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MAY 23, 2023

San Lorenzo Valley Water District

Design of the Foreman Pressure Break Structure Replacement

Sandis Civil Engineers Surveyors and Planners

1700 S. Winchester Blvd., Suite 200, Campbell, CA 95008

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COVER LETTER





May 23, 2023

Josh Wolff
District Engineer
San Lorenzo Valley Water District
13060 Highway 9
Boulder Creek, CA 95006
831.338.2153

RE: San Lorenzo Valley Water District, Design of the Foreman Pressure Break Structure Replacement

Dear Josh,

We are very excited about the Foreman Pressure Break Structure Replacement RFP. We first saw the old structure post the CZU Complex Fire and knew someday it would need to be replaced. This project is the linchpin for use of the available water resources from the vast SLVWD watershed. And while there is still work to be done to fully reconstruct raw water intakes and pipelines, with this structure in place the District will gain not only resource access, but have the ability to switch between sources based on water quality.

Our team (Sandis, Biggs Cardosa Associates, Grassetti Environmental, Haro Kasunich & Associates, and Interface Engineering) is ready to go and have spent considerable time to review, discuss and conceptualize the project while preparing our RFP response. We know there are many decisions to make and feel we can develop and present solid options and recommendations to the District to move the design forward and through construction. Experience has taught us the importance of being adaptable and flexible to address the challenges of projects. We are confident that our team has the skills and experience to work collaboratively with the District and deliver this project successfully. We look forward to hearing from you following the RFP response review process.

Thank you for your consideration,

Chad Browning, PE, QSD/P, LEED AP
Principal-in-Charge
650.793.6642 | cbrowning@sandis.net

CONTRACTUAL SCOPE OF SERVICES



SCOPE OF WORK: NEW FPBS CONSTRUCTION PROJECT

- 1. Introduction:** This document outlines the detailed scope of work for the construction of a new Foreman Pressure Break Structure (FPBS) and associated infrastructure. The project involves the design and construction of the FPBS and a secondary structure for housing monitoring equipment. The project site is located adjacent to the Foreman Intake, north of the District's Lyon Treatment Plant (WTP). The new FPBS will collect outfall from the future Clear Creek and Sweetwater Creek raw water pipelines (5-Mile) and the future Peavine Creek raw water pipeline (Peavine). The collected water will arrive at the FPBS at pressures of up to 165-psi and must be brought to atmospheric pressure before being released. The project also includes the connection to the existing 12-inch pipeline conveying raw water into the WTP.
- 2. Design Phases:** The project will be divided into the following design phases: a. 30% Design Documents, b. 60% Design Documents, c. 90% Design Documents, and d. Final Design Documents.
- 3. Design Requirements and Deliverables:** The design of the new FPBS and associated infrastructure shall include the following components and deliverables:

3.1. FPBS Design

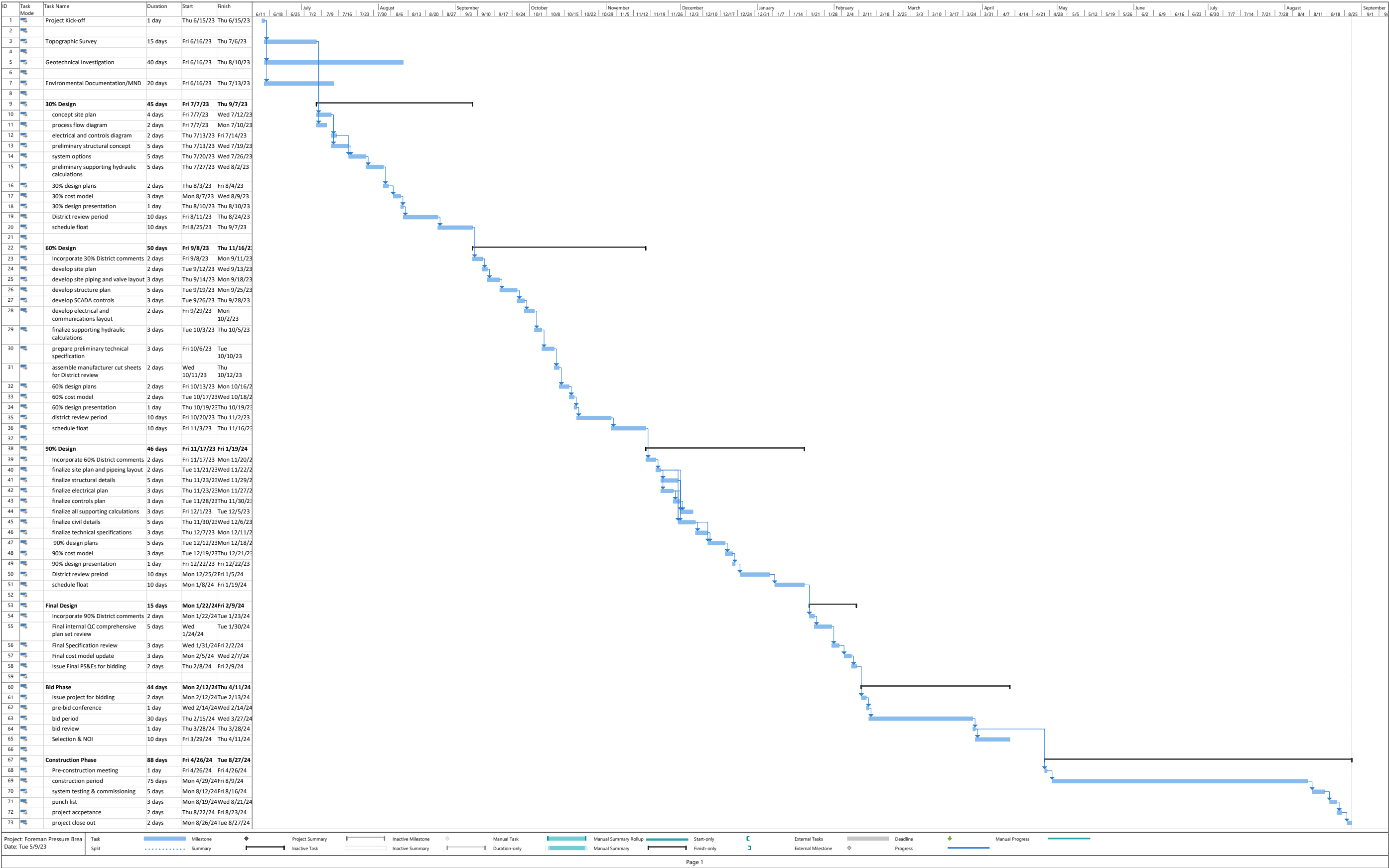
- Detailed design of the FPBS structure, considering fire resistance (concrete preferred).
- Inlets to the FPBS shall be designed for 8-inch pipelines.
- Multiple chambers within the FPBS, including drain valves and stainless steel screening.
- Separate turbidity reduction and monitoring systems for the FPBS and Foreman Creek.
- Automatic valves at the Peavine and 5-Mile inlets to the FPBS, at the outlet from the FPBS to the 12-inch pipeline to the WTP, and at the Foreman intake side of the 12-inch tee.
- Calculations demonstrating the proper sizing of all components, including conduits, pipelines, valves, and flow meters.
- Structural calculations for all structures, ensuring stability and safety.
- Design of a CCTV 4-camera system at the FPBS with a monitor at the WTP. Include cameras for Foreman Intake water level monitoring and general site security.
- Humidity controls for both the FPBS and the secondary structure.
- Debris settling and removal provisions.
- Detention time calculations to prevent the conveyance of entrained air into the WTP.
- Grading and erosion control measures for the project site.
- Geotechnical investigation of the site.
- Engineer's opinion of probable cost.

3.2. Secondary Structure Design

- Detailed design of the secondary structure to house turbidity monitoring, flow monitoring, and SCADA equipment.
- Integration of SCADA connections to the WTP, including monitoring of turbidity levels, water levels, pressures, and flow rates.
- Design of PG&E power supply to the FPBS and fiber-optic communication conductors connecting the FPBS to the WTP.

4. Additional Considerations

- The design shall comply with applicable local, state, and federal regulations, codes, and standards.
- The design team shall coordinate with the District throughout the design process to ensure alignment with their requirements and preferences.
- The design team shall review existing survey data (Attachment B) and expand on it as necessary.
- The final design documents shall include all necessary drawings, calculations, specifications, and reports for the construction of the FPBS and associated infrastructure.



PROJECT UNDERSTANDING

San Lorenzo Valley Water District (District) proposes to construct a new pressure break structure adjacent to the Foreman intake and just north of the water treatment plant. This project will replace the pressure break structure that was destroyed during the 2020 CSU Complex Fire and as such must be designed to include fire safe and resilient construction materials. The pressure break structure will collect water from two sources; Peavine and 5-mile and act to normalize the high-head flows, provide detention time to remove entrained air and capture debris. Additionally, with its location adjacent to the Foreman intake, the project will separate flows from Foreman, but include monitoring. As the structure will be feeding the water treatment plant, a SCADA system to monitor water quality characteristics such as: turbidity, pH, temperature, pressure, and flow rate is required. Additionally, due to the remote location a CCTV system is also required.

PROJECT APPROACH

We're excited about the opportunity to replace this important piece of District infrastructure. From our work immediately following the CZU Complex Fire we saw first-hand the devastation of the Foreman Watershed and the destruction of the previous pressure break structure. While the reconstruction of the 5-mile pipeline might be years off, the access to flows from Peavine will have an immediate and positive impact on District operation by utilizing an available water resource. The somewhat remote and unique nature of this project requires a measured approach that begins with a solid concept, vetting of options, and building design detail in steps that allow the District transparency and confidence in the final design.

What we will do: We will develop a concept backed by industry design standards and calculations. We will study the site topography, as well as geotechnical and environmental inputs and incorporate the appropriate measures into our design. We will update and supplement the previous site survey with data based on current (post site clearing) conditions and incorporate it into the design. We will study site and area geotechnical and geohazards that might exist and take into account during the site development and final detailing. We will work with the District Environmental staff to develop and submit documentation to obtain environmental clearance, assumed in the form of a negative declaration.

How we will begin and how we will complete the design: Upon issuance of this RFP, we studied options that could meet the project requirements, namely the pressure break structure itself. We see 4 potential options, each with their respective pros and cons:

- | | |
|---------------------------|-----------------------------|
| 1. Cast-in-place concrete | 3. Prefabricated concrete |
| 2. Masonry block | 4. Prefabricated steel tank |

While there are likely additional options that could be considered, we feel this list covers the most obvious options. We hope to have the opportunity to review this list with the District early during the design as the structure itself has by far the single greatest first cost and likely also will drive the construction duration to a large degree.

We plan to utilize the previous pressure break structure location for the new structure. The primary reasons are its convenient location to existing system piping already in place, setback from Foreman Creek and relatively good access. There is already a clearing that is free of boulders and trees that will minimize impacts to the environment. Site and piping design will be fully developed in plan and profiles as appropriate, along with construction detailing as necessary in the project plans.

The hydraulic calculations we see as critical for the design of the pressure break structure are as follows: pipe flow; velocity and pressure loss, thrust force and detention time. Additional intermediate calculations will likely be required when determining the tank size, pipe sizes, and locations of sensors.

The design of the structure itself will likely use ASCE 7 along with ACI for concrete and reinforcement as a code basis. Geotechnical and site hazard map data such as Risk Category, Soil Class, Allowable Soil Bearing Pressure, Seismic Design Category, and site-specific seismic response values will be used in the design calculations. The structure will also include provisions for use as a water tank by way of waterproof coating or liner system. The structural design and details will be fully developed and integrated in the project plans.

The SCADA system will expand on the system already employed by the District; such as the Emerson Rosemount WQS and other sensors and RTUs/PLCs and iFIX by GE for the system. We will investigate sensor options and present our recommendations appropriate for the project and operations. SCADA system and sensors will be depicted on the plans via P&ID (process and instrumentation diagram, single line style documentation).

The project will include extension of power and fiber optic communication from the water treatment plant to the pressure break site. The electrical demands for SCADA system and sensors as well as CCTV, sight lighting, equipment room lighting, and convenience outlets in sum total will be quite small. We assume a 120-volt, single phase, 50-amp circuit will be more than sufficient to serve this structure. On the communication side the closed-circuit TV system and SCADA control network will likely require a cable consisting of 6 single mode fibers all in a protective jacket. Electrical and CCTV systems will be depicted in the plans via P&ID ID (process and instrumentation diagram, single line style documentation).

