastewater throughout the year, during both dry and wet weather seasons. WW-613 SEP 521/522 and Disinfection Upgrades project addresses equipment and systems that are in need of replacement due to corrosion, operating inefficiencies, and failures. The work included replacement of slide gates, new Post Chlorination Building, new Electrical and HPU Building, coating of underground chlorine contact channels, new pump station, and modification of master control building and laboratory.

MICHAEL TIPPETT CONT'D

RECENT PROJECT EXPERIENCE

Joint Base Lewis McChord - $5M | Sep 2015 – Jun 2016 | Project Manager
Labor only contract. 8,600 lf of yard piping with diameters up to 42" at depths of 18'. It was finished ahead of schedule leading into the Mechanical Installation. This phase included the installation of over 3,000 lf of pipe, fittings, and valves with diameters up to 36". Installed over forty pumps, multiple storage and chemical Feed Tanks, processing equipment, chemical injection equipment and seven large Evoqua micro filter stations with over 1,000 Victaulic Couplings.

TRACEN Waste Water Facilities Project - $27M | Aug 2012 – Dec 2015 | Senior Project Engineer
The contract included excavation and construction of 2 Storage Ponds with 215 acre feet of treated water, excavating and grading for buildings and tertiary tank(s), installation of recycled water piping throughout the Coast Guard Base, installation of waste water facility piping, and installation of transfer piping.

Owens Lake Dust Mitigation Project - $110M | Sep 2014 – Apr 2015 | Project Manager
Worked as a critical subcontractor of the team working with Barnard Construction on mechanical piping turnouts throughout the dry lakebed.

Satterlee Road Improvement Project - $4M |Apr 2014 – Apr 2015 | Project Manager
Design/Build project to convert the one way Satterlee Road to a new all-weather two way road with additional parking. Areas of improvement included new pathway and boardwalk to enhance pedestrian access, benches, and ADA parking access. This project required many disciplines such as: earthwork, paving, curb and gutter installation, storm drain installation, domestic water pipe installation, retaining wall construction, rip rap installation, parking stalls, promenade pathway, utility adjustments, collection and treatment, and replanting of disturbed areas with native species.

Stockton Amonia Facilities Project - $3M | Jan 2014 – May 2014 | Project Manager
Installation of multiple underground pipe systems into existing utilities, along with building excavation and the installation of a 48" ammonia mixer.

Pacific Wind Energy Project 14,400 SF O&M Building | $3.5 M | Oct 2011 – Aug 2012 | Project Manager
14,400 square foot building in Kern County. Performed all design, permitting, site improvements, utilities, construction, tenant improvements, furnishings, and turn over to owner.

JJ MACARANDAN
FIELD SUPERINTENDENT

JJ began his career with GSE as a Superintendent on the $17 Million ECHO Disinfection Chemical Storage Project. While on that project, JJ oversaw GSE's craft labor, managed the process equipment start-up and handled coordination with subcontractors. JJ supervises daily field work and manages day to day and long term scheduling of work, equipment, subcontractors, and manpower. JJ will serve as the onsite point of contact with the CM, Client, Engineer and processes field documents including RFI's, Submittals, Change Orders, JHAs and Safety Inspections.

At his previous company, JJ served as a Project Engineer on an 800 million dollar project over the course of 4 years for the OSHPD Hospital Campus in Downtown Sacramento. His primary responsibilities were the preparation of work plans, submittals, RFI's, and change orders.

YEARS OF EXPERIENCE

7 years

EDUCATION

B.S. Construction Management
Minor in Business Administration
California State University Sacramento

LICENSE & CERTIFICATIONS

QSP Certified
CESSWI Certified
CPR AED Certified
OSHA 30 hour
OSHA 10 hour
Competent Person,Excavations

SOFTWARE

Microsoft Office
AutoCAD
Primavera P6
SureTrak
Bluebeam Revu
PlanGrid
Procore
P6 Scheduling

RELEVANT PROJECT EXPERIENCE

- Anaerobic Digester No. 4 | $8.2M | Dublin, CA
- BN 2200 Site Remediation Project | $2.3M | Livermore, CA
- Diablo Vista Pumping Plant and LelandRate Control Station | $7.9M | Lafayette, CA
- ECHO Disinfection Chemical Storage Project | $17M | Elk Grove, CA

Sewer Lift Station, Roseville, CA
2130 Daylight Drive Sanitary Sewer Lift Station
Project Value: $1.5M
Position: Project Manager
Project Details: Install new precast wet well with a 99,000Gal overflow basin and valve vault for new housing development. Install all underground and tie into existing utilities. Finish grade site and install hardscape, AC driveway with security wall and gate.

Digester and FOG Expansion Project, Dublin San Ramon WWTP, Pleasanton, CA
Digester #4 and FOG Receiving Facility
Project Value: 8.2M
Position: Superintendent/Project Manager
Project Details: Demo existing parking lot, install new anaerobic digester and mechanical pad, fat oil and grease receiving facility, tie-into existing facility, parking lot and landscaping.

Pumping Plant and Rate Control Station, Lafayette, CA
Diablo Vista Pumping Plant and Leland Rate Control Station
Project Value: $7.9M
Position: Superintendent/Project Manager
Project Details: Demolish existing pumping plant and rate control station and replace with new. Construct new parking lot at former pumping plant

Site Remediation Project, Lawrence Livermore National Laboratory, Livermore, CA
Existing Utility and Site Stabilization
Project Value: 2.3M
Position: Superintendent
Project Details: Demolition and removal of existing 2000LF of lab waste piping, 7800LF utilities, AC, concrete cistern and containment structures. Install new storm drain pipe and drop inlets. Export 3600CY of contaminated soil, import, backfill and final grade site.

Sac Regional WWTP Disinfection Chemical Storage Project, Elk Grove, CA
Sodium Hypochlorite and Sodium Bisulfite Chemical Storage Tanks
Project Value: 15M
Position: Project Engineer/Superintendent
Project Details: 26 thousand gallon FRP tank installation, concrete containment structures, Operations building, tie-into existing disinfection/dechlorination systems.

FIELD ENGINEER THE BOLDT COMPANY 2011 – 2015

- OSHPD Hospital Campus ($800M)
- Emergency Department Cosmetic Upgrade Project ($650k)
- Served as an intern from 2011-2013, then promoted to Field Engineer
- Responsible for coordinating ADA plan and field reviews
- Managed concrete and rebar
- Responsible for making trade partners
- Processed submittals, change orders, and RFI's
- Updated drawings and specifications
- Coordinated with subcontractors and field personnel
- Performed safety audits and field inspections
- Assisted with scheduling and coordination of meetings
- Drew up contracts

YEARS OF EXPERIENCE
30 years

EDUCATION
- 1976 Chabot College
  Computer Science

LICENSE & CERTIFICATIONS
CPR and First Aid Training
Confined Space Training
Forklift Training
40 Hour Initial Training requirements for Hazardous Waste Operation & Emergency Response

SOFTWARE
Lotus
Excel
MS Word
MS Project
Viewpoint
Procore
CGC Invitation to Bid
Adobe Acrobat

PAUL HAVLICEK
PROCUREMENT MANAGER

PROFESSIONAL SUMMARY

Senior Estimator of GSE Construction providing over 30 years of quality construction experience. Enabled with vast construction knowledge through prior positions as Procurement Manager, IT Support, Project Manager, Project Engineer, Superintendent, and Foreman. Now a part of the GSE Estimating team that estimates and bids numerous multi-million dollar projects.

PROJECT PROCUREMENT EXPERIENCE

2018 - LLNL Block 2200 Utility Distribution, Repair and Installation
Livermore, CA - $3,987,800

Purchase Orders issued valued at $797,000; largest single Purchase Order $345,000 LV Switchgear.

2018 - Oro Loma Sanitary District Nutrient Optimization Project
San Lorenzo, CA - $19,430,900

Purchase Orders issued valued at $6,762,000; Largest Purchase Orders: $2,100,000 Piping Systems & Valves, $1,062,204 Fine Bubble Diffusion Equipment, $1,009,400 High Speed Turbo Blowers, $500,500 Misc. Metals.

2018 - East Bay Discharge Authority HEPS Project
Hayward, CA - $2,425,100

Purchase Orders issued valued at $1,000,000; Largest single Purchase Order $721,600 Prefabricated Electrical Building with MCC.

2018 – Los Banos Headworks Project
Los Banos, CA - $5,727,100

Purchase Orders issued valued at $856,000; Largest Purchase Orders: $111,200 Misc. Metals, $150,000 Piping Systems & Valves, $30,000 Pre-Engineered Aluminum Fixed Pier, $20,000 FRP Fans and Ducting.

2017 – DSRSD Anaerobic Digester No. 4 Project
Pleasanton, CA - $7,766,000

Purchase Orders issued valued at $2,400,000; Largest Purchase Orders: $235,000 ANSI and Chopper Pumps, $348,800 Mechanical Draft Tube Digester Mixers, $110,400 Digester Gas Equipment, $69,900 Tube Heat Exchanger, $52,000 Spiral Heat Exchanger, $67,170 Chemical Mix Tank System, $700,000 Piping Systems and Valves.

2017 – EBMUD South Reservoir Replacement Project
Castro Valley, CA - $14,766,000

Purchase Orders issued valued at $2,100,000; Largest Purchase Orders: $653,500 Fabricated Welded Steel Piping, $339,460 Misc. Metals, $450,000 HDPE Piping and Valves, $137,500 Recycled Aggregate Base Rock, $98,150 Geotextile Slope Materials.

PROJECT PROCUREMENT EXPERIENCE

2016 – Lathrop Consolidated Treatment Facility Phase II Expansion
Lathrop, CA - $17,696,700

Purchase Orders issued valued at $6,158,500; Largest Purchase Orders: $340,000 Concrete, $488,280 Misc. Metals, $35,900 Aluminum Handrails, $49,600 Hollow Metal Doors, Frames and Hardware, $25,175 Chemical Feed Equipment, $232,500 Submersible Pumps and Mixers, $25,500 Multistage Centrifugal Pumps, $1,529,800 MBR Treatment Equipment, $748,800 Blower Equipment, $998,000 Headworks Screening Equipment, $55,000 Odor Control Equipment, $59,950 FRP Baffle Walls, $53,750 Weir and Sluice Gate Valves.

2015 – KCGS Lerdo Campus WWTP Improvements Project
Bakersfield, CA - $17,761,700

Purchase Orders issued valued at $3,567,000; Largest Purchase Orders: $200,000 Concrete, $118,645 Misc. Metals, $35,750 Diesel Fuel for New Generator, $169,950 Containerized Fire Pump Equipment, $38,200 HE Centrifugal Pumps, $119,000 Mixed Flow Pumps, $38,000 Multi-Stage Vertical In-Line Pumps, $22,700 Submersible Pumps, $66,600 Polyethylene Storage Tanks, $430,000 Mechanic Screen and Washer Equipment, $32,900 Peristaltic Chemical Feed Pumps, $277,500 Dry Chemical Feed Equipment Systems, $119,700 Circular Clarifier Equipment, $59,700 Floating Aerator Equipment, $14,900 FRP Flume, $19,000 Sluice and Slide Gate Valves, $820,000 Piping Systems and Valves.

2015 – ECHO Disinfection Chemical Storage Project
Elk Grove, CA - $15,076,400

Purchase Orders issued valued at $4,543,700; Largest Purchase Orders: $157,000 Aggregates, $153,000 Precast Concrete, $187,500 Concrete, $106,700 Misc. Metals, $20,000 Hollow Metal Doors, Frames and Hardware, $89,850 FRP Fabrications, $54,500 Vertical Turbine Pumps, $20,000 Submersible Pumps, $1,235,103 FRP Chemical Tanks, $450,000 Liquid Chemical Metering Pumps, $151,000 Liquid Chemical Transfer Pumps, $1,243,293 Piping Systems and Valves.

