CITY OF SANTA ROSA TRANSPORTATION AND PUBLIC WORKS
PROJECT WORK ORDER NO. A010135-2016-17

PROJECT NAME: **SEISMIC UPGRADES AND IMPROVEMENTS PHASE 5-R9A, R16 AND R17 AND VFD AND FIRE PUMP ADDITIONS AT S16 AND S17**

CITY PROJECT MANAGER: **ANDY WILT**

CONSULTANT PROJECT MANAGER: **DAVE COLEMAN**

SCOPE OF SERVICE: See Consultant's Scope of Services/Proposal for Services and Fee Schedule dated November 13, 2020, attached as Exhibit B-1.

START DATE: **JANUARY 2021** COMPLETION DATE: **DECEMBER 2022**

CHARGE NUMBER FOR PAYMENT: **55764**

NOT-TO-EXCEED AMOUNT FOR THIS PROJECT: **$1,035,400** AW AW TD TD

TERMS AND CONDITIONS: This Project Work Order is issued and entered into as of the last date written below in accordance with the terms and conditions set forth in the "Master Professional Services Agreement with Brelje & Race Consulting Civil Engineers**,** Agreement No. A010135," dated October 11, 2016, which is hereby incorporated and made part of this Project Work Order. In the event of a discrepancy or conflict between the terms and conditions of the Project Work Order and the Master Agreement, the Master Agreement shall govern.

CITY OF SANTA ROSA,
A Municipal Corporation

By: _____ Date: _____

_____
Chair, Board of Public Utilities

BRELJE & RACE CONSULTING CIVIL ENGINEERS
A California corporation

By: David F. Long
David F. Long (Jan 5, 2021 17:41 PST) Date: Jan 5, 2021

Name: David F. Long

Title: President

By: David Y. Coleman
David Y. Coleman (Jan 6, 2021 09:55 PST) Date: Jan 6, 2021

Name: David Y. Coleman

Title: Treasurer

APPROVED AS TO FORM:

By:
Jessica Mullan (Jan 11, 2021 15:54 PST)
Santa Rosa City Attorney's Office

Attachments: Exhibit B-1 - Consultant's proposal and fee for services for this Project Work Order

Brelje & Race
CONSULTING ENGINEERS

November 13, 2020

Andrew Wilt, P.E., Associate Civil Engineer
City of Santa Rosa
Transportation and Public Works Department
69 Stony Circle
Santa Rosa, CA 95401

Subject: Seismic Upgrades and Improvements Phase 5 – Revised Cost Proposal
Engineering Design Services under Master Professional Services Agreement
B&R File No. 4746.00

Dear Andy:

Brelje & Race Consulting Engineers is pleased to submit the enclosed revised cost proposal for the subject project. The cost proposal is amended in accordance with your comments and requests for revisions via a September 24, 2020 e-mail.

In accordance with the current Master Agreement for Professional Services with Brelje & Race Consulting Engineers for Engineering Services, we propose to accomplish the work described in our proposal on a time and materials not-to-exceed basis within a budget of $1,035,400. Since the City generally requests that ten percent of the total proposed budget be allocated as a contingency fund for unanticipated extra work, we have included this amount in the total budget.

Also enclosed is our Services Rate Schedule. Please note that our hourly rates used to develop this fee are inclusive of most expenses. Unless requested by the City, Brelje & Race does not charge separately for expenses that are traditionally recouped from the City as "reimbursable", such as mileage, surveying materials, copies of recorded documents, and computer maintenance and equipment costs.

Respectfully yours,

BRELJE & RACE

David Y. Coleman, P.E.
Associate Principal
enc.

Seismic Upgrades and Improvements Phase 5 - R9A, R16 & R17 and VFD and Fire Pump Additions at S16 & S17