We will provide excellent communication throughout our work on the project. We will be in person for presentation meetings, pre-bid, pre-construction and conduct regular construction site visits. We will employ proactive project management strategies to execute, adjust and maintain the project schedule, work quality and budget. We will build on the knowledge gained from previous work with the District to improve our results and ensure client satisfaction.

KEYS TO SUCCESS

- Vet options early.
- Design concept with complete set of supporting calculations.
- Material choices and detailing that includes thinking about project location.

PROJECT OPPORTUNITIES

- Inclusion of hydroelectric generation.
- Inclusion of system automation to reduce M&O requirements.

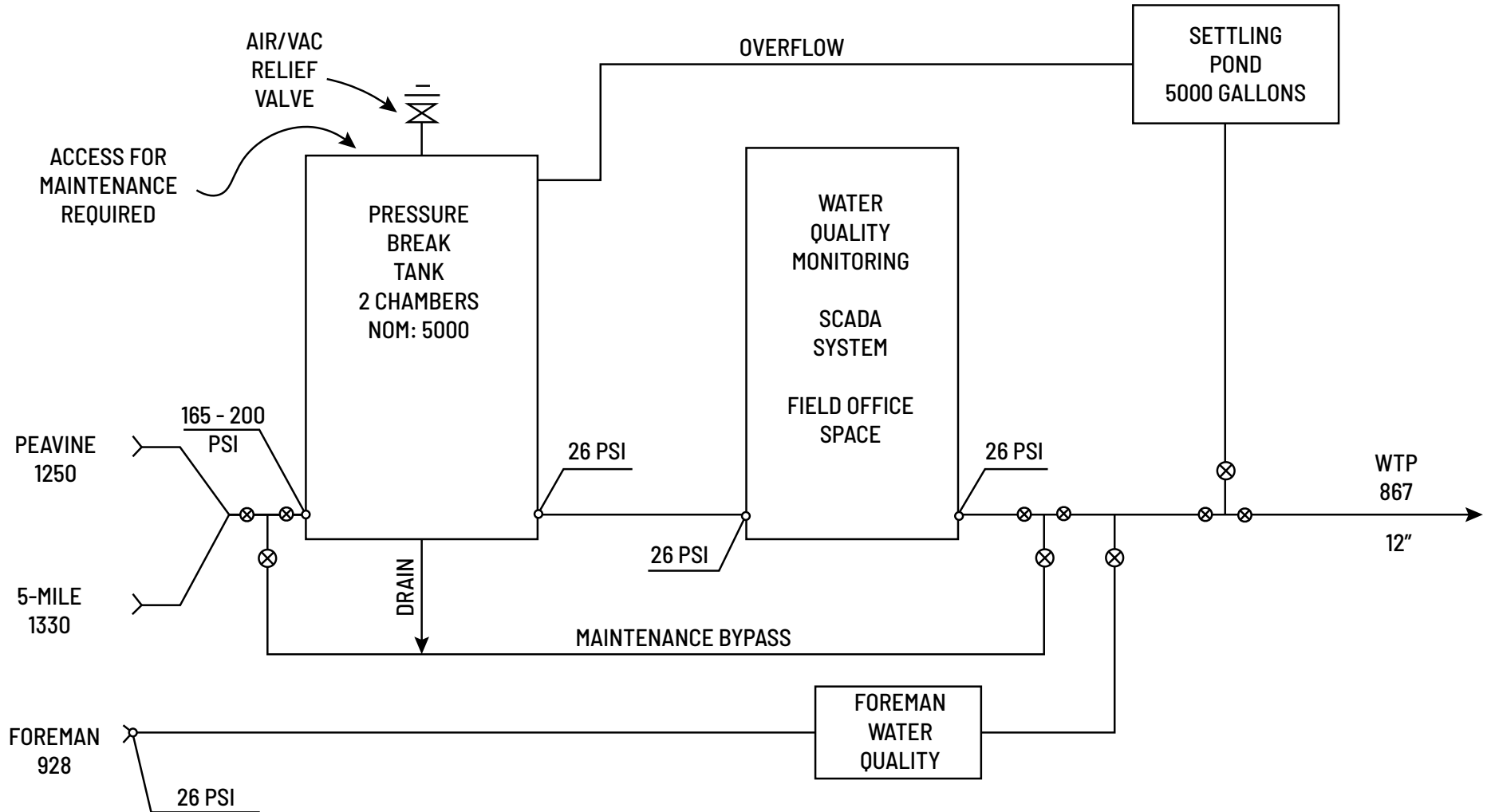
PROJECT CHALLENGES

- Remote sites will require careful construction logistics planning.
- Design includes maintenance and operations input.

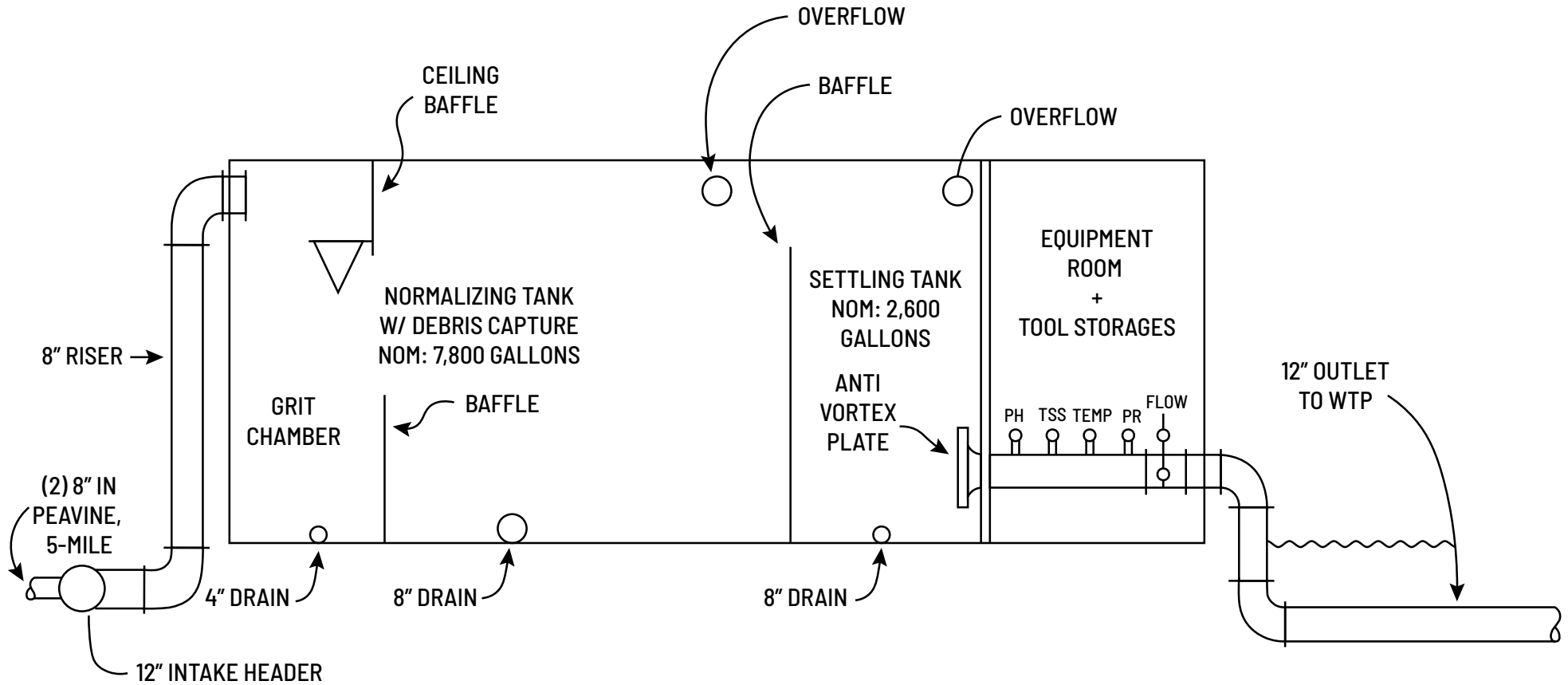
LESSONS LEARNED

- Build project schedule with adequate float included.
- Cost modeling must keep pace with design phases, no lag.