2015 – EBMUD Diablo Vista Pumping Plant
Lafayette, CA - $7,400,500

Purchase Orders issued valued at $2,040,792; Largest Purchase Orders: $28,000 Precast Concrete, $63,000 Concrete, $116,247 Structural and Misc. Metals, $492,500 Vertical Turbine Pumps, $1,074,033 Piping Systems and Valves.

2014 – Galt WWTP Upgrade Project
Galt, CA - $19,851,000

Purchase Orders issued valued at $5,019,011; Largest Purchase Orders: $371,900 Concrete, $156,186 Misc. Metals, $20,000 Hollow Metal Doors, Frames and Hardware, $275,000 Low Speed Agitation Mixer Equipment, $119,000 Weir and Slide Gate Valves, $182,704 Perforated Plate Screen Equipment, $120,308 Screening Washer Compactor Equipment, $940,050 Circular Clarifier Equipment, $66,8010 Submersible Pumps, $302,000 Screw Press Dewatering Equipment, $148,800 Floating Brush Aerator Equipment, $25,906 Diaphragm Metering Pumps, $324,000 Progressive Cavity Pumps, $24,450 Automatic Self Cleaning Filters, $66,450 Shaftless Screw Conveyors, $1,027,012 Piping Systems and Valves.

NATE JONES

LEAD ESTIMATOR

As the lead estimator Nate is the head of the team. He is responsible for reviewing all municipal bidding opportunities and deciding which to pursue based upon the company's current workload, project scope and competition. His project bidding duties include, but are not limited to, closing out bids, inputting all subcontractor numbers, process equipment, all major self -perform labor takeoffs and major PO items. Nate spent several years in the field as a Field Engineer and Superintendent, responsible for day to day operations of construction.

9 Years

YEARS OF EXPERIENCE

EDUCATION

B.S. Mechanical Engineering
Cal Poly State University, San Luis Obispo

LICENSE & CERTIFICATIONS

Procore Software Certification
CPR and First Aid Training
OHSA 10 Hour

SOFTWARE

Windows,
Microsoft Office
Microsoft Project
Microsoft Excel
Viewpoint
Procore
Planswift

RELEVANT PROJECT EXPERIENCE – LEAD ESTIMATOR

- Lerdo Campus Water/Wastewater Improvements | $18M | Bakersfield, CA
- Consolidated Treatment Facility Phase II Expansion | $18M | Lathrop, CA
- Anaerobic Digester No. 4 FOG Receiving Facility | $8M | Pleasanton, CA
- WWTP New Headworks Project | $6M | Los Banos, CA
- Non-Potable Storage Facility | $10M | Brentwood, CA
- Nutrient Optimization Project | $19M | San Lorenzo, CA
- Santa Rosa WRF Reclamation Facility Rehab | $28M | Temecula, CA

RELEVANT PROJECT EXPERIENCE – FIELD

- Rio Vista WTP Expansion | $39M | Santa Clarita, CA
- Solids Handling Facility Improvements | $4M | Tracy, CA
- Phase II BNR/Tertiary WWTP | $103M | Modesto, CA
- Mariani Clarifier Bypass | $67k | Vacaville, CA
- Bollman WTP Filter Valve Replacement | $1M | Concord, CA

BEHZAD NAZARI
QA/QC Manager

Behzad has over 10 years of experience in project control and quality control management of multimillion dollar infrastructure projects. He started with GSE as a Quality Control Manager on the $17M Echo Disinfection Chemical Storage project and was promoted to project engineer on the $18.GM Lathrop Consolidated Treatment Facility Phase II. There he was responsible for preparing & submitting project Submittals, RFI's, Change Orders, closeout and coordination with subcontractors.

Behzad currently serves as the Superintendent on the Brentwood Non-Potable Storage Facility project where he supervises daily field work and manages day to day and long term scheduling of work, equipment, subcontractor and manpower.

YEARS OF EXPERIENCE

10 years

EDUCATION

B.S. Civil Engineering
Herat Engineering Faculty
Herat, Afghanistan

CERTIFICATIONS

- OSHA 10 & 30
- CPR/First Aid
  Participated in GSE
  Confined Space Training

PROFESSIONAL AFFILIATIONS

- Construction Quality Management for Contractors, USACE
  Kunduz, Afghanistan
- Grab the Basic
  Project Scheduling for Contractors, USACE, Kabul, Afghanistan

SOFTWARE

QCS (US Army Program for Quality Control)
AutoCAD
MS Project
MS Office
Primavera PG
Procore
PM Web
ViewPoint

RELEVANT PROJECT EXPERIENCE

Brentwood Non-Potable Starage Facility | $10.SM | Brentwood,CA
Lathrop Consolidated Treatment Facility Phase II | $18.GM | Lathrop,CA
ECHO Disinfection Chemical Storage | $17M | Elk Grove,CA

CHIEF OF QUALITY CONTROL DEPT/PROJECTS CONTROLLER
OMRAN HOLDING GROUP 2010 - 2015

- Managed a team of 20 quality control Managers and Inspector's on project sites, and 5 QC Office Engineers and Submittal Officers in the main office
- Performed internal quality systems audits to determine compliance with accredited quality systems requirements
- Reviewed contract documents and prepared preconstruction plans (QC Plan, Submittal Register)
- Followed up with cost, scheduling, procurement, design, and contracting departments
- Finalized submittals, prepared invoices, submitted RFI's, and monitored project closeout processes
- Performed inspections on project sites to monitor progress and ensure conformance to design specification, safety, and sanitation standards

SENIOR PROJECT COORDINATOR/QUALITY CONTROL MANAGER
DYNCORP INTERNATIONAL LLC (MATOC PROGROM) 2008 - 2009

- Managed project documents and commitments
- Coordinated scheduling plans with the Client, Project Management, and Subcontractors
- Processed invoices and reviewed submittals
- Performed inspections of job sites and documented field test reports

Chad R. Coleman, P.E.

Principal-in Charge / Quality Assurance Lead

Education

M.S., Civil Engineering
Brigham Young University

B.S., Civil Engineering
Brigham Young University

Registrations

Professional Engineer # 56490, CA

Professional Engineer # 8964, ID

Professional Engineer # 188915, UT

Professional Engineer # 16990, NV

Water Treatment Plant Operator, CA, Grade 3

Professional Affiliations

American Public Works Association

American Water Works Association

Water Environment Federation

Sacramento Area Water Works Association

Mountain Counties Water Resources Association

California Water Environment Association

Special Certifications

Completed Risk Assessment Methodology for Water Utilities (RAM-W™) Training Course sponsored by AWWA

Certified Grant Administrator, Idaho

Chad has over twenty-five years of experience planning, designing, and managing construction of water and wastewater infrastructure and facilities. He is experienced with the planning, design, and construction management of pump stations, municipal wells, water treatment plants, water storage tanks, transmission and distribution piping, as well as wastewater collection system rehabilitation and design, wastewater lift stations and wastewater treatment plants.

Chad distinguishes himself by providing outstanding client service that is punctuated with attention to excellent written and verbal communications.

Selected Project Experience

Midas Booster Pump Station, Rocklin, California: Retained by The Granite Bay Developers for the design of a water booster pump station for a new housing development. The pump station was located at the exiting Placer County Water Agency (PCWA) Midas Tank site in Rocklin, California. The design included the water hydraulic modeling of the distribution system, a surge analysis, and a preliminary design report and cost estimate. Modifications to the existing tank include a new above ground wall mounted tank nozzle and tie-ins to the exiting tank inlet/outlet and overflow lines. The pump station included a pump building, electrical and control panel, emergency generator with automatic transfer switch, fuel tank, surge tank, and a total 3 jockey pumps and 4 booster pumps with variable frequency drives.

Hydropneumatic Pump Station 3.3, Brentwood, CA: Project Manager responsible for the design and construction engineering services for a hydropneumatic pump station required to serve the new Vineyards development in the City of Brentwood. The hydro- pump station included four domestic pumps capable of a firm capacity of 750 gpm and a maximum capacity of 3,300 gpm. In addition, the site included a 275 KW emergency generator and a 20,000-gallon hydropneumatic tank.

Reservoir 2.3, Brentwood, CA: Project Manager responsible for the design and construction engineering services for a partially buried 4-million-gallon pre-stressed concrete water storage reservoir.

Booster Pump Station 2.3, Brentwood, CA: Project Manager responsible for the design and construction engineering services for a booster pumping station with a firm pumping capacity of 2,700 gpm

which pumped to an upper pressure zone and a ground level tank in that zone.

Hydropneumatic Booster Pump Station 2.2, Brentwood, CA: Project Manager responsible for design of a hydropneumatic booster pump station capable of a firm capacity of 1,400 gpm and a total capacity of 5,400 gpm used to provide domestic service and fire protection water to the northwest side of Brentwood. System included a 25,000-gallon hydropneumatic tank and a 450-kW generator.

Zone 4 Pump Station, City of Folsom, CA: Project Engineer for design of major modifications to an existing water pump station, which was built as a hydro-pneumatic pump station with a maximum capacity of 2,000-gpm. The final pump station served a new ground level storage reservoir and had a capacity of 4,000-gpm. Design included provisions for improving the sound attenuation and site aesthetics for an existing 180 kW generator.

Non-Potable Water Storage Tank and Pump Station, Brentwood, CA: Principal in Charge responsible for the design of a 3 million-gallon pre-stressed concrete water storage tank together with a non-potable water pump station capable of a firm delivery of 3,300 gpm. The tank elevation was set to correspond to the existing hydraulic grade line of the wastewater treatment plant discharge so that double pumping would be avoided. The tank and pump station were sized to maximize the opportunity to store and deliver NPW so that surface water discharge will be minimized.

MSA Engineering, Delta Shores Lift Station: Principal in Charge responsible for the planning, design, and construction engineering of a sewer lift station. The duplex lift station was sized to pump 0.48 MGD and included quick connects for an emergency generator and connections to allow bypass pumping in the event of station failure.

Wastewater Lift Station Design, Fairfield, CA: Project Manager responsible for design of a new Sewer Lift Station to serve an industrial development. The new facility included new submersible solids handling pumps with a pumping rate of 131 gpm.

Stormwater Pump Station Design, Fairfield, CA: Project Manager for the design and construction engineering services for a stormwater pump station planned to serve a new industrial complex in the City of Fairfield, CA. The client was a private developer with specific requirements to capture and treat low stormwater flows and bypass higher stormwater flows. The resulting stormwater pump station was a very unique design that collected surface flow from three different drainage swales, pumped to two different detention basins, and shut down on high water level to allow high volume stormwater events to bypass the pump station completely.

Woodbridge Park Stormwater Pump Station Design, Manteca, CA: Project Manager for the design of a new Woodbridge Park Stormwater Pump Station to serve a new phase of the Del Webb Community in Manteca, CA. This pump station was an improvement on pump stations included in earlier phases of the development. It included an outdoor wet well, two vertical mixed flow pumps, and a smaller submersible pump.

Auburn Bypass Pipeline, Auburn, CA: Project Manager for the successful design and construction engineering effort for a 4,600-foot, 20-inch ductile iron transmission pipe for the Placer County Water Agency.

Broadmoor Estates Water Main Replacements, Sacramento Suburban Water District, Sacramento, CA: Project Manager responsible for preparation of design, plans and specifications for replacement of 6,500 feet of new water distribution piping and 95 residential service connections.

Latrobe Road Utilities Relocation, El Dorado Irrigation District, CA: Project Manager responsible for design and plan preparation for construction of approximately 4,000 feet of 18-inch water line and abandonment of a like footage of 12-inch water line.