City of Santa Rosa

TASK, WORK HOUR and COST TABULATION

Rev. November 13, 2020

TASK	DESCRIPTION	WORKHOURS											
		Coleman Associate Principal	*Bryant* Associate, Lead	*Stetina* Associate	*Potter/Brock* Senior Engineer	Engineering Technician	CAD Technician	Senior Planner	Technical Writer	Subconsultant ($) ZFA	Subconsultant ($) A T.E.E.M.	Subconsultant ($) Group Delta and Driller	
DESIGN DEVELOPMENT													
1 Background Information Review	1.01 Review existing relevant documents	4	8	24	16	24				$1,000	$1,000		$15,600
	1.02 Prepare memo and request additional information	1	2	8	4	8							$4,080
	Subtotal	**5**	**10**	**32**	**20**	**32**	**0**	**0**	**0**	**$1,000**	**$1,000**	**$0**	**$19,680**
2 Project Refinement	2.01 Kick-off meeting and notes	6	3	4	2								$3,005
	2.02 Hydraulic modeling	12	16	24		60							$19,020
	2.03 Comparative alternatives analysis	8	24	48		40			8	$500	$1,000		$23,900
	2.04 Review with City staff	2	4	2	2								$1,970
	Subtotal	**28**	**47**	**78**	**4**	**100**	**0**	**0**	**8**	**$500**	**$1,000**	**$0**	**$47,895**
3 Preliminary Design	3.01 Field visits, coordination, alternatives analysis and update	12	16	24	16	12	8		2	$2,500	$4,000	$7,500	$30,440
	3.02 Preliminary design plans	16	20	64	40	60	96	0	0	$500	$1,000		$50,980
	3.03 Preliminary design memo and review with City	4	8	32	16	24			4				$15,600
	Subtotal	**32**	**44**	**120**	**72**	**96**	**104**	**0**	**6**	**$3,000**	**$5,000**	**$7,500**	**$97,020**
ENVIRONMENTAL AND PUBLIC OUTREACH													
4 Env. Documentation and Public Outreach	4.01 CEQA evaluation and recommendation letter	1		2	2			12					$3,080
	4.02 Project description	4	4						2				$1,840
	4.03 Assistance with public inquiries	4	8				8		2				$3,740
	Subtotal	**9**	**12**	**2**	**2**	**0**	**8**	**12**	**4**	**$0**	**$0**	**$0**	**$8,660**
CONSTRUCTION DOCUMENTS													
5 40% Progress Design	5.01 Base plan sheets		1	4	4	4	32						$6,795
	5.02 40% improvement plans	28	76	114	96	144	120	0	0	$13,800	$13,000		$125,650
	5.03 40% cost estimate	1	2	16	8	16							$7,560
	5.04 40% design memo	2	4	24	8	24			4				$11,320
	5.05 40% design review meeting and minutes	4	3	4									$2,205
	Subtotal	**35**	**86**	**162**	**116**	**188**	**152**	**0**	**4**	**$13,800**	**$13,000**	**$0**	**$153,530**
6 75% Progress Design	6.01 Incorporate 40% design comments	2	4	24	16	24	32						$16,880
	6.02 Structural analysis		2		8					$4,000			$5,910
	6.03 75% improvement plans	20	64	76	48	104	96	0	0	$11,300	$28,000		$108,440
	6.04 75% technical specifications	4	8	48	24	40	0	0	32	$1,500	$10,500		$37,640
	6.05 75% cost estimate	1	2	16	6	8					$1,500		$7,520
	6.06 75% design memo	1	2	16	6	16			4				$7,620
	6.07 75% design review meeting and minutes	4	3	4									$2,205
	Subtotal	**32**	**85**	**184**	**108**	**192**	**128**	**0**	**36**	**$16,800**	**$40,000**	**$0**	**$186,215**
7 90% Progress Design	7.01 Incorporate 75% design comments	2	4	16	8	24	24						$12,680
	7.02 90% improvement plans	10	32	48	40	80	72	0	0	$16,050	$23,000		$86,030
	7.03 90% technical specifications	2	4	20	16	24	0	0	8	$750	$4,340		$17,590
	7.04 Edits to "front-end" specifications	2	4	16		8			8				$6,360
	7.05 90% cost estimate	1	2	12	8	8					$660		$6,280
	7.06 90% design memo	1	2	16	4	16			4				$7,240
	7.07 90% design review meeting and minutes	4	3	4									$2,205
	7.08 Construction permit applications	2	4	24	4	24	16						$12,360
	Subtotal	**24**	**55**	**156**	**80**	**184**	**112**	**0**	**20**	**$16,800**	**$28,000**	**$0**	**$150,745**
8 100% Construction Documents	8.01 Incorporate 90% design comments	2	4	20	8	24	16			$2,000			$14,340
	8.02 Address plan check comments and obtain permits		4	24	8	28	16			$3,650	$2,700		$19,630
	8.03 Final documents package	2	4			12	8		8				$4,940
	8.04 Submit digital files		4				8						$1,900
	Subtotal	**4**	**16**	**44**	**16**	**64**	**48**	**0**	**8**	**$5,650**	**$2,700**	**$0**	**$40,810**
9 Supplemental Services[1] for Additional Buildings	9.01 Geotechnical analysis and report	4	2		56				1	$5,000	$5,000	$17,000	$38,980
	9.02 Generator Building Design Documents	12	24	56		44	20		4				$27,740
	9.03 Assistance with generator building permitting	1	2	8		8	4			$1,500	$200		$5,580
	Subtotal	**17**	**28**	**64**	**56**	**52**	**24**	**0**	**5**	**$6,500**	**$5,200**	**$17,000**	**$72,300**
CONSTRUCTION PHASE SERVICES													
10 Bidding and Construction Phase Services	10.01 Bidding assistance	4	8	8	4					$1,500	$2,200		$8,420
	10.02 Submittal review	4	8	16	16	24				$5,000	$45,000		$62,040
	10.03 RFI response	4	8	16	16	16				$4,000	$8,500		$23,380
	10.04 Design assistance through construction	8	16	12	8	16	16			$3,500	$24,000		$40,720
	Subtotal	**20**	**40**	**52**	**44**	**56**	**16**	**0**	**0**	**$14,000**	**$79,700**	**$0**	**$134,560**
	Total Hours	206	423	894	518	964	592	12	91	N/A	N/A	N/A	
	Hourly Rate	$210	$195	$195	$190	$145	$140	$175	$110	N/A	N/A	N/A	
	Subtotal Cost	$43,260	$82,485	$174,330	$98,420	$139,780	$82,880	$2,100	$10,010	$78,050	$175,600	$24,500	