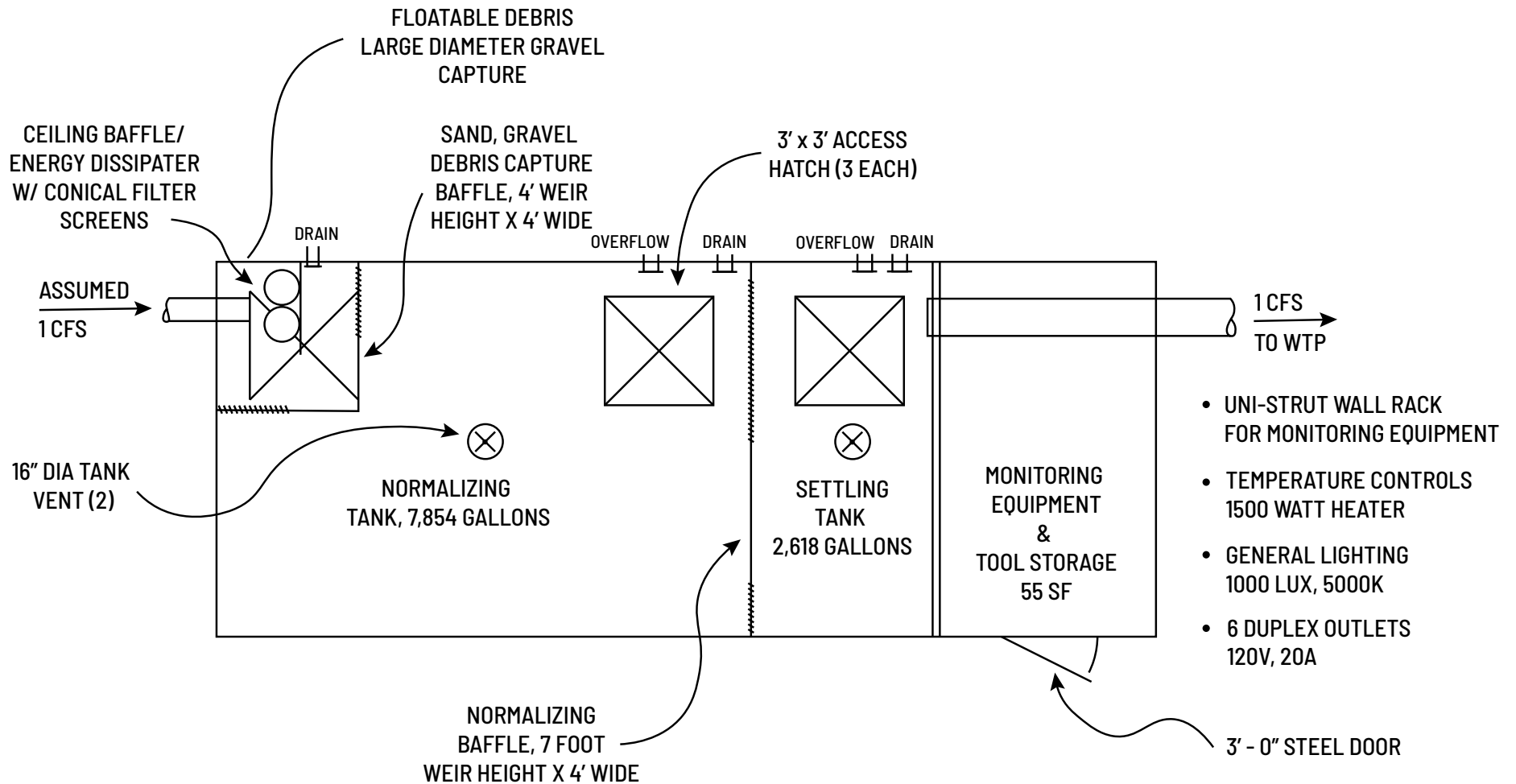
FOREMAN PRESSURE BREAK PFD



PRESSURE BREAK, ELEVATION VIEW



PRESSURE BREAK, TOP VIEW

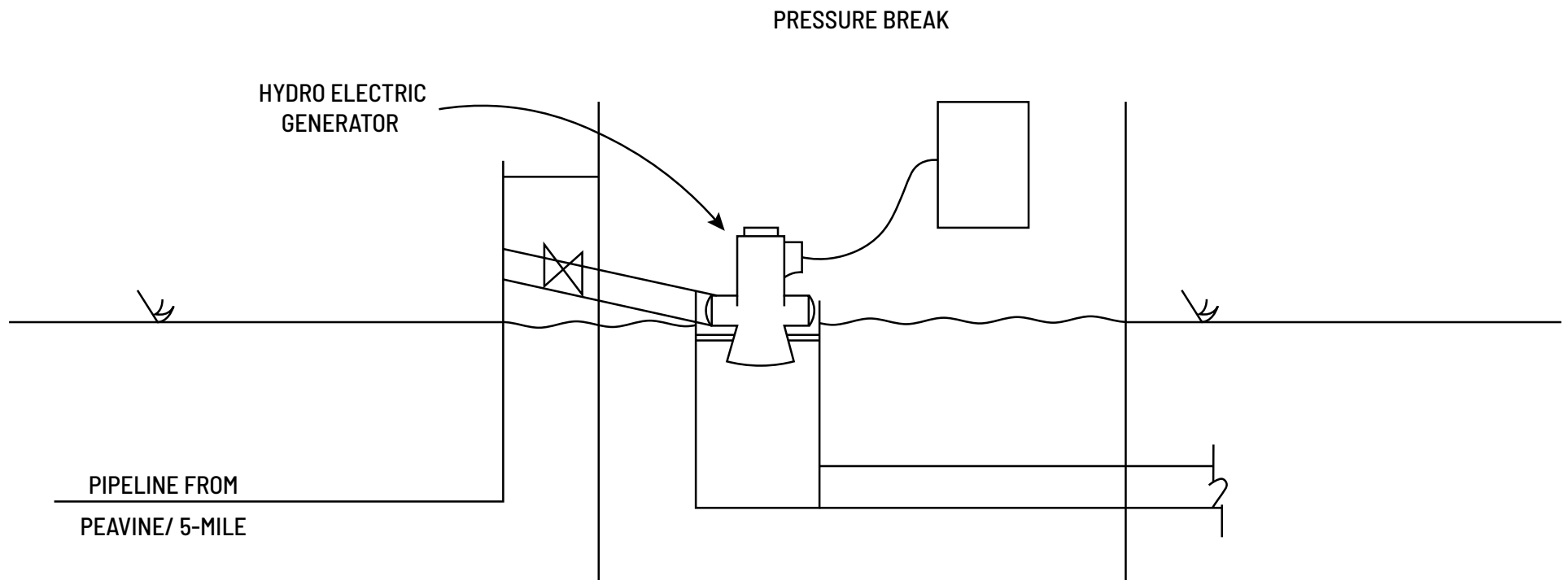


$$\frac{7,854 \text{ GAL}}{449 \text{ GAL}} = 17.5 \text{ MINUTES}$$

$$\frac{2,618 \text{ GAL}}{449 \text{ G/M}} = 5.8 \text{ MINUTES}$$

$$\text{TOTAL DETENTION TIME} = 23.3 \text{ MINUTES}$$

HYDRO ELECTRIC OPTION





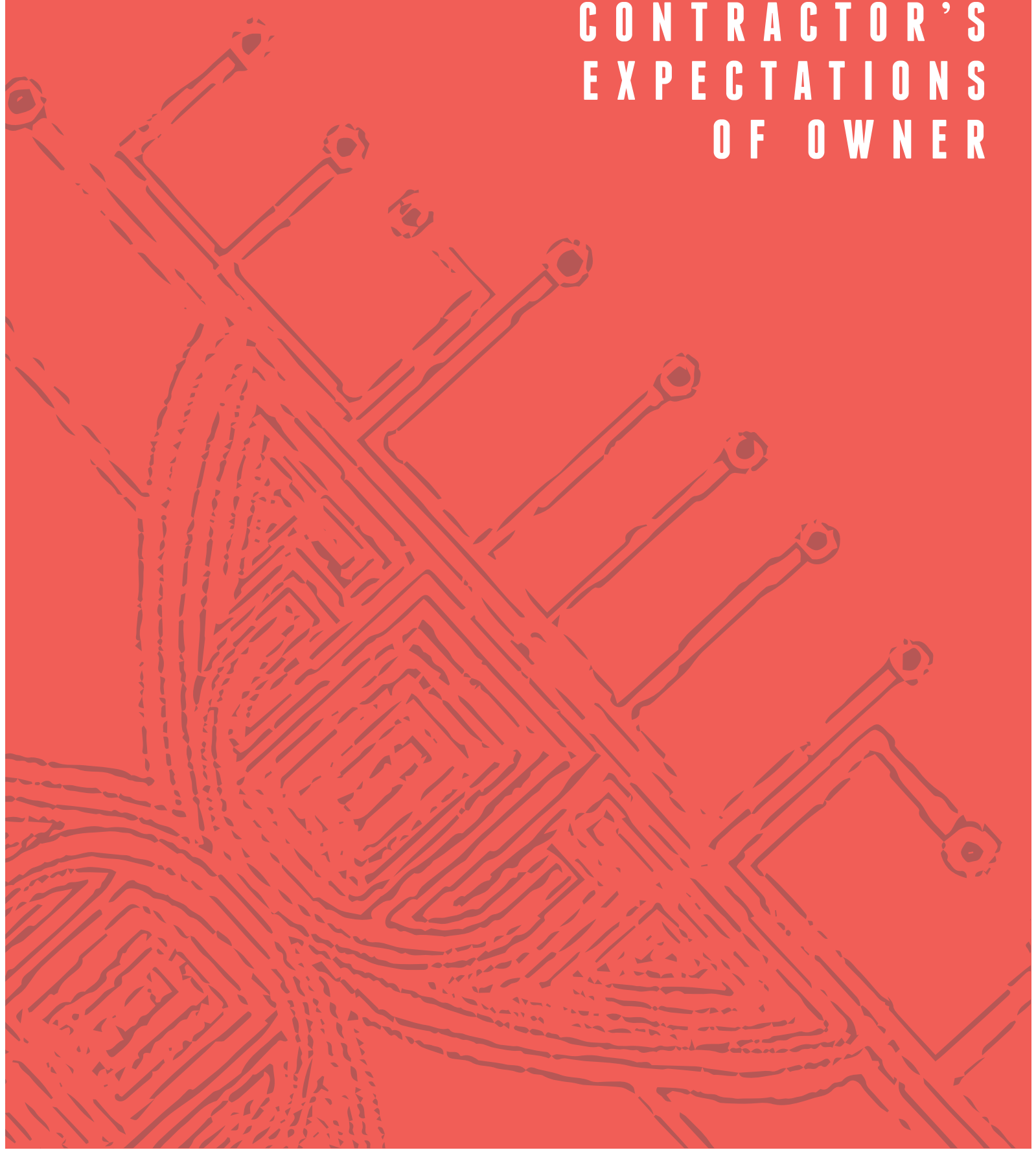
SLVWD FOREMAN PRESSURE BREAK STRUCTURE REPLACEMENT RFP

Conceptual Project Budget

Description	Units	Quantity	U/P	Subtotal
Site clearing and preparation	sf	1000	\$8	\$8,000
Structure foundation excavation	sf	340	\$10	\$3,400
Cast-in-place pressure break structure w/ interior baffles and equipment room	sf	1575	\$125	\$196,875
Tank water proofing epoxy coating	sf	1250	\$5	\$6,250
Pressure break structure roof, epoxy coating	sf	260	\$5	\$1,300
Debris capture (floatable)	ls	1	\$5,000	\$5,000
Tank vents	ea	2	\$1,500	\$3,000
Tank access hatch	ea	3	\$5,000	\$15,000
Ultrasonic tank level sensor	ea	2	\$2,500	\$5,000
Equipment room door	ea	1	\$1,000	\$1,000
Equipment room lighting	ls	1	\$500	\$500
Equipment room heat (1500 watt)	ls	1	\$500	\$500
Water quality sensors + flow meter	ea	5	\$1,500	\$7,500
Wall mount for sensors	ls	1	\$1,250	\$1,250
Main panel + miscellaneous electric	ls	1	\$10,000	\$10,000
Termination panel + miscellaneous signal	ls	1	\$7,500	\$7,500
SCADA RTU/PLC	ls	1	\$10,000	\$10,000
CCTV system (4 cameras)	ea	1	\$5,000	\$5,000
Settlement pond grading + piping	ls	1	\$3,500	\$3,500
Tank interior piping (stainless steel)	lf	10	\$150	\$1,500
Intake & bypass piping & fittings	lf	125	\$400	\$50,000
Intake valves & controls	ea	5	\$5,000	\$25,000
Drain piping & fittings	lf	90	\$250	\$22,500
Drain valves	ea	3	\$2,500	\$7,500
Outlet piping & fittings	lf	150	\$400	\$60,000
Outlet valves	ea	7	\$3,500	\$24,500
Fiber optic conduit and conductor	lf	1000	\$25	\$25,000
Power conduit and conductor	lf	1000	\$25	\$25,000
Storm water quality measures/env controls	ls	1	\$7,500	\$7,500
Mobilization + access logistics	ls	1	\$25,000	\$25,000

subtotal	\$564,075
GC, OH & P	\$84,611
contingency	\$56,408
inspection	\$56,408
total	\$761,501

CONTRACTOR'S EXPECTATIONS OF OWNER



C O N T R A C T O R ' S E X P E C T A T I O N S O F O W N E R

Sandis will prepare all PS&Es for the Project and expects the District to review deliverables and provide comments. In addition to review, Sandis expects the District to clarify the level of required environmental documentation to be performed by our team.

IDENTIFICATION OF POSSIBLE EXTRA SERVICES



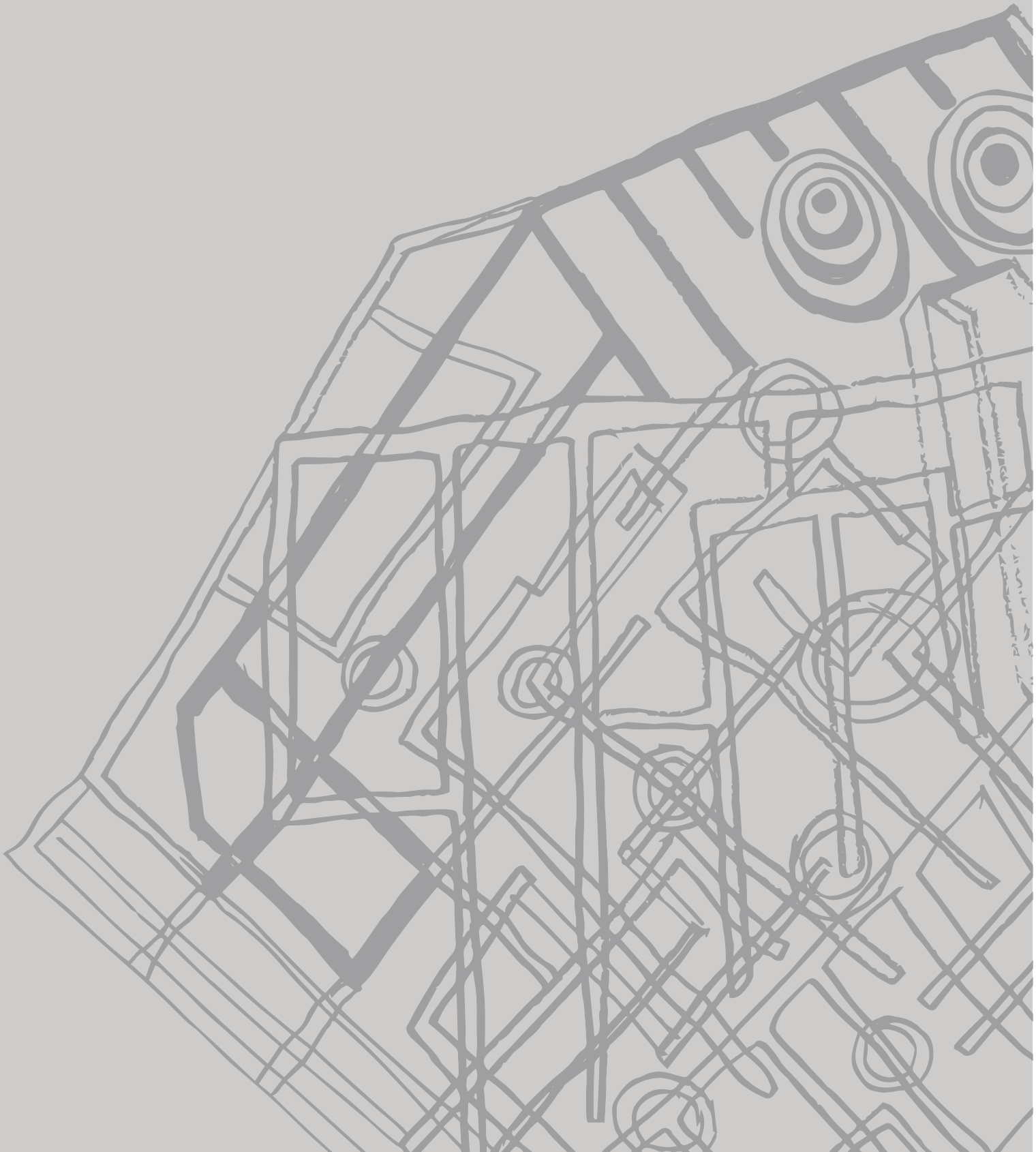
I D E N T I F I C A T I O N O F P O S S I B L E E X T R A S E R V I C E S

Sandis envisions possible extra services to include:

Environmental Impact Assessment: Conduct an environmental impact assessment of the project site and provide recommendations for mitigation of any potential environmental impacts during the construction and operation phases beyond the scope outlined in the RFP. Additional studies may include biological to support the mitigated negative declaration.

Operation and Maintenance Manuals: Develop comprehensive operation and maintenance manuals for the FPBS and associated infrastructure, providing guidelines for routine maintenance, troubleshooting, and emergency procedures.

EXCEPTIONS TO RFP



Sandis has carefully reviewed the District's RFP and does not wish to make any exceptions.

INSURANCE





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/3/2023

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

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

PRODUCER AssuredPartners Design Professionals Insurance Services, LLC 3697 Mt. Diablo Blvd Suite 230 Lafayette CA 94549 License#: 6003745 SANDICIVI	CONTACT NAME: Jennifer Aguirre PHONE (A/C, No, Ext): (510) 465-3090 FAX (A/C, No): E-MAIL ADDRESS: DesignProCerts@AssuredPartners.com INSURER(S) AFFORDING COVERAGE INSURER A: Continental Insurance Company INSURER B: American Casualty Company of Reading PA INSURER C: Transportation Insurance Company INSURER D: Underwriters at Lloyd's, London INSURER E: Travelers Casualty and Surety Co of America INSURER F:
INSURED Sandis Civil Engineers Surveyors Planners 3007 Douglas Blvd, Suite 105 Roseville CA 95661	NAIC # 35289 20427 20494 32727 31194

COVERAGES**CERTIFICATE NUMBER:** 1077420860**REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ Contractual Liab ☒ XCU Included GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PROJECT ☐ LOC OTHER:	Y	Y	6075819456	3/3/2023	3/3/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
B	AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☒ HIRED AUTOS ONLY ☒ NON-OWNED AUTOS ONLY	Y	Y	6075819473	3/3/2023	3/3/2024	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	☒ UMBRELLA LIAB ☒ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE DED ☐ RETENTION \$	Y	Y	6075819439	3/3/2023	3/3/2024	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
C B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N Y	N/A	6075819425 6075819411	3/3/2023 3/3/2023	3/3/2024 3/3/2024	☒ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D E	Cyber Liability Professional Liability		Y	ESL0339606838 107211098	3/3/2023 3/3/2023	3/3/2024 3/3/2024	Limit: Per Claim \$2,000,000 Annual Aggregate \$5,000,000 \$7,000,000

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

Umbrella Liability policy is a follow-form to underlying General Liability/Auto Liability/Employers Liability.
SANDIS Project Number/Name: #619129 / 1188 East 14th Street / Work Description or Project Location: San Leandro 14th and Callan Street Developer LLC
is named as Additional Insured as respects General and Auto Liability as required per written contract or agreement. General Liability and Auto Liability are Primary/Non-Contributory per policy form wording. Insurance coverage includes waiver of subrogation per the attached. 30 Days Notice of Cancellation

CERTIFICATE HOLDER**CANCELLATION 30 Day Notice of Cancellation**

14th and Callan Street Developer LLC Attn: Amy Rosenthal 1970 Broadway, Suite 745 Oakland CA 94612	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
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ATTACHMENT 1

RELEVANT EXPERIENCE



SAN LORENZO VALLEY WATER DISTRICT 2021 FEMA PIPELINE IMPROVEMENTS

Boulder Creek, CA; 2021 - 2022



The 2021 FEMA pipeline project provided the design for the replacement of approximately 2200 feet of existing District pipeline and the damaged existing booster pump station. The purpose of this project was to replace damaged infrastructure with new materials adequately sized for the demands in each of the two zones including the new booster station. The new infrastructure provides increased additional zone capacity, flow rates and pressures. The focus for the project team was to execute the management, design, and construction in a manner to control project cost and impact to the community with careful alignment planning and well thought out traffic controls to minimize impact to traffic patterns and access to properties.

The pipeline replacement mainly added piping in street alignments that did not previously include water mains which allows for the construction, inspection, disinfection, and testing prior to connections and activation without disrupting existing connections. The replacement booster station is relocated to the Ridge Drive right-of-way and sized to meet current demands and use profile. The footprint of the booster station was sized as needed for the duplex pumps and motor controls as well as appropriate operations and maintenance access.

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

Boulder Creek, CA; 2022 - Ongoing



Sandis is providing civil engineering and surveying services for the District's consolidation of Bracken Brae and Forest Springs mutual water companies project.

The project entails the consolidation of the Bracken Brae Mutual and Forest Springs Improvement and Maintenance Association into SLVWD. SLVWD serves a population of approximately 25,485 residents through two permitted water systems. The project intent is to provide District standardized improvements to benefit the two communities: approximately 152 connections serving a population of 440 residents. The Bracken Brae Mutual Water service area is located off Big Basin Way, topographically above and on the North side of Boulder Creek. The Forest Springs Improvement and Maintenance Association is also located off Big Basin Way topographically above and on the South side of both Boulder Creek and Big Basin Way. Conceptually the project includes up to two storage tanks, a duplex booster pump station, zone pressure control valve(s), approximately 3,500 lineal feet of water main to serve Bracken Brae, 3,500 lineal feet to serve Forest Springs, almost 5,000 lineal feet of water main extension to replace an existing undersized District pipeline (ex 2-inch), and other typical water main appurtenances such as air relief valves, blow off valves, and fire hydrants.

Palo Alto, CA;
2014 - 2017

STANFORD UNIVERSITY MEDICAL CENTER WELCH ROAD UTILITY PROJECT



Stanford Medical Center is a healthcare campus that provides world renowned facilities for patient care and cutting-edge research. To sustain and expand these facilities, the medical center determined two new hospital buildings were required. One building would be an expansion of the existing Lucile Packard Children's Hospital, while the other would replace the aging main hospital building. Sandis was retained to design the necessary roadway and infrastructure upgrades to service these two new facilities.

The infrastructure was routed through the Welch Road Corridor which circles the campus and provides access to many of the facilities, including the emergency department. Due to the critical nature of this access, Sandis explored multiple scenarios for the sequencing of work in order to maintain at least one lane of traffic at all times and allow for emergency operations to occur. This required review by multiple

stakeholders including local city staff, hospital operations, utility providers and constructability feedback from local contractors.

Sandis analyzed the condition of two of the many utility systems to determine the best value options. Both the sanitary sewer and water systems had been in service for more than 25 years. While it was thought they had adequate capacity, a combination of flow tests, and video inspections were conducted along with computer modeling of both systems. The results of modeling and testing showed the water main would require upsizing (existing 10-inch to 14-inch) to meet pressure and flow requirements, but the sanitary sewer main had sufficient capacity, but required some rehabilitation to correct separated joints and minor sags. Ultimately a combination of mortar lining and an epoxy infused liner was selected to rehabilitate the pipeline.

These systems were owned by a variety of stakeholders including the Medical center, Stanford utilities (who provided the chilled and hot water), telecom providers, the municipal electrical company, public works, and the Water/Gas/Wastewater department. Sandis orchestrated a series of stakeholder meetings to build consensus around design approach, relevant standards and to resolve conflicts where they arose.

Throughout construction Sandis worked closely with the contractor, various stakeholders, and reviewing agencies to respond quickly to issues and keep the project on schedule. Ultimately this complex project was constructed on time and within budget allowing the hospital projects to proceed as scheduled.

FOOTHILL COLLEGE CAMPUS WATER MAIN AND PRESSURE ZONE INTERCONNECT

Los Altos Hills, CA



The Foothill College Campus Water Main and Pressure Zone Interconnect project began as a quest to improve fire water flow rates available across the academic core of the campus. During design, it was discovered that the College sits between two pressure zones (60 psi low pressure, and 200 psi high pressure) of the local water district (Purissima Hills Water District). Foothill College in Los Altos Hills, CA, resides on a 144-acre parcel in an area of high topographic relief. Incremental campus construction and improvements occurred over the decades since the initial campus development in the late 1960s, but none focused on fire water. Well ahead of the now ubiquitous wildfire protections that are discussed at all higher education campuses that are similarly situated, this infrastructure improvement program addressed many aspects of emergency improvements. Through coordination with the water district and campus facilities staff, a pipeline was designed that connected two separate pressure zones to improve flow rates and available pressure for water district customers and also provided significantly better fire flow rates for the campus. A 10-inch DIP pipeline, approximately 2,500 feet in length, a pressure control/pressure sustaining valve, a manual bypass and a shallow crossing over a creek box culvert were required to establish the pressure zone interconnection. The project was one part of a larger campus infrastructure improvement program.

LAS POSITAS COLLEGE CAMPUS DOMESTIC WATER PRESSURE ANALYSIS

Livermore, CA; 2020 - 2021



Sandis provided civil engineering services For the Las Positas College Campus Domestic Water Pressure Analysis project. The Las Positas Campus is provided domestic water by a single connection located at the southwest corner of the campus. From there, water is distributed via a looped network of piping that roughly follows the campus loop road, with branches into and across the campus. There is a large elevation change across the campus (roughly 150 feet) which results in a wide range of pressures in the water system, as there are no pumps currently used to boost the system pressure. As the campus began the development of three new buildings at the upper side of the campus, it was appropriate to review the overall domestic water system and consider if a centralized booster pump would provide more benefit than multiple pumps at each building. The purpose of Sandis' services were to analyze the existing distribution system, develop options for increasing the system pressures, and to provide recommendations to the campus.

After completing the analysis of the domestic water system pressures for the Las Positas Campus, Sandis identified several options to improve the overall water system pressure, both for existing and planned buildings. The District decided to proceed with Option 1 – construction of a pump station to raise the pressure of the whole campus. In this phase, Sandis provided design, bid, and construction support to implement this option.

The pump system is a skid mounted system placed on a concrete pad near the campus main entrance. The pump system is encircled by a fence for screening and security. Electrical service was extended from the existing campus 12kv system. The pump system is supplied with normal power only and does not include a backup generator or power supply.