East Area Raw Water System, City of Folsom, CA: Project Engineer responsible for feasibility planning and design of a raw water system to provide untreated irrigation water to the East Area of Folsom. Design included a 2,000-gpm submersible pump station with appurtenances to accommodate widely varying irrigation flow rates and pressure surges and two miles of 12-inch transmission pipeline. The project was constructed entirely without ceasing operations or service to existing customers through the use of extensive and detailed construction phasing planning during design.

Cannery Ag Well, City of Davis: Principal in Charge responsible for the design and construction engineering of a 1,000 gpm municipal well to provide a clean water source to serve the irrigation needs of the Cannery development. The well features a submersible pump and is located outside so that it is easy to maintain. Discharge is directly into the irrigation system which uses a hydropneumatic tank to control pump motor cycling. A pilot well was drilled so that cuttings could be obtained and an e-log could be performed. Both were used to produce a final well filter pack and screen design based on site specific conditions.

Calaveras County Water Agency, Techite Pipe Replacement: Principal in Charge of the preliminary design of approximately 8100-fee of 10-inch PVC pipeline. The purpose of the project was to replace Techite pipe that had reached the end of it useful life. Because the

project site included many differing terrains and challenges, the design effort included evaluation and recommendation of numerous construction methods, including: parallel open cut, remove and replace open cut, bore and jack, and slip-lining the old pipe.

Arsenic Treatment, Funding, Planning and Design, Locke Water Works Company: Principal in Charge responsible to provide planning, secure SRF funding, design, and manage construction of a wellhead arsenic treatment plant. Preliminary engineering included management of a pilot study that met the requirements of the State of California funding guidelines.

Sunset Water Treatment Plan Filter Media Replacement, Placer County Water Agency, Auburn, CA: Project Manager responsible to provide technical assistance to PCWA on the replacement of filter media in an existing water treatment plant. Specialty services included a site visit and discussion with operations staff, an assessment of current conditions, and recommendations and technical specification writing required to assist the Agency in obtaining the new filter media they needed.

Alta Water Treatment Plant Improvements, Placer County Water Agency, Auburn, CA: Project Manager for the pre-design and design of multiple improvements to an existing water treatment plant located in Alta, CA. Improvements that required assessment and design to increase maximum plant flow rate included: new raw water pumps and MCC with VFD's, influent strainer, static mixer, influent raw water meter and rate of flow control valve, new pressure filters with air scour systems, backwash pump, in-plant water system and new genset with ATS. In addition, improvements were designed for the interior building walls to create concrete splash walls and remove timber framing that had rotted over the years. An additional study was made of system operations to determine ways to increase CT prior to the first customer.

Quail Valley Ranch Raw Water Supply Pipeline, Yuba County, CA: Project Manager responsible for design of a new 5-mile pipeline to supply water from the South Feather Water and Power treatment plant in Bangor to a new development in Yuba County.

Secret Town Pipeline Replacement, PCWA: Project Manager responsible for design and all quality control for a 1,500-foot, 36-inch pipeline replacement project on the Boardman Canal system of the Placer County Water Agency.

Water System Master Plan for County Service Area No. 3, Amador Water Agency, CA: Project Manager responsible for preparation of a master plan for Amador County Service Area No. 3 in preparation for transfer of the water system to the Amador Water Agency.

Water System Intertie Project, Sacramento Suburban Water

District, Sacramento, CA: Project Manager for the coordination and design of upgrades to seven existing interties between SSWD and their neighboring water purveyors. The purpose of the upgrades was to add a SCADA monitoring of intertie flow, pressure and intrusion in an effort to enhance the security of the water system. Coleman Engineering developed construction plans and specifications.

North Auburn Transmission Main, Nevada Irrigation District, Grass Valley, CA: Project Manager responsible to provide inspection, and Resident Engineering services to NID for the installation of a new 20-inch transmission pipeline in north Auburn. The pipeline crosses a natural waterway and Highway 49, a state highway. Both conventional excavation methods and trenchless pipe installation methods are to be used on the project.

Baker Siphon Pipeline Replacement, PCWA: Project Manager responsible for design and all quality control for an 800-foot, 42-inch raw water pipeline replacement project on the Boardman Canal system of the Placer County Water Agency.

Multiple Water Main Replacement Projects, Sacramento Suburban Water District, Sacramento, CA: Project Manager responsible for preparation of design, plans and specifications for replacement of nearly 50,000 feet of new water distribution piping and 827 residential service connections. The project location was in established neighborhoods in Sacramento where old water mains were located in back yards and were leaking regularly. New mains were replaced in streets with new service lines installed by directional drilling into the back yards.

Drayton Heights Water Main Replacements, Sacramento Suburban Water District, Sacramento, CA: Project Manager responsible for preparation of design, plans and specifications for replacement of 11,200 feet of new water distribution piping and 202 residential service connections.

Central Amador Water Project, Gravity Supply Line – Amador Water Agency, CA: Project Manager responsible to lead the detailed pre- design of a 20-inch, 3-mile long pipeline to deliver raw water from a PG&E forebay, across the Mokelumne River, to the Agency's Buckhorn Water Treatment Plant.

Water System Improvements, Harrah's Rincon – San Diego County, CA: Project Manager responsible for the pre-design and preparation of design-build bid documents for water system improvements required for an Indian Casino upgrade project. Improvements included: a new 650 gpm well and well pump, a 200,000 gallon water storage tank, a new booster pump station, relocation of an existing filter system, and associated yard piping. The well included sodium hypochlorite disinfection design.

South Stockton Water Transmission Mains, City of Stockton, CA: Project Engineer responsible to create contract documents for design-build teams to use in bidding. The project included construction of 8,000-feet of 16-inch transmission pipe and 4,800-feet of 24-inch transmission pipe.

Broadway Water Line Relocation, Sacramento, CA: Project Engineer responsible for design 2,000 feet of 8-inch water distribution main that was to be relocated as part of a larger reconstruction of Broadway Avenue.

Water Line Replacements, Arcade Water District, Sacramento, CA: Project Engineer responsible for design management and construction support for 30,000 feet of 8-inch and16-inch water line replacements for approximately 530 customer service connections.

Water Supply, Storage and Distribution System Improvements, Roswell Water User's Cooperative, Roswell, ID: Project Engineer for design of a new 200-gpm water well with submersible pump, a new 167,000-gallon welded steel reservoir, approximately 9,000 feet of distribution system, and 41 water services for the community of Roswell.

New Water Meters, Wells, and Water Storage Tank, Mores Creek Rim Ranch Water District, ID: Project Engineer for design and construction of water system improvements in a three-phase project: meters for each connection, two new 20-gpm wells drilled in hard rock formation using air rotary rigs, and a new 32,000-gallon bolted steel reservoir.

Dumbarton Force Main Pipeline, City of Newark: Principal in Charge responsible for the planning, and pre-design of a twin 33-inch sewer force main pipeline facility. The pipeline was to be relocated to accommodate new development. The project required design of approximately 10,000-feet pipeline across very poor soils with provisions for manned and unmanned access.

Vineyards NPW Pipeline, City of Brentwood, CA: Project Manager leading conceptual level investigations of the conversion of a 24-inch steel PG&E gas pipeline for use as a non-potable water pipeline. The first phase of the project will connect the Roddy Ranch Pump Station site to the Vineyards development. The project has included modeling to size the required pipeline as well as the investigation of multiple construction methods for the most efficient utilization of the steel pipeline as well as other facilities already constructed and in place. This is a current conceptual investigation project that will develop into design of the new NPW pipeline as soon as pipeline ownership and right-of-way issues are resolved.

Tuolumne City Sanitary District Sewer Capacity Analysis,

Tuolumne, CA: Acting as the District Engineer for the Tuolumne City Sanitary District, Coleman Engineering provided a capacity analysis of a major portion of the trunk sewer collection system in response to a request for service from a new hotel. The existing sewer collection system was flat and in poor conditions. After calibrating the model to accurately reflect existing conditions, we projected new flows onto several different improved pipe alignments. After analyzing the results, an improvement project was recommended to be required prior to extending an offer of service to the new hotel.

WWTP Disposal Sprayfield Improvements, Tuolumne City Sanitary District, CA: Project Manager for the analysis and upgrades to the Wastewater Disposal Sprayfield used to dispose of treated wastewater from the Tuolumne City Sanitary District WWTP. The sprayfield had fallen out of compliance with operating permit conditions over the years. Regional Board regulators had visited the site and required costly upgrades. Chad negotiated with the Board staff to approve and implement alternative improvements that would bring the sprayfield into compliance at a much more economical cost.

Phase 3 Wastewater Treatment Plant Upgrades, Tuolumne City Sanitary District, CA: As District Engineer, Chad managed all facets of this 0.35 mgd wastewater treatment plant upgrade project including coordination with multiple funding agencies, negotiations with Regional Board permitting staff, coordination with all sub-consultants, and design of the improvements. Major improvements included in this phase of the project included:

- Influent Alkalinity Adjustment Facility
- Sludge Storage Lagoon Improvements
- Sludge Dewatering Improvements
- Disinfection System Improvements
- Automation of DO controls in the aeration basin
- Addition of SCADA controls
- Design of an Office/Shop Building
- Site Grading and Paving design
- Improvements to the disposal sprayfield

Simon N Gray, P.E.

Design Project Manager

Education

BSc (Eng.) (Hons), Civil Engineering, Imperial College of Science and Technology, University of London, United Kingdom

Certificate in Business Administration, Hong Kong Management Association / Wolsey Hall, Oxford, United Kingdom,

Leadership Course, Ashridge Business School, Ashridge, United Kingdom

Registrations

Professional Engineer # 60311, CA

Professional Engineer # 51959, WA

Chartered Engineer # 45101217, United Kingdom

Fellow, Institution of Civil Engineers, United Kingdom

Professional Affiliations

American Water Works Association

Water Environment Federation

Sacramento Area Water Works Association

Mountain Counties Water Resources Association

California Water Environment Association

Simon has 35 years of varied and broad-based technical and managerial experience covering all aspects of project implementation. His career is well balanced, and includes planning studies, condition assessment, design, contracting, project and construction management in the United States and abroad. This extensive experience also includes successful management of multi-discipline 'fast-track' **design build** projects with particular emphasis on constructability and design–construction coordination.

Simon has worked on multi-million-dollar programs as well as on small-scale projects for municipalities and rural communities. He also has heavy civil engineering experience beyond water engineering that includes roads, bridges, power stations, buildings, and airports.

Selected Project Experience

Atherton Drive Water Storage Tank and Booster Pump Station, Manteca, CA: Design Project Manager. Simon was the design phase project manager for this fast-track $5.3 million **design build** project comprising a 3.6-million-gallon capacity welded steel storage tank, a dedicated booster pump station with five 150-hp pumps, piping, and on-site standby power generation. Site improvements, along with water distribution improvements necessary to complete the tank and pump station, were included. The site layout is designed to facilitate future well and a wellhead treatment system.

Point Lisas Seawater Reverse Osmosis (SWRO) Desalination Plant, Ionics, Trinidad, West Indies: Senior Construction Manager. The $120 million, 32 mgd plant is the largest seawater desalination plant currently operating in the Western Hemisphere. Facilities include a major seawater intake pump station; 15,000 linear feet of 42-inch HDPE inlet and outfall pipelines; flocculation / sedimentation tanks and sand filtration basins designed to an ultimate 80 mgd capacity; a two-pass seawater reverse osmosis membrane plant; a major electrical substation; solids treatment; pump stations; chemical storage facilities; and yard piping and conduit. Simon was responsible for overall construction management, including civil engineering construction and installation and commissioning of mechanical / electrical / instrumentation and control facilities. He was also responsible for day-to-day resolution of design and construction questions for the **design build** contractor GEC Ionics.