SUBTOTAL	$839,115	(EXCLUDES SUPPLEMENTAL SERVICES)
REPRO & PLOT	$5,000	
CONTINGENCY 10%	$83,911.50	(EXCLUDES SUPPLEMENTAL SERVICES)
SUBCONSULTANT MARK-UP 10%	$24,945	(EXCLUDES SUPPLEMENTAL SERVICES)
SUPPLEMENTAL SERVICES	$82,400	(INCLUDES SUBCONSULTANT MARK-UP AND CONTINGENCY)
TOTAL	**$1,035,400**	

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Brelje & Race
CONSULTING ENGINEERS

SERVICES RATE SCHEDULE
EFFECTIVE MARCH 1, 2020

PROFESSIONAL SERVICES

Senior Principal	$225.00/hour
Associate Principal	210.00/hour
Senior Project Advisor	200.00/hour
Associate	195.00/hour
Senior Engineer	190.00/hour
Engineer	170.00/hour
Engineering Technician	145.00/hour
Senior Planner	175.00/hour
Planner	145.00/hour
Senior Surveyor	175.00/hour
Surveyor	160.00/hour
Survey Technician	140.00/hour
CAD Technician Supervisor	150.00/hour
CAD Technician	140.00/hour
Construction Engineer	160.00/hour
Construction Technician 2	145.00/hour
Construction Technician 1	125.00/hour
Technical Writer	110.00/hour

EXPERT WITNESS & MEDIATION SERVICES
$500.00/hour

FIELD SURVEYING

One-man Party (Including Survey Equipment & Vehicle)	$195.00/hour
Two-man Party (Including Survey Equipment & Vehicle)	$252.00/hour
Three-man Party (Including Survey Equipment & Vehicle)	$320.00/hour

CLERICAL SERVICES
$85.00/hour

OUTSIDE CONSULTANTS
Cost + 10% Handling Charge

OUTSIDE PLOTTING AND REPRODUCTION
Cost + 10% Handling Charge

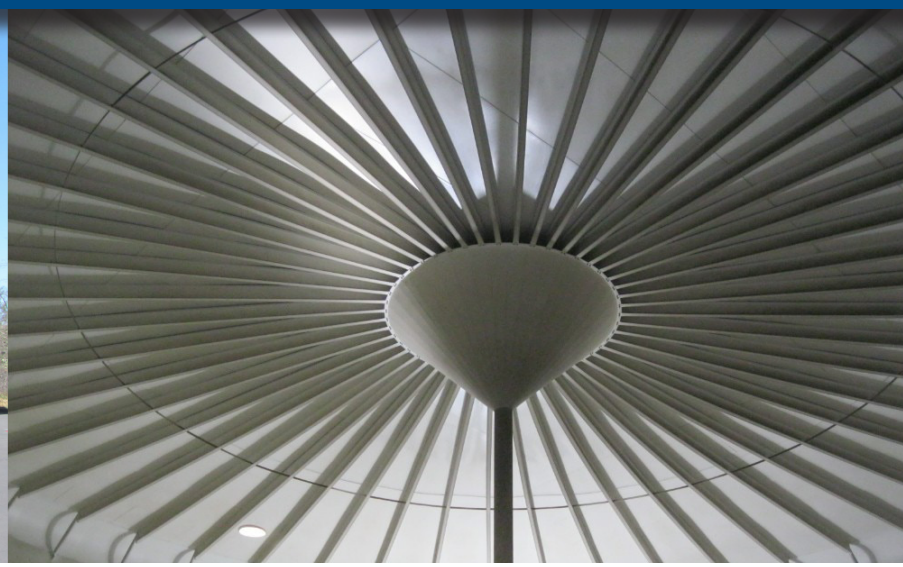
IN-HOUSE PLOTTING

Vellum or Bond	$8.00/sheet
Mylar	20.00/sheet

Note

Brelje & Race does not charge separately for many of the expenses that are traditionally recouped from the Client as "reimbursable". The hourly rates listed above are inclusive of all expenses for vehicle mileage, surveying materials, incidental copying services and computer hardware, software and other information technology costs.

Proposal for:
Engineering Design Services
Under Master Professional
Services Agreement



Seismic Upgrades and Improvements Phase 5

R9A, R16, and R17 and VFD and Fire Pump Additions at S16 and S17

Brelje & Race
CONSULTING ENGINEERS

Prepared for the
City of Santa Rosa

Rev. November 13, 2020

City of Santa Rosa

Brelje & Race
CONSULTING ENGINEERS

November 13, 2020

Andrew Wilt, P.E., Associate Civil Engineer
City of Santa Rosa
Transportation and Public Works Department
69 Stony Circle
Santa Rosa, CA 95401

Subject: Seismic Upgrades and Improvements Phase 5 – Revised Proposal
Engineering Design Services under Master Professional Services Agreement
B&R File No. 4746.00

Dear Andy:

Brelje & Race Consulting Engineers is pleased to provide this revised proposal for design engineering services that will enable the Public Works Department to realize important upgrades to the City's water distribution system - improving the safety and resilience of three water reservoirs as well as the performance and reliability of two pump stations. The proposal originally submitted in September has been revised in accordance with your comments and requests for revisions via a September 24, 2020 e-mail.

Brelje & Race has assembled a core team of individuals well-known to the City. Ben Bryant, George Potter, Dyanna Stetina and myself will combine creativity with an in-depth command of engineering principles to deliver the project's technical design elements, and also manage its administrative aspects. Our local presence affords the opportunity to easily visit the various project sites at any time to resolve questions that arise and meet with City staff to expediently address issues as soon as they are recognized. We take great pride in our ability to maintain open channels of productive communication with City staff.