ATTACHMENT 2

KEY PERSONNEL





Jeff Setera, PE, QSD/P, LEED AP
QA/QC, Technical Advisor

Chad Browning, PE, QSD/P, LEED AP
Principal-in-Charge

Steven Yasutake, PE
Project Manager

Sam Clay, PE
Project Engineer

Lynden Solis
Design Engineer

SUB-CONSULTANTS

HARO KASUNICH & ASSOCIATES
Geotechnical Engineer

Moses Cuprill, PE, GE
Geotechnical Project Manager

Andrew Kasunich, PE, GE
Geotechnical Engineer

BIGGS CARDOSA
Structural Engineer

Thomas Swayze, PE, SE
Project Manager

GRASSETTI ENVIRONMENTAL
Environmental

Richard Grassetti
Environmental Consultant

Jack Schweitzer
Senior Ecologist/
GIS Specialist

Linnea Neuhas
Senior Ecologist

Chris Jasper
Staff Biologist

INTERFACE ENGINEERING
MEP Engineering

Shawn MacLean, PE
Principal-in-Charge

Thomas Jun, PE
Lead Electrical

Robert Gannon
Lead ICT

Rick Lasser
Senior SCADA Designer

JEFF SETERA, PE, QSD/P, LEED AP

PRESIDENT, QA/QC, TECHNICAL ADVISOR

About

Jeff Setera is Principal and President of Sandis Civil Engineers Surveyors Planners and has been with the firm for 31 years. Jeff is state renown for his leadership in engineering design and project management of utility and infrastructure projects for public agencies, hospital, and educational facilities. His vision as President is to ensure Sandis' processes bring out high quality, technically competent and client-focused design solutions. Jeff has extensive experience working with Water Districts throughout Northern California. His familiarity and insights across a wide range of water and pipeline projects are invaluable on teams when facing complex project challenges.

Relevant Experience

SLVWD Foreman Intake to WTP Pipeline Boulder Creek, CA

Technical Advisor, QA/QC. Jeff has served as Principal and has played an integral role in working closely with the San Lorenzo Valley Water District to assist in the destroyed or heavily damaged parts of the District's water pipeline systems and storage tanks. For the Foreman Intake, Jeff provided engineering and construction management of 3,500 l.f. of pipeline to replace a surface mounted pipeline that was destroyed during the CZU fire of 2020.

SLVWD 2021 FEMA Pipeline Improvements Boulder Creek, CA

Technical Advisor, QA/QC. Jeff has served as Principal throughout the District's 2021 FEMA Pipeline Improvements project. The 2021 FEMA pipeline project provided the design for the replacement of approximately 2200 l.f. of existing District pipeline and the damaged existing booster pump station. The project replaced damaged infrastructure with new materials adequately sized for the demands in each of the two zones including the new booster station.

Stanford University Medical Center Welch Road Utility Project Palo Alto, CA

Technical Advisor, QA/QC. Sandis provided services to design the necessary roadway and infrastructure upgrades for the expansion of Stanford University's new medical facilities. Sandis analyzed the condition of two of the many utility systems to determine the best value options. Both the sanitary sewer and water systems had been in service for more than 25 years. A flow test, video inspections, and computer modeling of both systems showed the water main would require upsizing to meet pressure and flow requirement. The sanitary sewer main had sufficient capacity, but required some rehabilitation to correct separated joints and minor sags. A combination of mortar lining and an epoxy infused liner was selected to rehabilitate the pipeline.

Las Positas College Campus Domestic Water Pressure Analysis Livermore, CA

Technical Advisor, QA/QC. Sandis analyzed the college's existing distribution system, developed options for increasing the system pressures, and provided recommendations to the campus. After completing the analysis of the domestic water system pressures for the Las Positas Campus, Sandis identified several options to improve the overall water system pressure.



31 Years of Experience

31 Years with Sandis

BS, Civil Engineering

San Jose State University

Professional Civil Engineer

CA #62793

Qualified SWPPP Developer/ Practitioner (QSD/P)

#340

LEED™ Accredited Professional, USGBC

CHAD BROWNING, PE, QSD/P, LEED AP

PRINCIPAL-IN-CHARGE

About

Chad offers over 24 years of local engineering experience. As Principal-in-Charge, Chad has most recently worked with San Lorenzo Valley Water District's recovery of fire damaged pipeline systems. He leads Sandis' engineering teams through multi-phase design and construction projects and often serves as the point of contact with agencies to ensure projects remain aligned with goals and budgets. He has led teams through water main replacements, the installation of sanitary sewer lift stations, pump stations, pipeline projects, and has dealt with emergency repairs and construction for water districts.

Relevant Experience

San Lorenzo Valley Water District Boulder Creek, CA

Principal-in-Charge. In response to the CZU Lightning Complex Fire, Sandis provided engineering and surveying services to the San Lorenzo Valley Water District. Sandis' services have included a Rapid Fire Damage system assessment of 7.5 miles of water pipeline and 7 intakes of the damaged waterlines; an expedited design and procurement of construction needed to replace or reroute the rest of the system that has become non-operational; and recovery efforts including assessment, design, permit, and procurement. As Principal-in-Charge, Chad's responsibilities include oversight, quality assurance and quality control, meeting attendance, site visits, construction observation, and plan reviews. Chad has played a vital role in overseeing the waterline design and development and continues to provide regular expertise to the team, ensuring Sandis' services are provided in a timely manner and on budget.

Stanford University Medical Center Welch Road Utility Project Palo Alto, CA

Principal-in-Charge. Sandis provided services to design the necessary roadway and infrastructure upgrades for the expansion of Stanford University's new medical facilities. The infrastructure was routed through the Welch Road Corridor which circles the campus and provides access to many of the facilities. Sandis analyzed the condition of two of the many utility systems to determine the best value options. Both the sanitary sewer and water systems had been in service for more than 25 years. A flow test, video inspections, and computer modeling of both systems showed the water main would require upsizing to meet pressure and flow requirement. The sanitary sewer main had sufficient capacity, but required some rehabilitation to correct separated joints and minor sags. Ultimately a combination of mortar lining and a epoxy infused liner was selected to rehabilitate the pipeline.

Foothill College Campus Water Main and Pressure Zone Interconnect Las Altos Hills, CA

QA/QC. Sandis provided engineering services to improve fire water flow rates available across the Foothill College campus. Through coordination with the water district and campus facilities staff, a pipeline was designed that connected two separate pressure zones to improve flow rates and available pressure for water district customers and also provided significantly better fire flow rates for the campus.



24 Years of Experience

17 Years with Sandis

BS, Civil Engineering

California State University, Long Beach

Professional Civil Engineer

CA #68315

**Qualified SWPPP Developer/
Practitioner (QSD/P)**

#00917

LEED™ Accredited Professional, USGBC

STEVEN YASUTAKE, PE

PROJECT MANAGER

About

Steven Yasutake has over 13 years of civil engineering experience. He has managed the civil design of projects in the civic, public works, research, hi-tech, academic, and healthcare sectors. His ability to oversee the technical aspects of a project while keeping open lines of communication with project teams and stakeholders allows Steven to successfully complete projects on time and within budget. As Project Manager, Steven provides guidance on design concepts and works closely with regulatory agencies to ensure Sandis' design drawings meet state and local regulations while applying experience and lessons learned from past projects.

Relevant Experience

San Lorenzo Valley Water District Boulder Creek, CA

Project Manager. In response to the CZU Lightning Complex Fire, Sandis provided engineering and surveying services to the San Lorenzo Valley Water District. Sandis' services have included a Rapid Fire Damage system assessment of 7.5 miles of water pipeline and 7 intakes of the damaged waterlines; an expedited design and procurement of construction needed to replace or reroute the rest of the system that has become non-operational; and recovery efforts including assessment, design, permit, and procurement.

North Coast County Water District Tank Vent Replacement Evaluation Pacifica, CA

Project Manager. Sandis is providing engineering services to evaluate and make recommendations regarding existing tank vents on the seven storage tanks within the District. Evaluation includes an exterior inspection of tanks for general condition with a focus on roof mounted vents. Recommendations account for system operational logistics, existing tank condition and provide a solution to serve the District for decades. Project deliverables include a report that summarizes the results of evaluation, development of options including rough order magnitude costs and a recommendation for a future improvement project.

Additional Relevant Experience

Sanborn Park ADA and Trail Improvements Saratoga, CA

Engineering, utility locating, and surveying for ADA and trail improvements.

Jackson Oaks Access Road Improvements Morgan Hill, CA

Engineering, surveying and stormwater management for the conversion of 3 miles of dirt paths into gravel roads.

City of Pittsburg Frontage Road Living Green Trail Pittsburg, CA

Civil engineering for the development of a Class I Trail.

Department of General Services On-Call Engineering Services Various Locations, CA

Engineering and surveying services on an on-call basis for a variety of projects in Northern California.



13 Years of Experience

9 Years with Sandis

BS, Civil Engineering

University of California, Irvine

Professional Engineer

CA #82079

SAM CLAY, PE

PROJECT ENGINEER

About

Sam has extensive experience in the engineering industry and has served as an integral Sandis team member. He has a broad array of engineering experience that includes: street, roadway, and parking lot improvements; water storage tanks; fire, domestic and reclaimed water systems; steam, natural gas and emergency power/dual power systems; storm and sanitary sewer systems; security fire alarm systems; telecommunication distribution; grading and drainage; detention and retention basins; central plant additions and expansions; slope stabilization; pump station pressure and filtration; and hot & chilled water systems. Sam works closely with regulatory agencies to ensure that Sandis' design drawings are accurately designed and documented to meet state, local, and federal regulations so that construction permits can be obtained on schedule.

Relevant Experience

San Lorenzo Valley Water District Boulder Creek, CA

Project Engineer. In response to the CZU Lightning Complex Fire, Sandis provided engineering and surveying services to the San Lorenzo Valley Water District. Sandis' services have included a Rapid Fire Damage system assessment of 7.5 miles of water pipeline and 7 intakes of the damaged waterlines; an expedited design and procurement of construction needed to replace or reroute the rest of the system that has become non-operational; and recovery efforts including assessment, design, permit, and procurement.

SLVWD Lyon Complex Access Road Boulder Creek, CA

Project Engineer. As part of Sandis' emergency repair services to the District in response to the CZU Lightning Complex Fire, Sandis provided engineering and surveying services for the Lyon Complex Access Road.

North Coast County Water District Tank Vent Replacement Evaluation Pacifica, CA

Project Engineer. Sandis is providing engineering services to evaluate and make recommendations regarding existing tank vents on the seven storage tanks within the District. Evaluation includes an exterior inspection of tanks for general condition with a focus on roof mounted vents. Recommendations account for system operational logistics, existing tank condition and provide a solution to serve the District for decades. Project deliverables include a report that summarizes the results of evaluation, development of options including rough order magnitude costs and a recommendation for a future improvement project.

Additional Relevant Experience

Santa Clara County Martial Cottle Park San Jose, CA

Engineering design, surveying, and project/construction management of 287-acre park and recreation facilities.

Sanborn Park ADA and Trail Improvements Santa Clara County, CA

Engineering and land surveying for Sanborn County Park trail improvements.



12 Years of Experience

8 Years at Sandis

BS, Civil Engineering

University of Virginia

MEng, Coastal and Ocean Engineering

Texas A&M

Professional Engineer

Civil Engineer CA #88801

LYNDEN SOLIS

DESIGN ENGINEER

About

Lynden has 7 years of engineering experience. Lynden prepares civil related plans and documents to obtain necessary permits for projects from agencies. Highly technical, Lynden assists with reporting, plan review, CAD updates and schematic drawings. Lynden is also involved with coordination and meetings with agencies and design consultants.

Relevant Experience

San Lorenzo Valley Water District Boulder Creek, CA

Design Engineer. In response to the CZU Lightning Complex Fire, Sandis provided engineering and surveying services to the San Lorenzo Valley Water District. Sandis' services have included a Rapid Fire Damage system assessment of 7.5 miles of water pipeline and 7 intakes of the damaged waterlines; an expedited design and procurement of construction needed to replace or reroute the rest of the system that has become non-operational; and recovery efforts including assessment, design, permit, and procurement.

City of Saratoga Citywide Stormdrain Master Plan Update Saratoga, CA

Design Engineer. Sandis is providing civil engineering and surveying services to the City of Saratoga for the Storm Drain Master Plan Update project. The project goal is to determine the condition of the City's storm drain system and to verify its components. As Design Engineer, Lynden is assisting with document updating, utility research, and review for the project.

North Coast County Water District Tank Vent Replacement Evaluation Saratoga, CA

Design Engineer. Sandis is providing evaluation and recommendations regarding existing tank vents on the seven storage tanks within the District. As Design Engineer, Lynden is assisting with reporting, attending meetings, and CAD updates.

San Jose Civil Engineering Master Services Agreement San Jose CA

Design Engineer. Sandis has provided a number of civil engineering services for the City of San José under a Civil Engineering Master Services Agreement. Completed projects included the construction of a new Fire station, Happy Hollow Park and Zoo, and the Newbury Park final design and grading plan. As Design Engineer, Lynden assists in numerous projects under this contract. Her work has included utility research, cost estimating, site visits and performed review for the Fire Station No. 36 feasibility study.