Strategic Sewage Disposal Scheme Stage 1, Upgrade of Existing Preliminary Treatment Works Contract, Hong Kong Government, Hong Kong: Project Manager. The 'fast track' **design build** contract involved the design and construction of improvements to seven existing preliminary treatment plants around Victoria Harbour, Hong Kong. Improvements included upgraded inlet pumping stations, coarse and fine screen installations, and grit removal facilities. Contract value was $120 million. Simon was responsible for leading a 35-member strong multi-discipline design team that included geotechnical, mechanical, civil, electrical, building services and control engineers for an EPC client-contractor. He carried out constructability reviews in line with the contractor's chosen methods of working, and for design–construction coordination. In addition, he implemented a Quality Assurance System for the project to ISO 9000 series standards.

Strategic Sewage Disposal Scheme Stage 1, Chemical Dosing Facilities Contract, Hong Kong Government, Hong Kong: Project Manager. A chemical dosing facility building with an associated tank farm was constructed on Stonecutter's Island, Hong Kong to provide ferric chloride dosing facilities to the 450 mgd Stonecutters Island WWTP. The three-story building houses polymer tanks, pumps, pipelines, chemical storage facilities, and electrical and control equipment. The **design build** contract value was $18 million. Simon led a multi-discipline design team that included geotechnical, mechanical, civil, electrical, building services and control engineers, and architects for an EPC client-contractor. He was also responsible for constructability reviews in line with the contractor's chosen methods of working, and for design–construction coordination.

Ting Kau Bridge, Hong Kong Government, Hong Kong: Design Project Coordinator and Deputy Project Manager. The Ting Kau Bridge is major cable-stayed road bridge spanning 3,900 feet across the Rambler Channel between Tsing Yi Island and Ting Kau in the New Territories, Hong Kong. The bridge has three 650 feet tall towers. The **design build** contract value was $220 million. Simon was responsible for liaison and co-ordination between structural, geotechnical, mechanical, and electrical, and environmental engineering design teams as part of this 'fast track' design build contract. He coordinated technical design aspects and information to ensure compatibility across project interfaces and with the EPC client-contractor's requirements. Simon also coordinated complex technical issues, in particular ship impact protection to the bridge tower bases.

Eureka Street Bridge, City of Sutter Creek, Amador County, CA: Project Manager. A Core-10 weathered steel bridge was chosen to replace Sutter Creek's old wooden bridge that was washed away during floods in the winter of 1997. Simon completed the design of replacement abutments and supervised their construction, checked the steel bridge

design for the City Engineer, and managed the bridge's installation under a design build contract.

Upper Mountain View Pressure Zone Improvements Project, City of Shelton, WA: Project Manager. Simon was the design and construction phase project manager for this fast-track project that includes construction of a 400,000-gallon elevated water storage tank, yard piping reconfigurations, well and well pump evaluations and upgrades, a 1-million-gallon welded steel ground level reservoir, a booster pump station, over 10,000 linear feet of 12-inch and 16-inch diameter transmission mains, and pressure reducing valve stations. The project included local agency permitting, environmental mitigation for loss of potential Pocket Gopher habitat (a threatened species), constraints from FAA-controlled air space and compliance with funding agency procedures and requirements. Four jack and bore connections were also required for road and stream crossings.

City of Ukiah Recycled Water Project, Phases 1-3, Ukiah, CA: Project Manager. Responsible for fast-track final design of this $22 million project comprising a 66-MG lined open storage reservoir, 3000-gpm vertical turbine pump station, over 30,000 feet of 16- and 12-inch diameter PVC pipelines, and jack-and-bore crossings of creeks, roads, and railroads. Also performed technical review and supervised geotechnical investigation, topographical mapping, permitting, and right-of-way acquisition activities. Assisted in completing State Revolving Fund funding and regulatory agency approvals. Responsible for an associated water balance/zero liquid discharge modeling study to confirm storage requirements and a nitrogen balance study. As an extension to the project, Simon was also responsible for preliminary and final design of replacement chlorine contact basins at the City's wastewater treatment plant.

Sump 55 Pump Station, City of Sacramento, CA: Project Manager. An existing wet well / dry well wastewater station was replaced by a new 11 mgd submersible facility. Simon was responsible as the project manager for the preliminary and final design, and the preparation of bid documents. He also resolved differences between Sacramento Regional County Sanitation District and City staff (who now operate the station) over choice of station type (wet well / dry well vs. submersible). He carried out extensive coordination between City and County agencies, and architectural and landscaping sub-consultants to provide a facility to suit its surroundings in a public park.

Upper Northwest Interceptor Section 8 - Van Maren Pumping Station, Sacramento Regional County Sanitation District, Sacramento, CA: Construction Manager. The $12 million contract included construction of 40 million gallons per day (mgd) submersible wastewater pump station and an associated operations and standby generator building on a constricted urban site. The project also included

construction of 36 and 48-inch diameter pipelines at depths up to 30 feet in residential neighborhoods, and jack-and-bore tunneling under busy City streets. Simon was responsible as the Construction Manager with specific input on change order preparation and negotiation.

Sacramento Area Sewer District (SASD), California, 2015 Pump Station Condition and Performance Assessment, Sacramento, CA: Technical Advisor and QA / QC Reviewer. SASD owns and operates 106 pump stations throughout the Sacramento region. In early 2015, six pump stations were chosen for detailed evaluation due to safety, reliability, maintenance cost, good neighbor, and efficiency concerns. In-field condition assessments and performance tests were performed to identify deficiencies at each pump station. Subsequently, an alternatives evaluation was conducted to analyze four repair categories (refurbish/replace, reconfigure, construct new, or abandon). Results from the alternatives evaluation determined that one pump station could be abandoned and replaced by a gravity sewer, and another could be relocated to a parcel outside of a public road.

South Tahoe Public Utility District, California, "Big 5" Pump Stations Condition Assessment, South Lake Tahoe, CA: Technical Advisor and QA/ QC Reviewer. The study includes in-field condition assessments for five pump stations with capacities up to 5,200 gpm.

Lower Northwest Interceptor Planning and Preliminary Design, Sacramento Regional County Sanitation District, Sacramento, CA: Deputy Program Manager and Design Manager. The $600 million LNWI is a 15-mile long, part force main, and part gravity interceptor sewer. The conduit diameters vary from 84 to 120-inch with peak flows up to 220 mgd. These initial planning stages included route selection and feasibility studies. In addition to his duties as the Deputy Program Manager, Simon was responsible for system-wide preliminary hydraulic design as well as for sub-consultant coordination and management. This 'fast-track' project was notable for its use of decision criteria software and evaluation matrices.

Placer Nevada Wastewater Authority Regional Pipeline, Auburn / Lincoln, CA: Project Manager. Simon was responsible as the project manager for routing studies for 18 miles of 36-inch diameter trunk sewer. Seven existing wastewater treatment plants (WWTP) are to be closed to eliminate treated effluent discharges to local creeks. The new pipelines will connect these existing facilities and convey raw wastewater to the City of Lincoln's new WWTP for treatment. The project also includes wastewater pump stations and force mains, storage, and flow equalization facilities. Simon was also responsible for a routing study for a pipeline to connect the Applegate WWTP to the Regional Pipeline, and for technical input to environmental documents prepared in accordance

with the California Environmental Quality Act (CEQA) and the Federal NEPA.

Mirabel Heights Wastewater Pump Stations and Pipelines, Sonoma County, CA: Project Manager. The project involved the design of two 1.0 mgd capacity submersible pump stations capable of pumping low flows through high static lifts. Simon was responsible for project management; civil and mechanical engineering design; liaison with the local water agency; preparation of loan and grant applications and the production of bid documents and drawings.

South Kowloon Salt Water Pump Station Appraisal, Hong Kong Government, Hong Kong: Project Manager. Simon was responsible for a report into water quality impacts at a saltwater flushing supply intake pumping station in South Kowloon, Hong Kong, which serves 300,000 people. Due to construction of the large West Kowloon Reclamation significantly reducing the size of the water body adjacent to the intake, this water body became heavily polluted due to wastewater-rich storm drain discharges. Serious public health risks were associated with the pollution problem. Simon prepared a major report in 20 working days that included problem identification and quantification, and development of a simple water quality model to predict the likely water quality at the intake. The report also identified and evaluated options to prevent pollution and public health risks with an emphasis on immediate and practical engineering solutions. Simon was subsequently awarded the New World Environmental Award from The Hong Kong Institution of Engineers for the achievements of the project.

Strategic Sewage Disposal Scheme (SSDS) Preliminary Design, Hong Kong Government, Hong Kong: Design Team Leader. The $2 billion SSDS program covered the collection, treatment and offshore oceanic disposal of all wastewater flows from the central urban areas of Hong Kong. The program involved the phased implementation of 40 miles of deep tunnels up to 16.5 ft. in diameter and 600 ft. below ground level; two primary multi-tray wastewater treatment plants (one in a rock cavern); major pumping stations up to 1150 mgd capacity; an immersed tube interim outfall and an eight-mile-long tunneled oceanic outfall that, if constructed, would be the deepest in the world. Peak design flow was 785,000 gpm (1150 mgd). Simon was responsible as the Design Team Leader for population studies and design flow derivation; hydraulics and conveyance system design and optimization; and modifications to 15 existing preliminary treatment plants. He was also responsible for contract administration, bid documentation preparation, supervision-in-chief, claims evaluation and final account preparation for two wastewater sediment sampling and testing programs, a wastewater treatment pilot plant contract, and an oceanic outfall diffuser physical model study contract. He also prepared publicity materials including brochures and

executive summaries for the client and was involved in the production of an information video for the general public.

Greater Cairo Wastewater Project, East Bank Project, Cairo Wastewater Organization, Egypt: Project Engineer. As a member of the East Bank Project pumping stations design team, Simon carried out detailed design for two major pumping stations (one centrifugal, the other Archimedean screw) with respective initial capacities of 340,000 and 315,000 gpm. He also designed a major diversion for four 60" diameter pumping mains, including hydraulic calculations, design of thrust blocks and the selection of pipe material. For the inlet screw pumping station at the Gabal el Asfar wastewater treatment plant, he carried out hydraulic design and designed the pile layout for the pumping station. As a further task, he carried out full structural design for the main inlet chamber to the treatment plant, designed to handle ultimate flows of 1550 mgd. He assisted in the preparation of detailed cost estimates for three East Bank Project multi-million-dollar contracts using contractor's resource-based estimating software.

Southeast Geysers Effluent Pipeline, B Street Pump Station, Lake County Sanitation District, Lakeport, CA: Project Manager. The 10 mgd B Street Pump Station is an in-line booster pump station that forms part of the Southeast Geysers Effluent Pipeline in Lake County. The pump station and pipeline system conveys blended secondary wastewater effluent and water from Clear Lake to the Geysers geothermal complex for steam and power generation. Simon was responsible for project management for the detailed design and bid phases, including bid document preparation, answering bidders' questions, and assisting the client with bid evaluation and detailed contract negotiation.

Brown Street Lift Station Replacement Project, Vacaville, CA: Project Engineer. Simon was the project engineer for the design of a 1.7 mgd submersible wastewater pump station to replace an existing facility. Design responsibilities included pump station and site layout, pump station and discharge force main hydraulics, and facility access design. The station has two independent wet wells.

Wastewater Transfer Study, City of Sacramento and SASD, Sacramento, CA: Engineering and operations and maintenance (O&M) technical analyst for a study that evaluated the potential transfer of wastewater assets between the two agencies, including SASD's sewers and pump stations within City limits, and the City's combined and separated sanitary sewer systems. The assessment included financial, personnel, legal, regulatory, engineering, and operational impacts. Responsible for engineering and O&M elements. Presented findings at three technical and managerial workshops and prepared three chapters of the project report.