As this project involves a combination of civil, structural, and electrical improvements, we have partnered with ZFA Structural Engineers and ATEEM Electrical Engineering, both of whom have excellent records of providing professional service to the City. We are also partnering with Group Delta Consultants who will be updating seismic design parameters to their previous work performed on the subject reservoirs in 2017.

We invite you to learn about how we plan to thoughtfully approach this project in the following pages and to discover more about our team and experiences. Our entire team looks forward to working with you and your staff. Our proposal is valid for 90 days. Please feel free to contact me, at (707) 636-3756 or coleman@brce.com, with any questions you might have.

Respectfully yours,

BRELJE & RACE

David Y. Coleman, P.E.
Associate Principal

Introduction

Brelje & Race has been providing professional engineering services in the North Bay Area for over 65 years. We take pride as we continue to serve many clients 30 years or more after their original projects were completed.

The staff of Brelje & Race presently includes 21 professional engineers, an environmental planning and permitting specialist, a LEED accredited professional, an EIT- credentialed engineering technician, a supporting group of CAD technicians, construction inspectors, land surveyors, and clerical personnel. The organization is extremely stable — most of the key members of our firm have been with us for over 15 years.

The Brelje & Race Consulting Engineers office is located on 475 Aviation Boulevard, Santa Rosa, California 95403, in the Airport Business Center.

Brelje & Race's proposal is arranged to reflect the submittal requirements delineated in the Request for Proposals (RFP). Our proposal is outlined as follows:

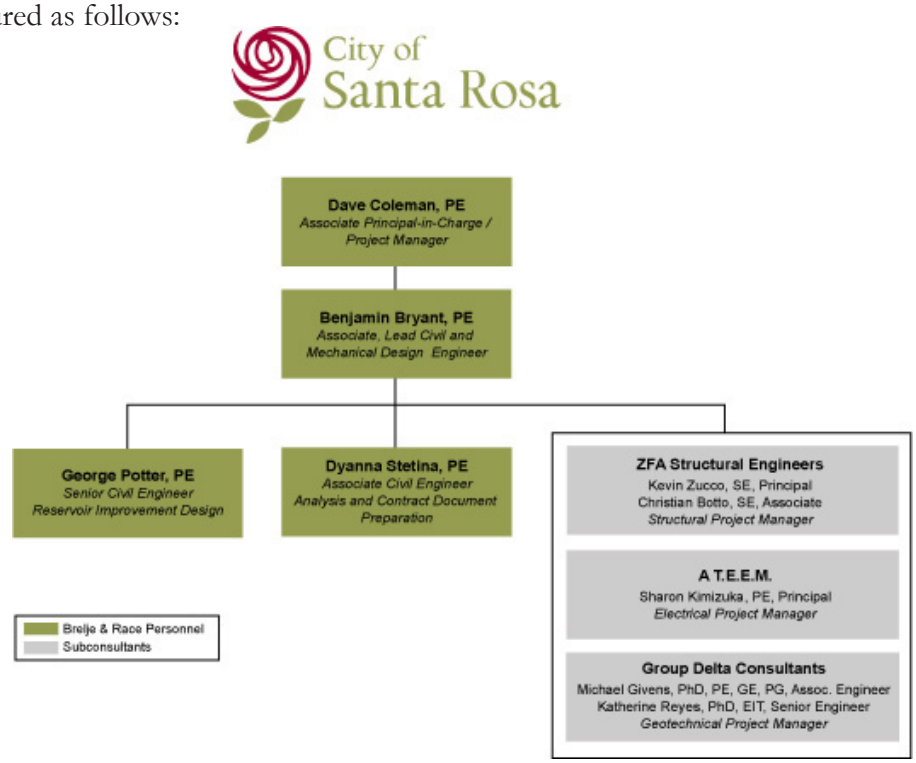
- **Project Team**
- **Team Qualifications and Responsibilities**
- **Work Plan**
- **Reference Projects**
- **Scope of Services**

A cost proposal is provided separately as requested.

The City of Santa Rosa (City) has expressed their desire for complete yet concise proposals. Brelje & Race understands the importance of the City's request. If more information needs to be provided, we are available to discuss at any time.

Project Team

Our team is structured as follows:



Project Team Qualifications and Responsibilities

Brelje & Race offers the City expertise and organizational stability. Our proposed team includes David (Dave) Coleman, Benjamin (Ben) Bryant, Dyanna Stetina, and George Potter. These key members provide the experience, expertise, and the effective communications needed to coordinate and complete the project successfully and on time, while keeping the City's Project Manager fully apprised of progress.

Dave Coleman will serve as project manager for Brelje & Race. Dave personally has considerable civil engineering experience both in general and specific to pump station planning and design over his 35 years as a design consultant. Dave will leverage his decades of experience through the design team and coordinate planning and design activities with the City project manager as well as coordinate with other associated City projects. Dave is project manager for a few City projects including the Generator Replacement Project and the Geysers Delta Connection Improvements Project.

Ben Bryant will be responsible for technical aspects of the design development, construction document preparation and construction cost estimating. Ben was the lead design engineer for the current Generator Replacement Project and the Geysers Delta Connection Improvements Project both with Dave and also the recent City S3 Pump Station and Spring Lake Sewage Lift Station Modifications / Upgrades Projects.