Dublin All Abilities Playground Saratoga, CA

Design Engineer. The rehabilitation will include the design and construction of an all-abilities playground, an all-inclusive picnic area, upgraded landscape, parking facilities, and pathways to improve accessibility and connectivity to other park features including the sports fields and a new ADA-compliant restroom facility. Sandis is providing civil engineering, topographic survey, and utility locating for this project. As Design Engineer, Lynden assisted with updating plans, grading plan revision and utilities planning for the project.



7 Years of Experience

4 Years with Sandis

BS, Civil Engineering

California State University,
Fullerton

JOHN KASUNICH, PE, GE

PRINCIPAL-IN-CHARGE/GEOTECHNICAL ENGINEER

About

Mr. Kasunich is a Principal Geotechnical Engineer managing field investigations and design for various roadside stability projects, coastal protection structures and coastline/streambank erosion projects. Responsibilities include interacting with clients, field analysis, and report preparation. Mr. Kasunich uses his decades of experience to think outside of the box for solutions on challenging limited access coastal and geotechnical engineering projects.

Relevant Experience

San Lorenzo Valley Water District Boulder Creek, CA

Decades of experience inventorying road failures, utility line and tank sites, and landslide repair. Most recently involved in the landslide study of a broad soil mass that disconnected from the hillside undermining Madrone Road during the winter rain season of 2016/2017. Provided geotechnical design criteria to restore the roadway and stabilize the soil mass.

Dark Gulch Crossing Stabilization Project Old Haul Road San Mateo County, CA

Provided design criteria, recommendations, and construction oversight for repair of an 80-foot-deep stream crossing failure on Old Haul Road. The project included removal of unstable fill material and crib logs, installation of a 66-inch x 240 ft new culvert and reconstruction of the fill embankment to restore road access.

Sara Polgar, Conservation Program Specialist

San Mateo Resource Conservation District

650-669-9077

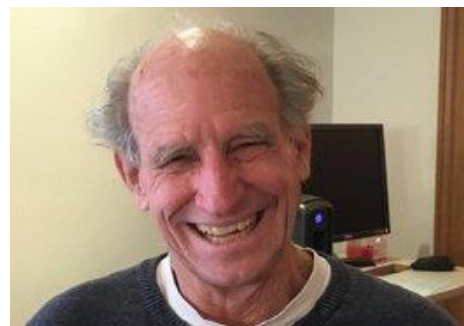
Alpine Road Trail Improvement Project Alpine Road, San Mateo County, CA

Provided geotechnical design criteria for proposed road and trail improvements along approximately 7,400 l.f. of existing road within the Coal Creek Open Space Preserve.

Bryan Apple

Midpeninsula Regional Open Space District

650-691-1200



37 Years of Experience

37 Years at Haro, Kasunich & Associates, Inc.

BS & MS

University of California, Los Angeles

Professional Civil Engineer

CA #33177

Professional Geotechnical Engineer

GE 455

MOSES CUPRILL, P.E.

PRINCIPAL ENGINEER/PROJECT MANAGER

About

Mr. Cuprill is currently Principal/Owner at Haro, Kasunich and Associates. His responsibilities include work plan development for various geotechnical engineering investigations pertaining to landslide stability, coastal bluff recession, retaining walls, roadway infrastructure and public works projects, coastal protection structures (new and maintenance of existing), ocean wave runup, and liquefaction. Mr. Cuprill prepares cost estimate proposals, directs field studies and laboratory testing program, analysis of data, develop design criteria, and preparation of report summarizing findings. Mr. Cuprill also manages each of his project budgets and monitors efficiency.

Relevant Experience

Highland Way PM 3.25 Santa Cruz County, CA

Provided design recommendation and construction oversight for a 20 ft. high tieback soldier pile retaining wall to restore access through Highland Way.

County of Santa Department of Public Works

701 Ocean Street, Room 410 Santa Cruz, CA 95060

831-454-2385

Bean Creek Road Slip-Out PM 2.10 Santa Cruz County, CA

Provided design criteria, recommendations, and construction oversight for engineered fill slopes, pier and lagging retaining walls, and site drainage.

County of Santa Department of Public Works

701 Ocean Street, Room 410 Santa Cruz, CA 95060

831-454-2385

Lyon Tank Access Road Landslide Repair Boulder Creek, CA

Landslide study of a broad soil mass that disconnected from the hillside undermining Madrone Road during the winter rain season of 2016/2017. Provided geotechnical design criteria to restore the roadway and stabilize the soil mass.

San Lorenzo Valley Water District

13060 Highway 9, Boulder Creek, California



24 Years of Experience

17 Years at Haro, Kasunich & Associates, Inc.

BS, Civil and Environmental Engineering

California Polytechnic State University, San Luis Obispo

Professional Civil Engineer

CA #78901

ASHTON BUCKER, PE

SENIOR ENGINEER/GEOTECHNICAL ENGINEER

About

Ashton has been working in the geotechnical consulting field at HKA for about 7 years. His experience includes geotechnical site characterization, foundation design, retaining wall design, landslide slope stability, liquefaction analysis, tieback anchor design, grading and drainage plans, and various civil/coastal engineering projects. Ashton is also responsible for management of both the design and construction observation phase of projects.

Relevant Experience

College Lake Pipeline City of Watsonville and County of Santa Cruz, CA
Provided geotechnical investigation for a new 6-mile underground pipeline project in the City of Watsonville and surrounding outskirts. HKA's scope of services for the design phase of this project included preliminary analysis and site reconnaissance, hazard analysis (liquefaction/lateral spreading, seismic shaking, slope stability, erosion), geotechnical field exploration, laboratory testing, and technical analysis/report prep. Site investigation included borings and CPT soundings with the City of Watsonville and agricultural lands at roughly 500 foot intervals along the pipeline, with special coverage in liquefiable zones and road crossings.

Fox Creek Farms East Carmel Valley, CA

Provided design criteria, recommendations, and consulting oversight for the development of water tanks, fire retention ponds, employee housing, kitchen, greenhouse, barns, and wash sheds at Fox Creek Farms. Performed extensive field investigation and laboratory testing in conjunction with a geologist to identify and mitigate landslide and faulting hazards across the site.

Lyon Tank Big Basin Highway, Boulder Creek, CA

Provided geotechnical investigation for slope stabilization project at San Lorenzo Valley Water District Lyon Tank site in Boulder Creek, CA. Geotechnical services included field exploration, laboratory testing, slope stability analysis, repair alternatives, and report. Recommendation included multiple secant walls or secant wall and buttress fill slope combo to stabilize large slope failure. Key design constraint was preventing soil from mobilizing off property.



12 Years of Experience

7 Years at Haro, Kasunich & Associates, Inc.

BS, Civil and Environmental Engineering

San Jose State University

Professional Civil Engineer

CA #93365

JUAN LUIS PEREZ

STAFF ENGINEER/ GEOTECHNICAL ENGINEER

About

Juan Luis is the newest addition to the HKA team. Through his engineering graduate education and his work experience he has proven himself as a competent geotechnical engineer capable of producing quality, timely work. His experience includes geotechnical site characterization, foundation design, retaining wall design, landslide slope stability, field engineering, and various civil/geotechnical engineering projects. Juan Luis is also responsible for cost estimate proposals, draft geotechnical engineering investigations, and construction monitoring.

Relevant Experience

Fairweather Lake Common Santa Clara, CA

Provided geotechnical investigation and design criteria for the underpinning of the apartment buildings at Fairweather Lake Common. Site investigation included CPT soundings, and hazard analysis (liquefaction, seismic).

Canary Cottage Pebble Beach, CA

Provided geotechnical investigation, design criteria and recommendations for the development of the proposed Lodge at Pebble Beach New Canary Cottage.

Green Valley Christian School Watsonville, CA

Provided geotechnical investigation for slope stabilization project at Green Valley Christian School in Watsonville Creek, CA. Geotechnical services included field exploration, laboratory testing, slope stability analysis, repair alternatives, and report.



2 Years of Experience

1 Year at Haro, Kasunich & Associates, Inc.

BS, Civil Engineering

Aguascalientes Autonomous University

THOMAS SWAYZE, PE, SE

PROJECT MANAGER

About

Tom Swayze has over 30 years of professional structural engineering design and management experience. After graduating from California Polytechnic State University, he began his career engineering commercial buildings. He soon expanded his focus to include all types of building and infrastructure projects. Tom's responsibilities include client development, contract negotiations, project staffing, project scheduling, supervision of project engineers and draftsmen, quality control and job cost control for projects under his supervision.

Relevant Experience

Central Subway Sewer Project San Francisco, CA

Project Manager for providing structural engineering for various drainage components as part of a design-build team with BKF Engineers for the replacement of significant portions of the Fourth Street Sewer system to accommodate the new Central Subway. The existing 78-inch sewer line consists of a semi-circular cast-in-place concrete base supported on timber pilings with an unreinforced masonry (URM) arch to complete the sewer line. The main portion of the project consisted of removing the URM arches and replacing with a new cast-in-place concrete cap designed to withstand the new light rail loading. Also included within the extents of this project are several manhole riser structures, custom offset manhole risers, a 36-inch force main pass-through structure, 18-inch tie-in structures, and an overflow structure.

Neary Tank Assessment & Retrofit (Purissima Water District) Santa Clara County, CA

Project Manager for the seismic assessment and retrofit of an existing 3-million-gallon steel water tank. Strengthening plates were welded to the bottom of the rafter beams and additional beam braces were added to allow for the existing roof framing to withstand the seismic sloshing wave uplift forces. A new foundation was designed to provide support and anchorage for the tank. Voids and burrows were found beneath the tank floor shell and to mitigate against caving soil during foundation construction, pressure grouting was utilized to stabilize the soil around the perimeter of the tank.

Page Mill Tank Seismic Assessment & Retrofit (Purissima Water District) Palo Alto, CA

Project Manager for the conditional and seismic assessment of an existing 500,000-gallon steel tank. Found the existing tank to have insufficient freeboard, no tank anchorage, and rafter beam corrosion. In order to keep the district's water capacity at the existing operating levels, a new roof and foundation system was proposed and designed to resist the seismic wave sloshing forces. External roof rafters were utilized to provide the district with a better performing roof tank and easier painting and coating surface on the interior of the tank.

McCann Water Tank (Purissima Water District) Los Altos Hills, CA

Project Manager for seismic assessments and seismic retrofits of McCann Water Tank, seismic assessment of Corporation Yard Buildings at McCann, Pump Station pit enlargement and steel thrust block anchorage and Thrust Block concrete saddles for McCann PS water lines.



30 Years of Experience

20 Years with Biggs Cardosa Associates

BA, Architectural Engineering

California Polytechnic State University, San Luis Obispo

Professional Civil Engineer

CA #39948

Professional Structural Engineer

CA S3302

RICHARD GRASSETTI

ENVIRONMENTAL CONSULTANT

About

Richard Grassetti is an environmental planner with over 40 years of experience in environmental impact analysis, project management, and regulatory compliance. He is a recognized expert on California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) processes, and has served as an expert witness on CEQA and planning issues. Richard regularly conducts peer review and QC/QA for all types of environmental impact analyses, and works frequently with public agencies, citizens groups, and applicants. He has managed the preparation of over 50 CEQA and NEPA documents, as well as numerous local agency planning and permitting documents. He has prepared over 200 hydrologic, geologic, and other technical analyses for CEQA and NEPA documents.

Relevant Experience

State Water Board Water Supply Upgrade Projects Various Locations, CA
Environmental Consultant. GECO prepared approximately 10 CEQA Exemptions and 10 IS/MNDs for small water supply system upgrades throughout California, including pipelines, tanks, and wells. Two additional water pipeline IS/MNDs are in process. Client: Northgate Environmental Management and State Water Quality Control Board.

Alameda County Flood Control Projects Alameda County, CA
Environmental Consultant. GECO prepared four CEQA Initial Study/Mitigated Negative Declarations for flood control projects for the County Flood Control District. These included levee improvements, culverts, and creek restoration projects. Client: Alameda County Flood Control and Water Conservation District.