Southeast Dorset Wastewater Treatment Plant Program, Wessex Water, United Kingdom: Construction Phase Program Manager. As the program manager, Simon supervised eleven wastewater treatment plant civil, mechanical, and electrical engineering construction contracts for a three-year period in the Southeast Dorset metropolitan area, United Kingdom. He was responsible as the Engineer's Representative under the Institution of Civil Engineers 5th Edition Conditions of Contract for contract administration and construction management on simultaneous contracts upgrading and extending wastewater treatment plants. The total value of the contracts was over $10 million and included final clarifiers; pump stations; aeration tanks; modifications to inlet works structures to include flow splitting and measurement; associated chambers and pipelines; and replacement of streams of surface aerators in sequence. One contract included a six-hour, night shutdown of a WWTP to replace the main plant electrical panel. He was also responsible for claims evaluation and negotiation, and for preparation of final contract accounts.

Banner Cascade Pipeline Project (EIR Phase), Nevada Irrigation District, Grass Valley, CA: Project Manager. The project involves the replacement of the Lower Cascade Canal with seven miles of 36, 48 and 54-inch diameter raw water transmission pipeline in rural Nevada County, and the preparation of a full Environmental Impact Report in accordance with CEQA. Simon was responsible as project manager and for engineering components, technical review, sub-consultant management and cost estimating. During the public review period for the Draft EIR, he also participated in public forums and in detailed "question and answer sessions" with the public and the District Board.

Banner Cascade Pipeline Project (Design Phase), Nevada Irrigation District, Grass Valley, CA: Program Manager. Simon was responsible as the program manager for the preliminary and detailed design phase for the project detailed above. The project has an estimated final construction cost of $23 million at 2010 prices. As program manager, he had overall responsibility for management of four teams covering pipeline and hydropower plant design; right-of-way acquisition, environmental permitting, topographical survey, public consultation; project controls; cost estimating, and the ISO 9000 quality assurance / technical review team.

Lagoi Water Treatment Works, Bintan Resorts, Bintan Island, Indonesia: Project Manager and Principal Design Engineer. The project included provision of a second 1.5 mgd treatment stream to the surface water treatment plant, and included chemical dosing, mixing, clarification, gravity sand filtration, chlorination for disinfection and sludge treatment, and pumping facilities. As the project manager and principal design engineer, Simon supervised design of the plant extension and preparation of bid documents.

Reservoir 12 Project, El Dorado Irrigation District, El Dorado County, CA: Project Manager. The project involved a study of alternatives for replacement of an eight-million-gallon open treated water storage reservoir. Twin prestressed concrete reservoirs were recommended by the study. Simon took over the role of project manager, carried out the final technical review and prepared the Study final report.

Lakeside Drive Water Main Replacement Project, Valley of the Moon Water District, Sonoma, CA: Project Manager. A small private residential development to the west of the City of Sonoma required an extension and upgrade of its existing water mains in order to comply with fire flow capacity regulations, and to remove inaccessible 'back lot' connections. Simon was the project manager for the investigation and detailed design phases of the project that included the preparation of bid plans and specifications.

BENJAMIN CRAWFORD, P.E. G.E

GEOTECHNICAL, CRAWFORD & ASSOCIATES, INC.

Crawford & Associates, Inc.

CONTACT INFO
- 916-455-4225
- ben.crawford@crawford-inc.com

TOTAL YEARS OF EXPERIENCE IN DESIGN & CONSTRUCTION OF PUBLIC WORKS PROJECTS
- 16

TIME COMMITMENT
- 80%

LICENSE & REGISTRATIONS
- Civil Engineer
  # C 68457, CA
- Geotechnical Engineer
  # C GE2861, CA

EDUCATION & TRAINING
- B.S. Civil Engineering California Polytechnic State University, San Luis Obispo, 2002

CAREER SUMMARY

Ben Crawford is the Founder and President of Crawford & Associates, Inc. He is a graduate of California Polytechnic State University, San Luis Obispo, with a concentration both in Geotechnical Engineering and Hydrology. He has managed complex water and wastewater projects throughout Northern California, including tanks, wells, pipelines, pump stations and Water/Wastewater Treatment Plants. Ben has over 16 years of experience providing geotechnical recommendations for bridges, roadways, pavement rehabilitation, and transportation projects, schools, residential and commercial structures, water and communication towers, retaining walls, and airports.

RELEVANT PROJECT EXPERIENCE

» **Atherton Tank and Pump Station – Manteca, San Joaquin County, CA:** Ben Crawford and the CAInc team prepared geotechnical recommendations for the Atherton Tank and Pump Station (formerly Manteca Well 26 and Booster Pump Station). The project consisted of three new booster pumps and a 90-foot diameter steel water storage tank. Performed detailed settlement calculations and determined that an over excavation and recompaction of the near surface loose sands would be required. Provided foundation recommendations for a reinforced concrete mat foundation and perimeter ring foundation. In 2013, the City of Manteca upgraded the project to include a 150 ft. diameter, 33 ft. tall, 3.6-million-gallon steel water tank founded on a perimeter ring foundation; a dedicated booster pump station, piping and standby on-site electrical generation. The project has been completed utilizing design/build delivery. CAInc completed the design/build process and worked with the City, Design Team and Contractor to update our recommendations during construction.

» **Del Rio Tank, Pump Station, and Basin – Modesto, Stanislaus County, CA:** Ben was the principal-in-charge of the Del Rio Tank and Pump Station projects which included a new ¼ million-gallon water tank, well, booster pump station and building, overflow basin, 2,500 lineal feet of pipeline including jack-and-bore under the existing railroad tracks. Oversaw the field exploration, laboratory-testing program, performed foundation and settlement calculations, and oversaw the preparation of the Geotechnical Report for the project.

Frisch Engineering, Inc.

CONTACT INFO
- 916-353-1025
- tfrisch@frischengineering.com

TOTAL YEARS OF EXPERIENCE IN DESIGN & CONSTRUCTION OF PUBLIC WORKS PROJECTS
- 27 years

TIME COMMITMENT
- 100%

LICENSE & REGISTRATIONS
- Professional Electrical Engineer Reg. CA E15761

EDUCATION & TRAINING
- B.S. Electrical Engineering, University California Los Angeles, 1991

THOMAS FRISCH, P.E.

ELECTRICAL|SCADA/ FRISCH ENGINEERING, INC.

CAREER SUMMARY

Mr. Thomas Frisch has worked in the water/wastewater/power/landfill industry since 1991 and has developed skills in power, controls, instrumentation and communications. He has become very familiar with most practices and processes used in this industry. His experience is diverse since he has worked as a Contractor and Consultant in various capacities. As a Contractor, he brought contract drawings to completion by designing the final details, making submittals and managing production. As a Consultant, he has designed over 250 water and wastewater projects ranging from small pump stations to large scale treatment plants. Consequently he has a high degree of product knowledge that enables him to minimize design exposure to unproven materials or practices. He knows the challenges that Contractors face in taking plans to construction and knows when to assist on behalf on the Owner. His designs for electrical, instrumentation, and telemetry systems have been very successful with near-zero change orders due to design flaws. His designs include complex PLC motor controls for booster pump stations, lift stations and motor operated valves and SCADA telemetry between pump stations and tanks. He has performed electrical studies such as a damage assessment or to determine system capacity and cost comparisons to determine electrical operational costs of VFDs vs. throttled fixed speed motors.

RELEVANT PROJECT EXPERIENCE

SCADA

- **San Juan Water District SCADA System**
- **SMUD Carson Power Plant**
- **City of Galt WWTP Tertiary Improvements**
- **City of Galt SCADA System**
- **City of West Sacramento SCADA System Improvements**
- **City of Lincoln SCADA System**

Water

- **City of Galt, Industrial Park Reservoir and BPS**
- **Trinity Center WTP**
- **Lewiston RW Pump Station, WTP, and Tank**
- **California Water Service, Lucerne WTP**

Brad Friederichs, S.E.

Professional Registration

California Structural Engineer, S2780

Education

B.S. Civil Engineering with honors, California State University, Sacramento, 1979

Professional Affiliations

President, Structural Engineers Association of Central California

American Society of Civil Engineers

American Concrete Institute

American Institute of Steel Construction

References

Mr. Jim Niehues, president, Yolo Machinery Company, Woodland, CA 530-661-1288 (numerous projects)

Mr. Gary Bechtel, Vice President, Gateway Pacific Contractors, Inc., West Sacramento, CA 916-665-4100 (West Sacramento Water Tank, Nevada Irrigation District Pump Station)

Mr. James Lindegaard, Facilities Engineer, Broadridge Company, El Dorado Hills, CA 916-221-8498

Brad Friederichs has 39 years' experience as a structural engineer for wastewater, water treatment, commercial, industrial, agricultural, retail and residential structures. His expertise is in cast-in-place concrete, prestressed concrete, steel, wood and masonry construction. His specialty is in producing completely detailed, contractor friendly, value-oriented construction documents resulting in projects that bid well with few change orders.

PROJECT EXPERIENCE related to Water/Wastewater/Stormwater Projects

EID On-Call Structural Engineer Project structural engineer for six sewer lift station rehabilitation projects consisting of a new concrete slab and a precast slab over existing FRP wet wells. Projects are Carson Creek, Waterford, Bridlewood, Southpointe, Carson Creek Ph II and Eastridge. Work in-progress.

EID El Dorado Hills WWTP Odor Control Project A cast-in-place concrete slab for new biofilter media and a catwalk for the foul air duct at the primary clarifier. Drawings completed in 2015.

EID El Dorado Hills WWTP Digester Lid Evaluation and Rehabilitation Investigate and repair rock pockets and voids due to pour consolidation in the newly constructed 60 ft diameter prestressed concrete digester lid. Prepare repair plans and inspect the construction for rehab of the lid in 2009.

Folsom Plan Area, Stormwater Structures and Retaining Walls Off-site and on-site improvements for hydropneumatic control structures, junction boxes, manholes and retaining walls. Cost: $5 million. Currently under construction.

Placer County Water Agency Gold Run Pipeline Pump Station Structural engineer for a 15 ft x 40 ft CMU building on a stepped concrete foundation in 2013. The foundation system has an integral wet well. Cost: $150,000

Placer County Water Agency I-80 Bluff Improvements Structural engineering for 75 lin. ft x 18 ft max. high tieback wall. The wall is constructed with steel piles, prestressed tiebacks and precast concrete infill panels in 2010. Cost: $1.5 million

Placer County Water Agency Monte Vista Intake Structure Structural engineer for cast-in-place concrete structures consisting of a canal intake, screen and tank foundation. The approximate plan dimensions are 30 ft x 30 ft x 10 ft high in 2010. Cost: $1 million

West Sacramento 2 MG Water Tank Foundation and Pump Station Structural engineer for an auger cast pile and concrete mat slab foundation for the steel tank. Structural design for a 30 ft x 80 ft CMU building also placed on auger cast piles. The piles reduce settlement due to liquefaction in 2015. Cost: $10 million. References: Gary Bechtel, Gateway Pacific General Contractor, Sacramento, CA 916-664-4100 ext 113

Lincoln New Wastewater Treatment Plant, Lincoln, CA Structural engineer for clarifiers, DAF, filter, influent junction structure, influent lift station, plant water pump station, RAS pump station, reaeration basin, solids holding basin, oxidation basin (75'x150'x20' deep). All structures are below grade and constructed of cast-in-place concrete in 2002. Cost: $80 million

Cal Am Water Lincoln Oaks 1.5 MG Tank Review and Pump Station Structural engineer for review of the tank and design for 26 ft x 35 ft CMU pump station with wet well in 2014. Cost: $5 million

Georgetown PUD Greenwood Reservoir 1.5 MG Tank Foundation and Pump Station Structural engineer for foundation design of the tank and for multiple cast-in-place concrete structures and a two-story, CMU building for office, shop and supplies in 2010. Cost: $5 million

Callamont Estates, Washoe County, NV 500,000 gallon Water Tank Structural design for a 72 ft dia. x 21 ft high cast-in-place concrete buried water tank in 2010. Cost: $1.5 million

Sigerson Architects Resume

November 5, 2018

Company Profile

Sigerson Architects is a one-person full service architectural firm in Fair Oaks, California. I am a former journeyman carpenter and construction superintendent. I received my professional degree in architecture from the University of Southern California after studying in Florence, Italy. I have been in practice on my own since 1999. I delight in providing architectural service to clients and pride myself on excellent communication skills and a high level of professionalism.