George Potter has over 30 years of field and design experience Mr. Potter has been involved the selection, specification and troubleshooting of various coating and rehabilitation projects over that time particularly specializing in welded steel municipal water tanks.. He is strongly field-oriented and has been responsible for regulatory interaction, design, and construction management related to water and wastewater treatment, storage, and conveyance systems throughout his career. Mr. Potter is the go-to engineer in the firm for water storage tank design and wrote the firm's tank design guidance manual. Mr. Potter has performed field inspection and evaluations on many successful water transmission and storage projects including projects for the City of Santa Rosa, such as A Place to Play Recycled Water Irrigation Pump Station and Seismic Upgrades & Improvements to Tanks R2-A, R4B and R-14. George is currently working with Dave on a couple of Town of Windsor projects including the AWT Clarifier No. 1 Rehabilitation Project.

Dyanna Stetina has extensive water system design experience including public and private treatment, pumping, distribution and storage projects including several for the City. Dyanna will focus on supporting Ben and Dave on design engineering for the pump station upgrades and contract document preparation. Dyanna is currently working with Dave on the West College Emergency Pumping Improvements project.

Joining our team are our subconsultants **Sharon Kimizuka** (A T.E.E.M.) and **Christian Botto** and **Kevin Zucco** from (ZFA Structural Engineers). Brelje & Race has partnered with these subconsultants on various types of projects, including numerous projects for the City of Santa Rosa, such as the S3 Pump Station Modifications and the Brown Farm Pump Station Modifications. Dave is working with A.T.E.E.M. and ZFA on projects currently. **Michael Givens** and **Kathy Reyes** (Group Delta) will also be on the team. Group Delta previously provided geotechnical reporting for the project components in 2017.

Our team brings complementary strengths built on years of experience in site evaluation, project planning, design, construction administration, inspection and operations for municipal and private clients. An example of professional experience for each team member is highlighted in the following table. Specific credentials of our individual team members, including licenses and certifications, are detailed in their resumes located in **Appendix A**.

Team Member	Project Role/Relevant Experience
Dave Coleman, P.E. * Project Manager CA No. 71902	▪ 35 years of experience in the civil engineering field. ▪ Emphasis in pump station design, hydraulic analysis, wastewater facility design, contract administration, quality assurance/control and project start up assistance for both public works projects and private developments. ▪ Currently serving as the Project Manager for the City's projects including: » Backup Generator Replacement for Water and Wastewater Pump Stations » Geysers/Delta Connection Improvements, Generator Replacement » West College Pumping Improvements » Dotti Farm Recycled Water Main Improvements ▪ Served as Project Manager for the City's projects including: » Alvarado Avenue and Mt Olive Drive Sewer and Water Improvements » Laguna Treatment Plant Filter Valve Actuators and Valve Refurbishment-Construction Management » Brown Farm Pond Drain to Llano Trunk
Benjamin Bryant, P.E. Associate Lead Civil and Mechanical Design Engineer CA No. 79218	▪ Associate with over 11 years of experience in the civil engineering field ▪ Design experience in a broad range of projects, including hydraulic and hydrologic modeling, water storage and distribution, wastewater collection and treatment, roadways, and land development ▪ Resident engineering, construction inspection, and project start up assistance for both public works projects and private developments ▪ Experience with the City of Santa Rosa includes: » S3 Pump Station Modifications » Spring Lake Lift Station Improvements and Geotechnical Corrections » Geysers/Delta Connection Improvements » Los Alamos Trunk Sewer Replacement » S6/S9 Pumper Connection » White Oak Drive Water Main Replacement
George Potter, P.E. Senior Civil Engineer Reservoir Improvement Design CA No. C0052700	▪ Senior Civil Engineer with over 30 years of experience in the civil engineering field ▪ Experienced with design, construction management and inspection, serving as designer and/or resident engineer for numerous infrastructure, utility piping, and water tank construction and recoating projects ▪ Projects for the City of Santa Rosa include: » Laguna Treatment Plant Trunk Sewer Interconnect » A Place to Play Recycled Water Irrigation Pump Station » Seismic Upgrades & Improvements, Tanks R2-A, R4B and R-14 » Geysers Recharge Pump Station Expansion ▪ Meadow Lane Pump Station Retrofits
Dyanna Stetina, P.E. Associate Analysis and Contract Document Preparation CA No. 83007	▪ Associate with over 9 years of experience in the civil engineering field ▪ Experienced with water storage tank design, pump station and process design, equipment sizing and selection, piping layouts, plans and specifications preparation, cost estimating, and construction phase assistance ▪ Projects for the City of Santa Rosa include: » South Fulton Trunk Sewer Repair – Fulton Road at Santa Rosa Creek » Silva Avenue and King Street Sewer Replacement » West College High Flow Storage Overflow » Oakmont Treatment Plant Sewer Relocation (in progress) » Cobblestone Drive Zone R2-R4 Connection » King Street Sewer and Water Replacement » Laguna Plant Potable Water Pressure System

1. The individuals proposed for the project have sufficient time in their schedules to allow the needed commitment to this project.
2. *Dave Coleman, our proposed Project Manager, remains committed to ensuring that the Brelje & Race team represents the City with professionalism and integrity, and always performs as an extension of the City Staff. We have prioritized Dave's availability throughout the project life cycle and he will be dedicating between 5 and 15 hours of his time to this project on a weekly basis. A list of his projects that are anticipated to coincide with this one is attached in **Appendix B**.