Calle La Cruz Pipeline Replacement Project Carmel, CA
Environmental Consultant. GECO prepared the IS/MND for replacement of two wastewater lines crossing the Carmel River Lagoon. Major issues included biological resources, cultural resources and water quality. Client: Johnson Marigot Consulting and Carmel Area Wastewater District.

City of Napa Milliken Raw Water Pipeline Hardening Napa, CA
Environmental Consultant. GECO is working with Sandis to provide environmental services for the City of Napa's Milliken Raw Water Pipeline Hardening project. The project intent is to renew the existing 16-inch, 60-year old pipeline and add protections to provide a resiliency that will serve the Napa water system for decades.

City of Napa Milliken Diversion Dam Walkway Repairs Napa, CA
Environmental Consultant. GECO is working with Sandis to provide environmental services for the City of Napa's Milliken Diversion Dam Walkway Repairs project. The project requires a resilient design for trail retaining walls and a walkway that provides access to the pipeline, pipeline appurtenances, and raw water intake.



40 Years of Experience

26 Years with GECO

M.A. Geography (Emphasis on Fluvial Geomorphology and Water Resources Planning)

University of Oregon

B.A. Physical Geography

University of California, Berkeley

Additional Relevant Experience

Wayside Road Sewer Expansion Initial Study

Los Trancos Woods Sewer Expansion Initial Study

Arastradero Road Sewer Expansion Initial Study

Aptos Sanitary Sewer Replacement Project Initial Study

San Francisco PUC Water Supply Improvements Program CEQA

Lower Orinda Pumping Station Initial Study/Negative Declaration

Shell Martinez Breakout Tanks Project Initial Study

Shell Martinez Biotreater Facility Initial Study

JAKE SCHWEITZER

SENIOR BIOLOGIST/GIS SPECIALIST

About

Mr. Schweitzer combines 19 years of experience as a professional vegetation and wetland ecologist with over 22 years of experience in cartography and geographic information science (GIS, remote sensing/image analysis, and GPS technology). His ecological focus has been in botanical and wetland sciences. He holds federal and state permits to survey for listed fairy shrimp, California red-legged frog, and California tiger salamander and is certified in the vegetation mapping techniques developed by the California Native Plant Society and California Department of Fish and Wildlife. He is also trained to conduct California Rapid Assessment Method (CRAM) surveys. Mr. Schweitzer has been a docent for the past ten years at the East Bay Regional Park Botanic Garden, teaching native California plant ecology to the public.

Relevant Experience

SLVWD Consolidation of Bracken Brae and Forest Springs Mutual Water Companies Boulder Creek, CA

Senior Ecologist. Conducted special-status species habitat assessment and plant community mapping along a proposed pipeline alignment for the San Lorenzo Valley Water District within North Coast coniferous forest and cismontane woodland habitats along with mapped potential jurisdictional margins along Boulder Creek. Provided recommended avoidance and minimization measures for special status-species known to the region such as foothill yellow-legged frog, California red-legged frog and Marbled Murrelet.

Midpeninsula Regional Open Space District On-Call Biological Services San Mateo and Santa Clara County, CA

Senior Ecologist. VNLC has an on-call services contract with Midpeninsula Regional Open Space District (MROSD) to provide biological services on an as-needed bases. Services include biological monitoring, wetland delineation, rare plant and animal surveys, habitat assessments, and analysis and fulfillment of mitigation requirements. More recently, VNLC was awarded a second, separate contract with MROSD as the biological consultant to a CEQA firm for a CEQA open services contract.

Apple Park Biodiversity Study Santa Clara County, CA

Senior Ecologist and Project Manager. VNLC is conducting a multi-year biological diversity study of the 185-acre Apple Park. The study involves identifying and documenting all vertebrate and invertebrate animal taxa as well as all vascular plant taxa throughout the park. The purpose of the study is to compare the overall biological diversity of the site before and after construction and landscaping of the site. Post landscaping studies are currently underway to document all animal and plant taxa as well as plant community types.

Loma Fire Habitat Monitoring Santa Clara County, CA

Senior Ecologist and Project Manager. Conducted post-fire habitat monitoring on 2,000 acres of preserve land that is owned and managed by the Santa Clara Valley Open Space Authority. Conducted three consecutive years of vegetation monitoring (relevé plot sampling) as well as assessment of rare and invasive plants, soil erosion, and plant community type conversion. Developed detailed recommendations for habitat management. Surveys resulting in the documentation of seven special-status plants and multiple sensitive plant communities.

John Muir Land Trust Open Services Contract Contra Costa County, CA

Senior Ecologist and Computer Mapping Specialist. Provided a wide variety of services to this land trust, which owns and manages a large number of properties throughout Contra Costa County. Services included rare plant and wildlife surveys, habitat assessments, providing habitat management recommendations, and preparing digital maps and online resource content.



30 Years of Experience

20 Years with Vollmar

BA, Physical Geography

University of California, Berkeley

CHRISTOPHER JASPER

STAFF BIOLOGIST

About

Mr. Jasper has 8 years of experience sampling and studying fish from a wide variety of California's aquatic ecosystems. His work has included sampling and studying out-migrating Chinook Salmon, a drought impact study on fish populations through sampling rivers and creeks across California, and monitoring fish populations in the northern California Delta and Suisun Marsh. From these studies, he has gained substantial knowledge in the life histories, ecology, and conservation challenges of California salmonids and other native species. Mr. Jasper has experience in monitoring the succession of fish species and water quality prior, during, and following restoration of several large restoration projects in the California Delta and Suisun Marsh as well. Beyond fisheries work, he is well versed in water quality monitoring techniques along with visualization and analysis of water quality data in ArcGIS and statistical software. He utilized his expertise in water quality monitoring to study the effects of watershed management on terminal slough systems in the California Delta for his thesis work at UC Davis.

Relevant Experience

Montezuma Wetlands Tidal Restoration Project Solano County, CA

Staff Biologist. Montezuma Wetlands Project includes using approved dredged sediment to restore approximately 1,880 acres of diked and subsided former baylands to a tidal wetland ecosystem including some seasonal wetland features, and approximately 480 acres of upland transition zone habitat. There are approximately 600 acres of the property that have been restored into low intertidal marsh, high intertidal marsh, subtidal marsh, and transitional upland buffer zones. Recently in October of 2020 this area was breached, and the adjacent Montezuma Slough waters have inundated the site, beginning the process of ecological succession. Mr. Jasper has aided with the establishment of a fish monitoring plan for the site along with establishing performance criteria of the site for salmonids and other native fish species. He has also conducted monthly bird surveys for birds utilizing the newly restored tidal habitat and provided nesting bird monitoring for western snowy plover and California least terns during construction activities on the site in the winter and spring of 2021.

Fenston Ranch Preserve Monitoring Madera County, CA

Staff Biologist. Conducted biological monitoring for California tiger salamander and vernal pool brachiopods across vernal pools throughout the Fenston Ranch Preserve.

Lazy K Ranch Vernal Pool Monitoring Madera County, CA

Staff Biologist. Conducted vernal pool hydrology surveys, vernal pool brachiopod surveys, Swainson's Hawk and Burrowing Owl nesting surveys, and general biological inspections for the site.

Environmental Stewardship Foundation Preserve Monitoring Placer, El Dorado, and Sacramento Counties, CA

Staff Biologist. Assisted in the monitoring of 13 preserves managed by Environmental Stewardship Foundation. Habitat types include vernal pool grasslands, oak woodland, and riparian corridors. Conducted surveys including biological inspections and general inspections.

City of Roseville Open Space Preserves Long-Term Monitoring Placer County, CA

Staff Biologist. Assisted in the monitoring of 25 preserves owned and managed by the City of Roseville. Habitat types include vernal pool grasslands, oak woodland, and riparian corridors. Conducted surveys including aquatic invertebrate surveys, vernal pool floristics, vernal pool hydrology monitoring, invasive weed species monitoring, and biological inspections.



8 Years of Experience

3 Years with Vollmar

MS, Ecology and Conservation

University of California, Davis

BA, Watershed Science and Management

University of California, Davis

LINNEA NEUHAUS

SENIOR ECOLOGIST

About

Ms. Neuhaus has a unique professional background combining non-profit, government, and consulting work. Her undergraduate work focused on ecology, botany, and GIS, and she has since gained a wide range of experience and technical skills in the field. She holds federal and state permits to survey for California red-legged frog, California tiger salamander, and vernal pool large branchiopods. She has experience with survey methods such as California Rapid Assessment Method (CRAM), electroshocking, seining, dipnetting, mist netting, night spotlighting, and water quality testing. She is proficient in ArcGIS, Microsoft Office, and Adobe Creative Suite software and data collection using Trimble GPS units.

Relevant Experience

SLVWD Consolidation of Bracken Brae and Forest Springs Mutual Water

Companies Boulder Creek, CA

Senior Ecologist. Conducted special-status species habitat assessment and plant community mapping along a proposed pipeline alignment for the San Lorenzo Valley Water District within North Coast coniferous forest and cismontane woodland habitats along with mapped potential jurisdictional margins along Boulder Creek. Provided recommended avoidance and minimization measures for special status-species known to the region such as foothill yellow-legged frog, California red-legged frog and Marbled Murrelet.

City of Roseville Open Space Preserves Long-Term Monitoring

Placer County, CA
Project Manager and Designated Biologist. Annual biological monitoring of 31 preserves owned and managed by the City of Roseville. The preserves encompass vernal pool grasslands, oak woodlands, and riparian corridors, and survey categories include biological inspections, nesting bird, vernal pool invertebrate, floristic, and hydrology monitoring, upland vegetation monitoring, and oak regeneration monitoring. Survey results are compiled in an annual monitoring report evaluating the efficacy of existing management practices, and recommendations are made to improve future management actions.

City of Healdsburg Biological Monitoring Projects

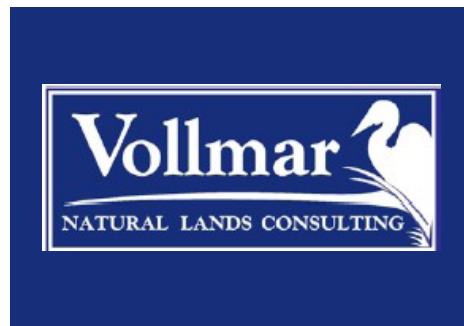
Sonoma County, CA
Project Manager and Designated Biologist. Managing and conducting biological monitoring and pre-construction surveys for a variety of projects for the City of Healdsburg Wastewater Treatment Plant. Projects completed to date include: monitoring the installation of a new water main beneath Dry Creek, monitoring an expansion of the City's recycled water pipeline system, monitoring an emergency bank repair project within a water treatment pond, and preparing a Riparian Restoration Plan and monitoring mitigation plantings. Surveys and monitoring are typically conducted for California red-legged frog, western pond turtle, yellow-legged frog, steelhead, California tiger salamander, and nesting birds.

Montezuma Wetlands Project

Solano County, CA
Staff Biologist. This project involves using approved dredged sediment to restore approximately 1,880 acres of diked and subsided former baylands to a tidal wetland ecosystem including some seasonal wetland features, and approximately 480 acres of upland transition zone and vernal pool habitat. Monitoring involves wildlife and botanical surveys, including bird, mammal, fish, amphibian, invertebrate, botanical, and vegetation surveys.

La Purisima Conservation Bank Baseline Biological Monitoring

Santa Barbara County, CA
Staff Biologist. Annual biological monitoring including stock pond hydrology monitoring, stock pond amphibian larvae surveys, night spotlight surveys for California red-legged frog, and upland special status species surveys (reptile cover board monitoring and bird monitoring), as required by the La Purisima Conservation Bank Enabling Instrument (BEI).



11 Years of Experience

8 Years with Vollmar

BS, Environmental Science and Management

University of California, Davis

SHAWN MACLEAN, PE

PRINCIPAL-IN-CHARGE

About

Shawn has over 20 years of professional experience in mechanical engineering design and project management in HVAC for a variety of projects with a focus on energy efficient design. Shawn's project experience includes public and industrial projects for both new and renovation construction projects. In 2019, Shawn was listed as one of Consulting-Specifying Engineer's 40 under 40 and in 2016, she was awarded Mechanical Engineer of the Year by PM Engineer.