Project List

U.C Davis Hutchison Hall Lab Remodel. Davis, California
A 3,000 square foot remodel of existing lab space for a new plant pathology research scientist. All new casework, plumbing, mechanical, electrical & finishes.

Blue Diamond Builders Oil Roasting Facility. Sacramento, California
A 15,000 square foot renovation of existing industrial space for a new Oil Roasting process area. All new equipment, mechanical, electrical, finishes and accessibility upgrade within a historic multistory structure.

Millennium Center. Vacaville, California
A new ground up, 16,000 square foot, one story courtyard office building with a licensed childcare facility. A metal building system was employed and adapted for traditional finishes of stucco exterior and gypsum wallboard interior. All new construction from ground up.

Crest Theater Empress Tavern Restaurant. Sacramento, California
A 7,000 square foot remodel to create a new restaurant in the basement of a historic theater. All new construction and coordination of extensive renovation of mechanical and electrical systems to service a below grade commercial facility.

Arroyo Pump Station Upgrade and Addtion. Pasadena, California
An addition to an existing pump station for the City of Pasadena Public Works Department to include demolition, new walls, finishes, plumbing, mechanical and electrical fixtures and equipment.

American River Pump Station Upgrade. Auburn, California
A new building to provide electrical equipment for an existing water intake facility at the American River. All new concrete masonry building with steel frame roof system.

Services Provided by Sigerson Architects

As-built documentation
Programming
Site Analysis
Site Design
Architectural Design
Structural Design
Interior Design
Energy Compliance
Energy Efficient Design
Permit Processing
Bidding Coordination
Construction Phase Observation

Principal Architect

Saxon Sigerson AIA
Architect
CA License #C25404
Sigerson Architects
7940 California Avenue, Suite 4
Fair Oaks, CA 95628

(916) 863-6470
saxon@sigersonarchitects.com

Annual dollar volume of projects is approximately $5,000,000
Annual number of projects is approximately 20-30.

MARK H. WEHBER, P.L.S.

Mr. Wehber has over 30 years of land surveying experience with 18 years on projects located throughout Northern California. Mr. Wehber has worked extensively on land development projects along with public right-of-way and survey projects. Mr. Wehber has a special expertise in the preparation and implementation of quality assurance and quality control procedures for large surveying projects and managing client and project needs from initialization to completion.

AEROJET / GENCORP
Folsom, California

- 6,000 acres of public, private transit oriented development including 3,400 Residential Units and 4.3 million square feet of commercial property
- Delineation of one of the first nationwide superfund sites being re-developed,
- Coordination of two new light rail stations.
- Coordination with agencies including State, County and Local for Right of way purposes.
- Topographic, tree and boundary survey of entire site.
- Assist client with easements and restrictions for sensitive blast area zones.
- Prepare lot line adjustments

CITY OF BRENTWOOD
Brentwood, California

- New Vertical Control Network and Benchmark System
- Tentative Maps, Final Maps, and Condominium Plans
- Commercial Development Projects
- Liberty High School Topographic Survey

HUNTERS POINT PHASE I/II
Lennar Urban
San Francisco, California

- Former Naval Shipyard
- Assist Lennar with clearing title of existing easements for parcels in Phase 1.
- Peer Review of the Grading and Infrastructure Plans for the Hillside and Hilltop / Hillside Development Areas of Phase 1, resulting in cost saving improvements.
- Site Improvement and Grading plans for the Phase 1 Welcome Center
- Tentative Maps, Final Maps and Lot Line Adjustments

VISTA TULOCAY
City of Napa
Napa, California

- Boundary Survey
- Topographic Survey
- Construction Staking
- FEMA Applications
- Tentative Site Plans for Apartment Units

CREDENTIALS

Education

Associates Degree
Bergen Community College, Paramus, New Jersey

Municipal Engineering Construction Inspection Certification
Rutgers State University, New Jersey

Registration

Professional Land Surveyor,
California No. 7960

Total Professional Experience

30 Years

Kevin Ford, PMP | Project Manager

With over 15 years of experience in automation systems, Mr. Ford is an accomplished automation professional who possesses the skills, tact, and experience to lead a project to successful completion. Mr. Ford is responsible for guiding teams to achieve project objectives while ensuring on-time and on-budget delivery. As the liaison with key stakeholders, he ensures clear communications and effective collaboration. Mr. Ford has experience managing large projects requiring planning, personnel placement, contract implementation, contract negotiation, Requests for Information and Change orders, variance analysis, budget regulatory measures, and construction meetings.

Key Responsibilities:

- Responsible for the overall successful implementation and execution of projects, ensuring they are on time and within budget.
- Primary liaison for assigned projects, communicating, collaborating, and negotiating with key project stakeholders.
- Assesses project requirements and deliverables, establishes project schedule needs, coordinating resources, managing subcontracts.
- Acting as the project's delegate for approach, planning, scheduling, negotiating, and general decision making.

PROJECT ADMINISTRATION & MANAGEMENT

SPECIALIZATION:
INSTRUMENTATION AND CONTROLS

Fields of Special Competence
Maintaining Contractual Obligations and Coordinating Project Requirements

Education
B.A. in Environmental Science, California State University, Sacramento

Certifications
- Project Management Professional
- Certified Project Manager URS
- OSHA Hazardous Waste

16 Years of Experience | **6** years at TESCO

REPRESENTATIVE PROJECTS

NORTH TAHOE PUBLIC UTILITY DISTRICT

National Ave. Water Treatment Plant Improvements – Phase 1

Project Manager: This design-build project for NTPUD involved designing a new turn-key, hot-standby Ignition SCADA system. TESCO was responsible for providing redundant SCADA server hardware as well as redundant HMI, Historian, and Database software. The SCADA system migration involved manually porting all existing SCADA system configurations and functions of the predecessor system. TESCO was responsible for providing communications between the two SCADA locations by means of T1 line in addition to configuring the hot-standby SCADA applications to utilize existing radio connections. TESCO also configured HMI screens, redundancy, and fail-over between the SCADA server systems. Finally, TESCO was responsible for the system's design, networking, manufacture, installation, startup, and training of the entire system.

SOUTH COUNTY REGIONAL WASTEWATER AUTHORITY

Plant Expansion for Gilroy WWTP

Project Manager: TESCO was involved in the original South County Regional Wastewater Authority (SCRWA) plant expansion for the Gilroy Wastewater Treatment Plant (WWTP) that involved major plant upgrades in instrumentation and control systems, including upgraded PLC and SCADA systems. TESCO performed on-site services at the Gilroy WWTP to provide system diagnostics and modifications, fiber-optic network troubleshooting, diagnostics, tuning, and repairs, system upgrade designs, and implementing a SCADA system upgrade to Rockwell Automation's FactoryTalk. The SCADA system utilizes the fiber optic network for communications to remote plant Allen-Bradley ControlLogix process controllers. TESCO was responsible for engineering, equipment supply, programming, field diagnostics, existing system modifications, integration, field testing, startup, and operator training.

CITY OF DAVIS

Secondary & Tertiary Improvements

Project Manager: This design-built project for the City of Davis involved designing and implementing a new hot-standby Inductive Automation Ignition SCADA system. The City accesses their system via multiple operator workstation computers as well as portable tablets via Remote Desktop Protocol (RDP). TESCO was responsible for providing redundant SCADA server hardware as well as redundant HMI, Historian, and Database software. The SCADA system migration involved manually porting all existing SCADA system configurations and functions of the predecessor SCADA system. TESCO was additionally responsible for providing new Motor Control Centers (MCC), Variable Frequency Drives (VFD), and ControlLogix Programmable Logic Controllers (PLC). TESCO was responsible for the system's design, networking, manufacture, installation, startup, and training of the entire system.

FONTANA WATER COMPANY

Various Projects

Project Manager: TESCO has been providing Fontana Water Company with design-build services for the last 20+ years. The Fontana SCADA System is comprised of hot-standby Wonderware SCADA servers with an independent Historical Database Server (HDS). The plant monitoring and control system is comprised of three in-plant PLCs located at the Sandhill WTP communicating via hardwired Ethernet directly to the SCADA system. The water distribution monitoring and control system is comprised of 45 remote PLCs communicating via an Ethernet RF network. Each PLC provides independent localized monitoring and/or control regardless of the central computer status.

Steve Brown

Title
Principal

Education
B.S. in Business Administration-Marketing, California State University, Chico

B.A. in Geography, California State University, Chico

Experience
25 years

Affiliations
Association of California Water Agencies

California WateReuse Association

Summary

Steve Brown has over 25 years of experience specializing in providing environmental, regulatory, and public relations support for a variety of water resources, engineering, solid waste, and energy projects. He has direct experience in preparing environmental compliance documents to meet the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements, conducting management audits, following legislative and regulatory changes for clients, and coordinating public involvement programs for a wide variety of public and private projects.

Steve's broad background includes a strong understanding and knowledge of the institutional framework for allocating and managing water resources in California and the western United States. He has extensive experience and expertise in working on large, complex and controversial water resources projects including water supply development; flood control; groundwater recharge and conjunctive use; water transfers and exchanges; pipeline and conveyance; water treatment plant expansion; and wastewater reclamation and recycling.

In particular, Steve has significant experience and expertise in successfully completing environmental compliance documentation and obtaining all of the necessary federal, state, and local regulatory approvals for water and wastewater resources projects and has helped clients receive over $50 Million in grants and low interest loans from the State Revolving Fund grant and loan program in the last 7 years.

Relevant Experience

Reservoir Replacement Project, Napa Sanitation District
Project Manager. Steve prepared an Initial Study Mitigated Negative Declaration for the Napa Sanitation District's Reservoir Replacement Project to meet the CEQA-Plus requirement to obtain funding through the State Revolving Fund Loan Program. . The primary purpose of the Proposed Project/Action is to install reservoir liners to maximize the volume of the District's two existing reservoirs in order to provide increased reliability of recycled water during periods of peak demand.

The District stores treated recycled water in two reservoirs located to the east of the headworks building at the Soscol Water Recycling Facility. The reservoirs have a maximum capacity of 9.5 million gallons. However, filling the reservoirs to their maximum capacity of approximately 9.5 million
und the perimeter wall, which limits the ability to meet peak demands. In order
rict currently only stores approximately 6.5 million gallons. Specifically, the

reservoirs are approximately 13-feet deep from the bottom up to the stem wall where the leaking occurs. A review of the operational data for the past two years demonstrates that the District has not filled the reservoirs beyond the stem wall in order to prevent leaking. More importantly, the potential wetlands to the north are not dependent upon the reservoirs leaking. The Proposed Project/Action proposes to install reservoir liners that will maximize and reestablish the useful volume of the existing reservoirs and provide approximately 3 million gallons of restored treated water storage to increase reliability during periods of peak demand. Steve completed the CEQA-Plus IS/MND within 10 weeks and it was approved by the District in January 2017. The district is receiving over $3 million in SRF funds from the State Board.