Subconsultants

A T.E.E.M.

Established in 1988, A T.E.E.M. Electrical Engineering specializes in planning, design, and implementation of water and wastewater electrical power distribution, instrumentation, and Supervisory Control and Data Acquisition (SCADA) systems. The A T.E.E.M. has offices located in Sacramento, CA, Reno, NV, and Kona, HI servicing the western United States.

In their 30 years, A T.E.E.M. has worked on over 1600 projects. including design and construction services for sewer lift stations, tank sites, booster pump stations, water wells, filters for wells, water treatment plants, wastewater treatment plants, SCADA systems (designs, implementations and troubleshooting), and pressure reducing stations. A T.E.E.M. is listed with California Department of General Services (DGS) as a Micro-Business and has been certified by Supplier Clearinghouse as a WMBE.

A T.E.E.M.'s staff experience includes hands on familiarity of process, equipment and control systems for the water and wastewater industry. Their unique experience proves invaluable in understanding industry standards for motor control, communications, PLC programming methods, and graphic screen setup. A T.E.E.M.'s engineers are experienced in PLC programming, radio telemetry design and SCADA systems.

ZFA STRUCTURAL ENGINEERS

ZFA Structural Engineers

For over 40 years, ZFA Structural Engineers has collaborated with public and private clients to help build high quality communities and facilities throughout California and nationally. With a staff of nearly 70 people, the firm has fully integrated offices in San Francisco, Silicon Valley, Sacramento, Santa Rosa, and Napa, including 24 Structural Engineers and 15 Professional Engineers. The firm is both a Federal licensed and a California State licensed Small Business Enterprise (SBE).

ZFA has decades of experience providing structural design and analysis, facility assessments, evaluations, and feasibility studies for public works projects, including wastewater treatment facilities, city halls, administration, public health, courthouse, corporation yard, and essential services facilities, including emergency operations centers throughout the state. Accustomed to the extra requirements of the California Essential Services Buildings Safety Act of 1986, as well as emergency operations and administration needs, the California Building Code Existing Structures chapter, the International Existing Building Code, California Historic Building Code, and ASCE41. With a strong understanding of the public process, ZFA is a trusted advisor for structural design services for local, regional, and state civic centers, fire stations, schools, correctional facilities, law enforcement facilities, maintenance facilities, and more.

GROUP DELTA

Group Delta Consultants

Incorporated in California in April 1986, Group Delta has provided geotechnical and environmental engineering, instrumentation, materials testing and inspection, and construction support services for more than 30 years. Group Delta is staffed by about 100 civil and geotechnical engineers, geologists, environmental engineers and scientists, laboratory and field technicians, deputy grading and construction inspectors, CADD designers and support staff.

Group Delta maintains offices in the cities of Irvine, Torrance, Ontario, Anaheim, and San Diego as well as accredited laboratories in San Diego and Anaheim. Our firm has served clients in both the public and private sectors throughout its history and has developed expertise in various types of Design-Build, Design-Bid-Build, CM/GC, and P3 projects. During the past 34 years, most of our services have involved public works projects that have included tunnels, roads, pavements, storm drains, sewers, water transmission and storage facilities, wastewater facilities, schools, public buildings, bridges, airfields, port facilities, landslides and emergency response/forensic projects.

Work Plan

Project Understanding

The project consists of seismic upgrades and other non-seismic improvements to three existing water storage reservoirs, R9A, R16 and R17, ranging in diameter between 36 feet and 96 feet and pumping capacity improvements and motor controls at two existing water pump stations, S16 and S17. The reservoirs comprise the fifth and final phase as described in the "Reservoir Seismic Upgrade and Improvement Program" report prepared by Brelje & Race, dated December 2002. A "Tank and Pump Station Evaluations" report was prepared by West Yost in 2018 and provided updated recommendations for improvements to the reservoirs, as well as recommendations for improvements at the pump stations.

Reservoir R9A is located off Annadel Heights Drive in eastern Santa Rosa. It is a welded steel tank with a storage capacity of 2 million gallons. The tank was constructed in 1977 and therefore has a number of deficiencies associated with updates to codes and standards. Improvements will include addition, replacement, or modification of tank appurtenances and piping, strengthening the foundation, shell, and roof, and the addition of seismic anchorage.

Reservoir R16, which is also the location of Station S17, is located east of Fountaingrove Parkway, just south of Hadley Hill Drive. It is a welded steel tank with a storage capacity of 250,000 gallons. Reservoir R17 is a welded steel tank with a storage capacity of 750,000 gallons (when fully utilized) which is located behind the City's Fire Station No. 5 that was destroyed during the Tubbs fire near the corner of Fountaingrove Parkway and Newgate Court. Reservoirs R16 and R17 were both constructed in 1994 by the same contractor. Deficiencies at these two newer reservoirs are a result of both updates to codes and standards, and reported errors in the original design calculations. Improvements will include addition, replacement, or modification of tank appurtenances and piping, and strengthening the column, roof, shell, and anchorage.