Relevant Experience

Atherton Civic Center / Living Building Atherton, CA (*LEED Platinum, + WELL Building Goals*)

Martial Cottle Park Santa Clara, CA

Mountain View Police Department Renovations Mountain View, CA

Saratoga Conservation Center for Wildlife Care Saratoga, CA (*LEED Silver Goal*)

Alameda County Environmental, Health (EH) Department HVAC System Replacement Phase 1 Alameda, CA

Colusa Pediatrics Study (CPC) Water Treatment Study Colusa, CA

Coit Tower San Francisco, CA

Shoreline Recreation and Aquatics Center Shoreline, CA (*LEED Gold Goal*)

San Francisco State University Mashouf Wellness Center San Francisco, CA (*LEED Platinum*)

San Jose State University Student Recreation and Aquatics Center Master Plan San Jose, CA

Pomona College Rains Athletic Center Claremont, CA (*LEED Gold Goal*)

Apple Wellness Center Cupertino, CA

Filipino Cultural Center San Francisco, CA

CuriOdyssey Masterplan San Mateo, CA

African American Museum and Library at Oakland (AAMLO) Refresh Oakland, CA

Electric Vehicle Company Network Operations Center Confidential Location, CA

Microsoft Silicon Valley Campus Mountain View, CA (*LEED Platinum Goal, LBC Water Petal Certification Goal, and Well Building Certification Goal*)

Intuit Headquarters Mountain View, CA (*LEED Platinum Certified*)

4th and Harrison San Francisco, CA (*Net Positive Energy + LEED Platinum Goals*)



20 Years of Experience

11 Years with Interface Engineering

BS, Mechanical Engineering

California Polytechnic State University

Professional Mechanical Engineer

CA M34857

Resumes includes experience prior to Interface Engineering

THOMAS JUN, PE

LEAD ELECTRICAL

About

Thomas Jun has over 17 years of experience in electrical engineering, project management and construction management. Through years of experience, he has been accustomed to an agile environment where multiple projects require concurrent attention and task management. He works effectively in both self-managed and team-based environments while maintaining high ethical and quality standards, a professional demeanor, and cooperative attitude. His project responsibilities have included assistance with the development and implementation of plan recovery for off-schedule and unanticipated eventualities; team project lead, including facilitation of communication and interaction amongst the functional representatives; and preparation and coordination of meetings between Mechanical, Electrical, Plumbing, Civil & Fire.

Relevant Experience

Sunnyvale Water Pollution Control Plant Administration-Laboratory Building
Sunnyvale, CA (LEED Gold)

Improve Peralta Oaks North Public Safety and Administrative Headquarters
Oakland, CA

Cow Creek Admin Office (CC50) Systems Repair Death Valley, CA

Samsung Semiconductor TEC Expansion San Jose, CA

Ubiquitous Energy (UE Betsy Ross) Santa Clara, CA

One De Haro San Francisco, CA (LEED Gold Goal)

Oakland Unified School District (OUSD) Cole Administrative Center Oakland, CA

2400 Sand Hill Renovation Menlo Park, CA

2375 Shattuck Ave Tenant Improvement Berkeley, CA

Rodan and Fields, Headquarters Office Full Tenant Improvement San Ramon, CA

Sunset Development Tenant Improvement San Ramon, CA

101 Utah Laboratory San Francisco, CA

2710 Sand Hill Elevator Addition Menlo Park, CA

Sandia C964 Building Condition and Resiliency Assessment Report Livermore, CA

SAP, New Construction Building and Parking Garage South San Francisco, CA

The Carnegie Building, Historic Building Renovation Alameda, CA

Contra Costa County 2380 Bisso Lane HSD IT Data Center Concord, CA

SCTR Proposal Building J Renovation Daly City, CA



17 Years of Experience

3 Years with Interface Engineering

BS, Electrical Engineering

University of California, Santa Cruz

Professional Electrical Engineer

CA E19320

Resumes includes experience prior to Interface Engineering

ROBERT GANNON, RCDD, RTM, ICP3

LEAD INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

About

Robert has over 24 years of telecommunications experience with impressive and wide-ranging functional roles. He has performed as an installation Technician, Systems Engineer, Regional Operations Manager, End User RCDD/PM at two, Healthcare organizations. He serves in the role of Senior Consultant with an emphasis on ICT Structured Cabling and physical infrastructure. He has been part of an integrated project delivery team (IPDT), embedded for two years with the design teams for two concurrent hospital construction projects.

Relevant Experience

City of Sunnyvale Project 8.3 Cleanwater Center Technology Sunnyvale, CA

NPS Whiskeytown National Recreation Area Ranger Operations Building Replacement Redding, CA

Las Positas College Building 2100 Academic Support and Office Building Livermore, CA (*LEED Silver Goal*)

Oakland Unified School District Cole Administrative Center Oakland, CA

Apple Culver City, CA

Goldman Sachs San Francisco, CA

Morgan Stanley San Francisco, CA

Guidepost Solutions Office Relocation Oakland, CA

Syska Hennessy Group, Office Relocation San Francisco, CA

20th Century Fox Entertainment, Bundy Studios Culver City, CA

Family Guy North Hollywood, CA

Redding Courthouse Redding, CA

Pacific Gas & Electric Livermore, CA

Capitol Park Hotel Mercy Housing Sacramento, CA

The Osprey Redmond, CA

Maudelle 2001 Ashby Berkeley, CA

Oceanwide Center LLC, Multiuse San Francisco, CA

Santa Monica Mountains National Recreation Area Paramount Ranch Paramount Ranch, CA

Stanford School of Medicine 1215 Welch Road Palo Alto, CA

Folsom Lake College New Science Building Folsom, CA



24 Years of Experience

3 Years with Interface Engineering

Associates in Electrical Construction & Maintenance

Los Angeles Trade Technical College

Registration

Registered Communications
Distribution Design (RCDD)

Registered Telecommunications Project
Management (RTPM)

iBwave Design Certified
Level 3 (iCP3)

*Resumes includes experience prior to
Interface Engineering*

RICK LASSER, CCP, CxA, CMVP, LEED AP

SENIOR SCADA DESIGNER

About

Rick brings over 35 years of experience in the construction and engineering industry. Rick has a BSc degree Electrical Engineering, is a Certified Commissioning Professional, CCP - Building Commissioning Association, Certified Commissioning Authority, CxA - AABC Commissioning Group, a Certified Energy Manager, CEM and a Certified Measurements and Verifications Professional, CMVP - Association of Energy Engineers, and a LEED Accredited Professional, and a Deputy Inspector, Smoke Control City of Los Angeles.

Rick's expertise includes, Commissioning and Retro- Commissioning, extensive knowledge of codes and regulations, and is considered a specialist in design and commissioning of control systems. His achievements include design, specification and implementation of the automatic control of the Natural Ventilation System of the new San Francisco Federal Office Building, a first in the nation.

Relevant Experience

Confidential Technology Campus CUP Peer Review Sunnyvale, CA

San Francisco International Airport New All-Electric Central Plant
San Francisco, CA

LAX Central Utility Plant Los Angeles, CA (*LEED Gold/ First in Aviation*)

Google Spruce Goose Playa Vista, CA

Los Angeles Mission College Modular Central Plant Sylmar, CA

Los Angeles Pierce College Central Plant Los Angeles, CA

Los Angeles Valley College Central Plant Los Angeles, CA

San Bernardino Valley College Central Plant San Bernardino, CA

Kaiser Modesto Central Plant Modesto, CA

Kaiser Antioch Central Plant Antioch, CA

Kaiser Anaheim Central Plant Anaheim, CA

OSamsun Green Tomorrow Seoul, Korea

ABC Riverside HHW System Assessment Burbank, CA

T-Mobile Cell Center Renovation Kingsburg, CA

T-Mobile Cell Las Vegas Call Center Las Vegas, CA

T-Mobile Cell Rochester Call Center Rochester, CA



35 Years of Experience

4 Years with Interface Engineering

BS, Electrical Engineering

Alexandria University, Egypt

Registration

Certified Commissioning Professional (CCP), Building Commissioning Association

Certified Energy Manager (CEM), Association of Energy Engineers

Certified Measurement & Verification Professional (CMVP) Association of Energy Engineers

LEED Accredited Professional Building Design + Construction

Deputy Inspector, Smoke Control, City of Los Angeles

Resumes includes experience prior to Interface Engineering

SLVWD: DESIGN OF THE FOREMAN PRESSURE BREAK STRUCTURE REPLACEMENT	SANDIS/ INTERFACE/HKA/ GRASSETTI /BIGGS CARDOSA																							Task Hours	Total Task Fee
	Director Engineering /PIC	Project Manager	Project Engineer	Design Engineer	Field Surveyors	Survey Project Manager	Project Surveyor	PIC (Interface)	Associate Principal (Interface)	Project Manager (Interface)	Senior Project Engineer (Interface)	Drafter (Interface)	Principal Geotech (HKA)	Senior Engineer Geotech (HKA)	Project Manager (Grassetti)	Project Engineer (Grassetti)	Archaeologist (Grassetti)	Biologist (Grassetti)	Graphics/WP (Grassetti)	Project Manger (Biggs)	Project Engineer (Biggs)	Design Engineer (Biggs)	CAD Tech (Biggs)		
2023 Hourly Charge Rate*	\$300	\$250	\$180	\$135	\$350	\$250	\$175	\$325	\$265	\$245	\$210	\$145	\$240	\$200	\$185	\$155	\$135	\$125	\$80	\$265	\$177	\$163	\$155		
Task 1: Topographic Survey																									
Topographic Survey					12	8	12																	32	\$8,300
Task 2: Geotechnical/ Geohazard Investigation																									
Geotechnical Investigation													20	40										60	\$12,800
Geotechnical Report													20	40										60	\$12,800
Task 3: 30% Design (Plans, Specifications & Estimates)																									
Prepare Preliminary Plans	8	48	48	50				4	10	10	10	45								8	30	20	8	299	\$56,745
Prepare Specifications	2	6	8	4					2	2	2											2		28	\$5,846
Prepare Cost Estimate	2	8	8	16																1	6	2		43	\$7,853
Task 4: 60% Design (Plans, Specifications & Estimates)																									
Prepare Plans	8	36	40	48				4	10	10	10	45								9	46	32	30	328	\$60,498
Prepare Specifications	2	6	8	4					2	2	2									1	3	3		33	\$6,805
Prepare Cost Estimate	2	4	6	16																2	8	4		42	\$7,438
Task 5: 90% Design (Plans, Specifications & Estimate)																									
Prepare Plans	6	32	40	48				4	10	10	10	45								13	24	8	6	256	\$48,432
Prepare Specifications	2	6	8	4					2	2	2											2		28	\$5,846
Prepare Cost Estimate	2	4	6																	1	3			16	\$3,476
Task 6: Final Design (Plans, Specifications & Estimate)																									
Prepare Final Plans	6	24	12	24				2	4	4	4	28								4	6			118	\$22,912
Prepare Final Specifications	2	2	6	4					2	2	2										1		4	25	\$4,957
Task 7: Bid Phase																									
Respond to Bidder's Questions	2	8	4	4					2	2	2									1	6			31	\$6,627
Reissue Plans with RFI's and Clarifications	2	6	4	8					2	2	2	18											2	46	\$8,260
Task 8: Construction Phase																									
Pre Construction Meeting		8	8																	2				18	\$3,970
Site Visits (6)	8	24	48						8	4	8									6	36			142	\$29,782
Respond to RFI's and Review Submittals	4	48	40	20					16	16	18									8		32		202	\$42,376
Conduct a final site walk and create punch list			8	8					8	4	8										8			44	\$8,716
Prepare Record Drawings		6	32	32					4	4	4	24											4	110	\$18,560
Totals	58	276	334	290	12	8	12	14	82	74	84	205	40	80	0	0	0	0	0	56	177	105	54	1961	\$382,999
Project Expenses Estimate																									

Additional Task if Needed: Environmental Documentation																									
Environmental Documentaion / MND (ADIS, DIS, Final IS)															100				20					120	\$20,100
Biological Resources Study																		65						65	\$8,125
Cultural Resources Report																	50							50	\$6,750
Noise/Air Quality Report																40								40	\$6,200

Notes:
1. Hours and staff assignments may be adjusted by the consultant as needed to implement the tasks described during the course of the project.