Hayward Recycled Water Project, City of Hayward

Project Manager. Steve prepared the IS/MND and EA/FONSI (i.e. CEQA-Plus document) for the City of Hayward's Recycled Water Project. The Proposed Project consists of installing a new Recycled Water Facility (RWF) located at the City's Water Pollution Control Facility (WPCF) at 3700 Enterprise Avenue, Hayward, California. The RWF would deliver an estimated 290 acre-feet per year of recycled water to 24 customers within the City of Hayward. The RWF will be served by approximately one and half 1.5 miles of new distribution lines (ranging in diameter from 6 to 8 inches) to the north and south of the WPCF, rehabilitation and connection to an existing and abandoned Shell Oil Pipeline, and over three (3) miles of laterals to customers, including installation of customer connections. The majority of recycled water customers will utilize the recycled water for irrigation, with some industrial uses for cooling towers and boilers. Steve also helped the City obtain over $10 million in funding from the State Board and the U.S Bureau of Reclamation under the Clean Water State Revolving Fund Loan Program and the Title XVI program. Steve is providing additional consulting support to assist the City with the preparation of an Addendum to the IS/MND for a small project addition within the WPCF.

Pleasanton Recycled Water Project, City of Pleasanton

Project Manager. Steve prepared the IS/MND and EA/FONSI (i.e. CEQA-Plus document) for the City of Pleasanton's Recycled Water Project. Previously, SMB managed and prepared the Environmental Issues and Constraints Report for the City's Recycled Water Project as part of the feasibility study effort. The Proposed Project/Action includes the upgrade and expansion of Dublin San Ramon Sanitation District's (DSRSD) existing wastewater treatment plant (WWTP) to provide a recycled water supply of approximately 2,500 afy to meet recycled water demand in the City's service area and offset deliveries from the city's groundwater supplies and water supply purchases from Zone 7. The Proposed Project/Action also includes the construction of up to approximately 20- miles (103,100 linear feet) of pipeline ranging in diameter from 6-inches to 36-inches as well as the conversion of the existing Tassajara Reservoir to a recycled water storage facility. Steve helped the City obtain over $15 million in funding from the State Board and the USBR under the CWSRF program and the Title XVI program. Construction of the Project was completed in 2016.

Los Carneros Recycled Water Pipeline Project, Los Carneros Water District

Project Manager. Steve prepared an IS/MND and EA/FONSI (i.e. CEQA-Plus document) on the Los Carneros Recycled Water Pipeline Project that proposes to construct a n approximately 12-mile recycled water pipeline to serve the 5,700 acres of agricultural land within the District. The Proposed Project would consist of a 6- to 24-inch pipeline system that would connect to the planned 24-inch recycled water pipeline to serve the Stanly Ranch/St. Regis area from the Napa Sanitation District's Imola Wastewater Treatment Plant. The Los Carneros Project would connect to the end of the Stanly Ranch/St. Regis pipeline and construct a new pipeline system from that point on for approximately 12 miles up and through the District. The proposed pipeline system would be located within existing roadway and would not require any pump stations or storage facilities. The Proposed Project would serve approximately 140 parcel or 3,400 acres of

irrigable land within the District with a recycled water supply that meets Title 22 requirements of approximately 1,650 acre-feet per year. The document was sent out for the required 30-day public review on December 19, 2013 and was adopted by the Board on February 11, 2014. Steve helped the City obtain over $19 million in funding from the State Board and the USBR under the CWSRF program and the Title XVI program. Construction was completed in October 2015.

Ukiah Recycled Water Project, City of Ukiah

Project Manager. Steve prepared an IS/MND and EA-FONSI (i.e. CEQA-Plus document) for the City of Ukiah's proposed Recycled Water Project. The purpose of the Proposed Project is to replace/augment existing water supplies in Ukiah Valley. Recycled water use within the Ukiah Valley would offset existing and future water demands for irrigation and frost protection of agricultural land, and in doing so, would support the local agricultural industry. It would also offset urban irrigation demands, ease storage limitations at the Ukiah Wastewater Treatment Plant (UWWTP), and reduce treated wastewater discharges to the Russian River. The Proposed Project was developed through an extensive engineering and feasibility study process, culminating in a recommended or preferred alternative. The basis for the Proposed Project for the environmental analysis is identified as the Preferred Alternative in Chapter 7 of the City's February 2012 *Recycled Water Master Plan*. The Proposed Project/Action would consist of 9.4 -miles of recycled water pipeline ranging in size from of 8- to 16-inch to provide recycled water from the City's existing Ukiah WWTP to approximately 990 acres of agricultural and urban landscape irrigation lands within the Ukiah Valley. Specifically, a total of 44 parcels covering 703 acres would be supplied with 1,234 AFY of recycled water for irrigation purposes. In addition, about 284 acres would be supplied with 142 AFY of recycled water for frost protection. The Initial Study/Mitigated Negative Declaration was certified and adopted by the City Council on June 5, 2013. Steve is currently assisting the City in securing approximately $19 million in SRF funds.

Mountain View Recycled Water Project, City of Mountain View

Project Manager. Steve managed and prepared the Environmental Issues and Constraints Report for the City of Mountain View's Recycled Water Project. The Proposed Project/Action is for the expansion of the City's existing Recycled Water Project to provide an additional approximately 1,125 afy to meet recycled water demand in the City's service area through 2035. The Palo Alto Regional Water Quality Control Plant (RWQCP) will produce all of the recycled water. The Proposed Project/Action includes the construction of up to approximately 8 miles (42,800 linear feet) of pipeline ranging in diameter from 6-inches to 24-inches. The pipeline facilities would be located primarily in existing roadways. In addition, the Proposed Project/Action will also include the construction of two (2) storage tanks (i.e. 1.6 million gallons (mg) and 2.9 mg) and six (6) pump stations.

Folsom Water Supply and Conveyance Project, City of Folsom

Project Manager. Steve managed the preparation of the environmental impact report/environmental impact statement (EIR/EIS) for the City of Folsom's proposed Water Supply and Conveyance Project to serve the planned Folsom Specific Plan Area. The proposed development consists of 10,093 dwelling units on approximately 3,600 acres of land located south of Highway 50 and currently lacks a sufficient water supply. The City is proposing to acquire the water rights totaling 8,000 acre-feet of water per year (AFY) from the Natomas Central Mutual Water Company (NCMWC) and conveying it to the Folsom Specific Plan Area. Steve identified and evaluated the environmental impacts of the various alternatives to get the water to the Folsom Specific Plan Area. This analysis was incorporated into the overall EIR/EIS to meet both CEQA and NEPA requirements. The City certified the document on June 14, 2011.

New Tanner Water Treatment Plant Project EIR, Amador Water Agency

Project Manager. Steve managed the preparation of the environmental impact report for the proposed New Tanner Water Treatment Plant Project. The purpose of the project is to replace both the existing Tanner and Ione conventional water treatment plants with a single microfiltration water treatment facility to achieve improved water quality, lower long-term operational and maintenance costs, provide operational flexibility, and meet future and potentially more stringent water quality requirements.

Folsom Lake Temperature Control Device Project EIR, El Dorado Irrigation District
Project Manager/Director. Led the team that prepared the EIR for the El Dorado Irrigation District (EID) on its Folsom Lake Temperature Control Device (TCD) Project. He prepared the environmental document on a fast-track basis within budget. The fast-track EIR was prepared on-budget and within five months from notice to proceed, allowing EID to certify the EIR and approve the project.

San Francisco Bay Division Pipeline 3 and 4 Crossover Facilities, San Francisco Public Utilities Commission
Environmental Project Manager. Steve managed the preparation of the Initial Study/Mitigated Negative Declaration for the San Francisco Bay Division Pipelines 3 and 4 Crossover Facilities Project. The project involves the construction of three crossover facilities to interconnect the San Francisco Public Utilities Commission's (SFPUC's) Bay Division Pipelines Number (No.) 3 and No. 4 to improve system reliability in the event of an earthquake. Crossover valves and connections would be constructed within subsurface, concrete - lined vaults, which would be approximately 61 by 35 feet in area and 20 feet deep. An emergency generator, propane tank, and communication equipment would be installed on two concrete pads adjacent to each vault, and at one location (Guadalupe River site), a third pad would support a transformer.

The People's Moss Landing Water Desalination Project EIR, Moss Landing
Project Director/Manager. Steve is managing the preparation of The People's Moss Landing Water Desalination Project EIR. The purpose of the Proposed Project is to provide the Monterey Peninsula Area in Monterey County California with a safe and reliable water supply of up to 12,577 afy to offset mandated water supply diversion curtailments on the Carmel River and Seaside Basin and to meet the future water supply demands in the Monterey Peninsula area.

Jamieson Canyon Water Treatment Plant Improvements Project EIR, City of Napa
Project Director/Manager. Steve managed the preparation of an environmental impact report (EIR) for the proposed improvements to the City of Napa's Jamieson Canyon Water Treatment Facility (JCWTP). The goals and objectives of the proposed project are to upgrade and expand the existing 12 million gallon per day (mgd) plant to have an average treatment capacity of 20 mgd and a hydraulic peak hour treatment capacity of 24 mgd. These upgrades would enable the city to consolidate its current operational practices and costs from two other city-owned water treatment plants and operate the JCWTP predominately throughout the year. In addition, expanding the JCWTP would also allow the City to use and treat a greater portion of its allotment of State Water Project (SWP) water supplies that are delivered through the North Bay Aqueduct (NBA). The ability to more fully use its NBA water entitlements would enable the city to meet current and projected demands based on General Plan build-out in 2020 and provide contingencies for drought-proofing the city's water supplies.

Harbor View Reservoir Replacement Project – Initial Study, City of Martinez
Project Director/Manger. Managed preparation of an Initial Study for the replacement of the City of Martinez's Harbor View Reservoir.

Fidel Electric, Inc
428 N.Buchanan Circle # 4
Pacheco, CA 94553
Ph: (925)687-1449
Fax: (925)687-1495
E-mail: APFelectric@aol.com
LIC#C10-895636

Resumes of Proposed Key Personnel

Anthony Fidelus / CEO

Anthony is 40 years experienced Electrician and CEO of Fidel Electric. He graduated from Technical Electrical Trade School, Krakow, Poland.
He has worked on and managed project since 1976. Most of the projects include oil refineries, water/wastewater pumping stations.
Current duties include office and project management.

Paul Fidelus / CFO

Paul is 25 years experienced Electrician and CFO of Fidel Electric. He has AA degree in General Studies from Palomar College, San Marcos, CA (1994-1997).Also, he graduate from ABC Electrical Trade School (1999-2003) and possess Electrical Journeymen Certificate. He is a field manager of all Fidel Electric projects overlooking quality and performance. Some of the project include: Booster Pump Stations to improve water pressure and water quality in pipe line. Pump Stations to increase capacity of water supply including Fire Protection. Construction of Waste Water storage facility including-odor control, blowers, ventilation and process control.

References:

James Larot, P.E.
Associate Engineer, Construction Department
Contra Costa Water District
2411 Bisso Ln.
Concord, CA 94524
Phone: (925) 688-8309

Todd Beecher, P.E.
Beecher Engineering, Inc.
90 Copper Cove Drive, Suite D
Copperopolis, CA 95228
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LIC#C10-895636

Chris DeVette
Project Manager

Aztec Consultants
2021 Omega Road, Suite 200
San Ramon, CA 94583
Phone: (925)837-1050

List of completed Projects:

1. **Project Name** : Inline Booster Pump Station
   City of West Sacramento
   Owner Rep: Fred Tadewaldt, P.E.
   Phone #: (916) 826-3365
   Year Completed: March 2009
   Contract Amount: $1,228,730.00

2. **Project Name:** Gregory Gardens Pump Station
   Contra Costa Water District
   Owner Rep: James Larot
   Phone #: (925) 688-8000
   Year Completed: July 2011
   Contract Amount: $241,000.00

3. **Project Name:** Pump Station D & E
   EBMUD
   Owner Rep: Steve Savage
   Phone #: (866) 403-2683
   Year Completed: December 2012
   Contract Amount: **$** 482,000.00

4. **Project Name:** DAF Tanks Renovation
   Central Contra Costa Sanitary District
   Owner Rep: Brad Leidecker
   Phone #: (925) 228-9500
   Year Completed: November 2014
   Contract Amount: $ 198,000.00

5. **Project Name:** MST Recycled Water & Booster Pump Station
   City of Napa
   Owner Rep: J.D. Brosnan
   Phone #: (925) 933-2300
   Year Completed: April, 2016
   Contract Amount: $ 403,000.00

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SAFETY PLAN

INJURY AND ILLNESS PREVENTION PROGRAM
GSE Construction Co. Inc.