A summary of the reservoir improvements was provided by the City in the RFP documents, "Pre-Design Report" prepared by Asset Management in June 2020 which correlates with recommended improvements indicated in the "Tank and Pump Station Evaluations" report. A set of 40% design drawings outlining the proposed reservoir improvements was prepared by the City dated Aug 2018 and will be used as a basis of engineering and analysis; however, a complete seismic analysis will be performed for the seismic upgrade of the tanks. Structural analysis will also be provided for installation of the new roof vent openings, new guardrails, access ladders, and nonstructural component anchorage such as piping and electrical controls cabinets.

Geotechnical reports for the water tank sites were performed by Group Delta Consultants dated May 12, 2017. Geotechnical recommendations are compliant with the 2012 International Building Code/2013 California Building Code and applicable reference standards including ASCE 7-10 and AWWA D100-11. A code upgrade has occurred since this time. Group Delta will provide updated seismic design parameters that were presented in the report.

While the reservoirs are offline, the interior and exterior of each will be sand-blasted to bare metal and recoated.

Electrical improvements associated with the tanks are anticipated to include new tank telemetry panels as well as upgraded site lighting with combination flood and area lighting.

New security fencing and gates will also be provided at the R16 site.

Pump Station S16 is located at 4177 Chanate Road, on a parcel adjacent to the Chanate Road exit from eastbound Fountaingrove Parkway. Reservoir R4B, which was previously upgraded in 2010 and is not a part of this project, is located on the same site. The pump station includes two existing 75 HP pumps and has a total existing capacity of approximately 1,700 gpm. Pump Station S17 is located east of Fountaingrove Parkway just south of Hadley Drive, on the same site as Reservoir R16. The pump station includes two existing 75 HP pumps and has a total existing capacity of approximately 1,650 gpm. Both pump station buildings were constructed in 1994 and consist of concrete masonry unit exterior walls, prefabricated wood trusses and a slab on grade floor with concrete spread footings. The buildings are comprised of two rooms with one housing the back-up generator and the other housing the pumps and electrical control equipment.

Brelje & Race is the consultant for the concurrent City project (PID 2256) which includes the replacement of the existing natural gas/propane-powered generators with diesel-powered generators at eighteen water and wastewater pump stations including S-16 and S-17. Preliminary design of the high flow pumps and motors at stations S16 and S17 has been included in the scope of that project to allow for sizing of the replacement generator. Brelje and Race is uniquely positioned to coordinate preliminary and final designs of the high flow pumps and associated appurtenances between the two projects.

To provide further resiliency, the City has determined that high flow (adding an additional 1,500 gpm capacity) pumps will be added to Stations S16 and S17, and the proposed diesel-powered generators are being sized to accommodate simultaneous operation of all three pumps at each site. The City has previously indicated that the total target flow rate goal for both stations is 3,200 gpm. Ultra-low harmonic VFDs (to mitigate harmonics issues that may otherwise arise during pump operation on the pumps on back-up generator power) will be installed for each existing pump and the new high flow pumps. At both sites, modifications will be made to the pump station piping, controls and ancillary equipment as required for the new pump, generator, and VFDs. With the increase in pumping capacity, it is apparent that both sites will require upgraded PG&E services and new motor control centers. The new PG&E service centers will incorporate automatic transfer switches, and manual transfer switches for load bank and portable generator hookups which will require close coordination with the concurrent generator improvements project. The pump stations will be expanded to accommodate the additional equipment, and the roofs will be replaced with a fire-resistant metal roofing system. The City desires to have alternatives to standing seam metal roof system considered including fireproof synthetic shingles.

Existing 150kw generator set at S-17. Replacement generator will be significantly larger capacity and may not fit into existing space.

The initial hydraulic modeling results indicate that the distribution piping for both pump stations is undersized (even when accounting for major pipe looping) to accommodate the desired flow rates without significantly increasing the pipeline pressures near the pump stations which are above the shut-off heads of the existing pumps.

The scope of the seismic upgrades portion of the project and the goal for the pump station improvements portion of the project have been well defined by the City's pre-design report. However, the goal of increase the City's ability to move more water from the Aqueduct Zone at Station S4 up the eastern side of Fountaingrove via Stations S16 and S17 and into Zone 3 appears to be more complex than the scope provided in the RFP documents. It is apparent that additional design development is needed to identify the most feasible project scope.

To maintain water service, construction is planned to be performed in two phases. The improvements to Stations S16 and S17 and Reservoir R16 will be completed in the first phase, and improvements to Reservoirs R17 and R9A will be completed in the second phase. In the first phase, Zones 16 and 17 will be supplied by Reservoir R17, which can receive water from Station S18. During the second phase, Zone 9 will be supplied by Reservoir R9B. Zone 17 could receive water directly from Station S17 when demands are within the range supported by the new VFDs. This area was heavily impacted by the Tubbs fire in 2017 and many lots remain vacant with a corresponding decrease in water demand. While the number of occupied homes will increase before the second phase of construction begins, average demands will likely remain low enough that the VFD will not allow the pump to operate slowly enough to match the very low demands in this zone overnight and at other low-demand periods. To mitigate pressure surges and the cycling of the new pumps a temporary pressure tank at Station S17 or a temporary storage tank at the site of Reservoir R17 will likely be advised.