RESPONSIBILITY

The Injury and Illness Prevention Program (IIPP) administrator, Tim Almberg has the authority and responsibility for implementing the provisions of this program for GSE Construction Co. Inc. All managers, supervisors and lead personnel are responsible for implementing and maintaining the IIPP in their work areas and for answering worker questions about the Program. A copy of this IIPP is available in Accessible from GSE Construction Management computer on site, GSE Construction Co. Inc. main office (6950 Preston Ave. Livermore, CA 94551), GSE Construction Co. Inc. So Cal office (26027 Huntington Lane, Unit D ▪ Valencia, CA 91355).

COMPLIANCE

Management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by all employees. Supervisors and lead personnel are expected to enforce the rules fairly and uniformly.
All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment.
The following is our system of ensuring that all workers comply with the rules and maintain a safe work environment:

- Informing workers of the provisions of our IIPP;
- Evaluating the safety performance of all workers;
- Recognizing employees who perform safe and healthful work practices. This recognition is accomplished by: Verbal recognition. We also randomly choose an employee who is consistently performing safe work practices, and following policy and procedures, and give them a gift card (restaurant, movie theater that they can share with their family;
- Providing training to workers whose safety performance is deficient;

- Disciplining workers for failure to comply with safe and healthful work practices. The following outlines our disciplinary process: When it becomes necessary, our company reserves the right to discipline employees who knowingly violate company safety rules or policies. Disciplinary measures will include, but are not limited to: 1)· Verbal warning (documented) for minor offenses. 2)· Written warning for more severe or repeated violations. 3)· Suspension without pay, if verbal and written warnings do not prove to be sufficient. If none of the above measures achieve satisfactory corrective results, and no other acceptable solution can be found, the company will have no choice but to TERMINATE employment for those who continue to jeopardize their own safety and the safety of others.
- Other means that we use to ensure employee compliance with safe and healthful work practices include: Management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by all employees. Managers and superintendents are expected to enforce the rules fairly and uniformly. All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment. Our system of ensuring that all workers comply with the rules and maintain a safe work environment include: 1. Informing workers of the provisions of our IIP Program; 2. Evaluating the safety performance of all workers; 3. Providing training to workers whose safety performance is deficient; 4. Disciplining workers for failure to comply with safe and healthful work practices;

COMMUNICATION

The following is our system of communication, designed to facilitate a continuous flow of two-way (management, supervision and employees) safety and health information in a form that is readily understandable to and between all affected site personnel:

- New worker orientation, including a discussion of site-specific safety and health policies and procedures.
- Follow-through by supervision to ensure effectiveness.
- Workplace-specific safety and health training.
- Safety meetings held at least every toolbox meeting on all projects, on a weekly basis. These meetings will be short (5-10 minutes) and will cover 1 or 2 specific topics. Safety meetings successfully communicate important information to employees, as well as promote safety awareness. – more frequently as deemed necessary by the creation of hazards or occurrence of injuries and illnesses.
- Effective communication of safety and health concerns between workers and supervisors, including language translation where appropriate.
- Posted and distributed safety information.
- A system for workers to anonymously inform management about workplace hazards. This is accommodated by managers, supervisors, and employees will report any hazardous conditions or activities noted: 1)· As a result of the formal monthly or

quarterly inspections, and 2)· During daily routine operations. Hazards can be reported to their supervisors anonymously, and to the safety management department.
- Vehicle and site-specific codes of safe work practices.
- Other means we use to ensure communication with employees include: We recognize that open, two-way communication between management and employee on health and safety issues is essential to an injury-free, productive workplace. The following system of communication is designed to facilitate a continuous flow of safety' and health information between management and employee in a form that is readily understandable and consists of the following items: 1)· We will conduct new worker orientation including a discussion of safety and health policies and procedures, as well as our IIP Program. 2)· An authorized instructor will conduct workplace safety and health training. 3)· Superintendent will conduct "Tailgate" meetings weekly. 4)· Posting and/or distributing safety information.
- General safe work practices with specifics with respect to hazards unique to the employees' job assignment.

HAZARD ASSESSMENT

Periodic inspections to identify and evaluate workplace hazards shall be performed by Tim Almberg (Safety Director). These inspections are done on a monthly basis, and can be found on our construction management program Procore. Site Management (Project Managers, Superintendents, Project Engineers) These inspections are done on a weekly basis, and can be found on our construction management program Procore. Inspections will be performed for the following:

- At least Monthly job site inspections; performed by the Safety Director, Safety Supervisors and/or the Safety Consultant. Field Management at each job site location will perform at least one job site inspection each week. Inspections shall be made to identify and evaluate hazards: 1. when this program is first established, 2. whenever new substances, processes, procedures or equipment are introduced to the workplace that represent a new occupational safety and health hazard, and 3. whenever we are made aware of a new or previously unrecognized hazard. prior to beginning of the shifts;
- When new substances, processes, procedures or equipment that present potential new hazards are introduced into our workplace;
- When new, previously unidentified hazards are recognized;
- When occupational injuries and illnesses occur;
- When we hire and/or reassign permanent or intermittent workers to processes, operations, or tasks for which a hazard evaluation has not been previously conducted; and

Whenever workplace conditions warrant an inspection.

Periodic inspections consist of identification and evaluation of workplace hazards, and any other effective methods to identify and evaluate workplace hazards.

ACCIDENT/EXPOSURE INVESTIGATIONS

Investigation of workplace accidents, hazardous substance exposures and near-accidents will be done by Accident investigation is a systematic method for collecting factual information that makes it possible to accurately reconstruct the accident and determine the underlying reasons for the cause of the accident. The investigation is fact-finding, not fault finding. Once the primary causes for the accident have been determined, preventative measures can be identified and effectively instituted. Each supervisor has a prominent role in conducting an accident investigation. The responsibility for conducting an accident investigation includes collecting the facts, determining the sequence of events that resulted in the accident, identify action to prevent recurrence, and provide follow-up to ensure that corrective action was effective. All accidents should be investigated promptly regardless of their severity. Promptness of the investigation is essential since conditions at the accident scene change. Moreover, witnesses are more likely to relate circumstances as they were, without the added conjecture that comes late from discussions of the accident with other employees. Promptness in checking the scene assures employees that management is highly concerned for their well being. . The type of investigation depends on the nature and magnitude of the accident. Each department supervisor/manager shall promptly investigate, thoroughly analyze, and report in writing to Tim Almberg and/or Steve Mazza, all accidents involving personal injury and/or property damage or the potential there for, once they occur. Accident investigation reports shall be submitted within 48 hours of the first notice to the supervisor/manager, and will include:

- Visiting the scene as soon as possible;
- Interviewing affected workers and witnesses;
- Examining the workplace for factors associated with the accident/exposure/near-accident;
- Determining the causes of the accident/exposure/near-accident;
- Taking corrective action to prevent the accident/exposure/near-accident from reoccurring; and

HAZARD CORRECTION

Unsafe or unhealthy work conditions, practices or procedures at our work facilities shall be corrected in a timely manner based on the severity of the hazards, and according to the following procedures:

- When observed or discovered;

- When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, we will remove all exposed workers from the area except those necessary to correct the existing condition. Workers necessary to correct the hazardous condition shall be provided with the necessary protection; and
- All such actions taken and dates they are completed shall be documented.

TRAINING AND INSTRUCTION

All workers, including management, supervisors, and lead personnel shall have training and instruction on general and job-specific safety and health practices. Training and instruction shall be provided as follows:

- When the IIPP is first established;
- To all new workers;
- To all workers given new job assignments for which training has not previously provided;
- Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;
- Whenever we become aware of a new or previously unrecognized hazard;
- To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed; and
- To all workers with respect to hazards specific to each employee's job assignment.

This training will include (but is not limited to):

- General Awareness Safety for Construction
- Hazard Communication
- Silica Awareness
- Alcohol and Drug Rules
- Compliance Area (IIPP, SDS Location, Emergency Action Plan)
- Stop Work Authority
- Fire Extinguisher Use
- First Aid Kits and Locations (Compliance Area, Company Vehicles, Job Trailers/Connex's)
- Personal Protective Equipment
- Job Hazard Analysis (JHA)
- Safety Data Sheet (SDS)
- Confined Space
- Trenching and Excavation
- Ladder Safety
- Hearing Awareness
- Hand Tools Inspection and Use
- Fall Protection
- Forklifts

- Struck By/Pinch Points
- Electrical Hazards (Overhead Line's, Extension Cords, GFCI's)– PP
- First Aid/CPR
- Crane Operations, Rigging, Signaling
- Respiratory Protection
- Heat Illness
- Welding/Cutting, Gas Cylinders
- Aerial Lifts
- Crystalline Silica

In addition, we provide specific instructions to all workers regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

RECORDKEEPING

Written IIPP and Documentation Requirements

Our organization has taken the following steps to implement and maintain our IIPP:

Our organization has ten or more employees and keeps records as follows:

1. Records of scheduled and periodic inspections including the person(s) conducting the inspection, the workplace hazards (i.e., unsafe conditions and work practices that have been identified) and the action(s) taken to correct the identified unsafe conditions and work practices are recorded on Procore. Accident/Incident investigation documents, training log and certificates (Training Log) can be found on the company N: drive. These records are maintained for at least one (1) year.

2. Documentation of safety and health training for each worker, including the worker's name or other identifier, training dates, type(s) of training, and training providers. This documentation is maintained for at least one (1) year.

3

SUPPORTING DOCUMENTATION

This is supportive documentation from Section C page 17

HUB International Insurance Services Inc.

2300 Clayton Road, Suite 300
Concord, CA 94520
Toll-free: 800-877-4560
CA License #0757776

hubinternational.com

December 3, 2018

To Whom It May Concern:

RE: GSE Construction Company, Inc.
WCIRB No.: 4-10-16-46-R

This letter will serve to confirm GSE Construction Company, Inc. would have an estimated 92% experience modification for 2016 if an employee was not involved in a vehicle accident on September 26, 2015.

GSE's employee, Mr. Tom Elder, was rear ended due to the other driver falling asleep behind the wheel.

To evidence the experience modification of 92%, I have attached the Workers Compensation Insurance Rating Bureau's (WCIRB) rating form to show the 2016 calculated modification of 106% and Mr. Elder's claim #2010263105 in the amount of $101,769. Please see highlighted claim on attachment #1.

I have also attached our insurance carrier's adjuster notes to show they will be subrogating 100% of this claim to the adverse driver for failure to control vehicle, inattentive driving and failure to stay wake. The subrogation will be processed as soon as Mr. Elder is stable and returns to work. Once 100% of the claim is paid by the responsible carrier, our carrier will submit the new claim cost to the WCIRB for re-calculation of the 106%. Please see the highlighted areas on attachment #2.

Also attached is our experience modification analysis to evidence the estimated modification of 92%. As you will notice on page 2 of attachment #3, we have removed Mr. Elders claim from the calculation.

Thank you and please advise any questions.

Sincerely,

Rachel M. Stroup

Rachel M. Stroup
Senior Vice President
Construction Division

GSE

CONSTRUCTION

We Build it Fast.

We Build it Right.