Due to the increased size of the new generator sets at S-16 and S-17 with the addition of the new high-flow pumps, it is possible that the new generators will not fit within the existing generator rooms while allowing for adequate clearances. At a minimum, major modifications to the existing generator rooms will likely require removal and replacement of the existing generator room floors to provide adequate anchorage, large diameter overhead electrical

conduits, and an increase in openings for new louvers in the existing walls. An additive scope item for the City to consider would consist of building a new generator building complete with a man door, roll-up door for generator set access, sound attenuated louvered openings, and adequate exhaust ventilators. If a new generator building is constructed, the existing generator rooms could be used to house the new high flow pumps instead of housing the pumps in a building addition. It is currently unknown whether the scope of this work should be included in this project or the concurrent generator replacement project and it is therefore included as an additive scope item for the City's review.

Project Approach

Our approach to producing a construction document package that meets the City's objectives for the project will consist of two primary phases: a Design Development Phase and a Construction Documents Phase.

The Design Development phase will be performed primarily to further refine the scope for the pump station improvements portion of the project as outlined in the Project Understanding section above. The hydraulic modeling initially performed to size the back-up generators for S-16 and S-17 for the generator replacement project (PID2256) will be refined to further define alternatives for accomplishing the pump station capacity improvements. The results of the alternatives analysis will be used to finalize the project scope and the design development phase will conclude with the preparation of a preliminary design. The Design Development phase of the project will allow the preparation of construction documents to progress seamlessly during the Construction Documents phase.

As indicated in the Project Understanding section, it is apparent that additional design development is needed to identify the most feasible project scope for the pump station improvements portion of the project. The following alternatives will be considered for increasing the capacity of the existing pump stations:

1. Install a new approximately 350 HP high flow pump at each pump station that is capable of delivering the full 3,200 gpm desired capacity of each pump station. Existing pumps would not be able to operate during this condition since the discharge pressure necessary for the 3,200 gpm flow rate is higher than the existing pump shut-off heads.
2. Replace the two existing pumps with two new approximately 100HP pumps to deliver 850 gpm each (with steeper or more robust pump curves) and install a new 200HP high flow pump to deliver an additional 1,500 gpm when all 3 pumps are operating. This would increase the pump station capacity to the desired 3,200 gpm with all three pumps operating. The new replacement pumps, while operating on VFD's, would still be capable of satisfying the existing operating conditions of the pump stations. This alternative would be fully vetted during the preliminary design phase of the project to determine the scope of improvements which will include an evaluation of suitability of the existing pump cans for the replacement pumps.
3. Perform water distribution system piping improvements (scope to be determined during hydraulic modeling refinement) and install a new minimum 1,500 gpm high flow pump (final size to be determined) that would allow the existing pumps to operate and increase the total pump station capacity to 3,200 gpm when all 3 pumps are operating. Without any water distribution system piping improvements, initial modeling results indicate that the capacity at each pump station could be increased as described in the following while still being able to utilize the existing pumps:
    - The capacity at S-16 could be increased to approximately 2,250 gpm with the installation of a new approximately 125 HP pump that would deliver up to 1,250 gpm while operating the two existing 75 HP pumps (at a point on the curve associated with 65% minimum efficiency) at approximately 500 gpm each.
    - The capacity at S-17 could be increased to approximately 2,900 gpm with the installation of a new approximately 200HP pump that would deliver up to 1,900 gpm while operating the two existing 75 HP pumps (at a point on the curve associated with 65% minimum efficiency) at approximately 500 gpm each.

Design Development

The Design Development phase will begin by completing the review of project background information that began during our proposal preparation. This review will allow us to identify other project issues, constraints, and options for discussion during a kick-off meeting. The kick-off meeting with City staff will provide a forum to finalize project goals and refine or eliminate any of the three alternates for pump station upgrades described above.

Following the selection of pump station upgrade alternatives, additional hydraulic modeling will be performed to fully vet and fully define the scope of these alternatives.

A comparative alternatives analysis will be performed to help guide the selection of the most cost effective, operationally practical, and hydraulically feasible solution. We have regularly provided the City with fully vetted comparative analyses, most recently on the Sonoma Avenue Trunk Sewer Repair, Laguna Treatment Plant Flood Protection, Dotti Farm Recycled Water Pipeline, Cobblestone Drive Zone R2-R4 Water Main Connection, Fulton Road Santa Rosa Creek Crossing Sewer Replacement, and Los Alamos Trunk Sewer Replacement, projects that have helped guide the City toward cost effective solutions.

Once the alternatives analysis is complete, site meetings and a formal progress review meeting will be scheduled with the entire project team including our electrical and structural subconsultants to discuss our assessment and review all of the project elements at the pump station and reservoir sites.

A decision regarding the additive scope item to construct a new generator building rather than a building addition to house the high flow pumps would need to be determined at this time. This work would be closely coordinated with the back-up generator replacement project team.

Preliminary plans depicting the major project elements will be produced along with a preliminary design memorandum to present the basis for decisions made during development of the final project scope.

Construction Documents

Our approach to the Construction Documents phase will follow the City's standard sequence of preparing and submitting progress documents packages for review and comment by the City at the 40%, 75%, 90% and 100% phases. Submittal packages will include plans, specifications, an estimate of probable construction cost, and a design memorandum that are developed to a level commensurate with its percentage of project completion as outlined in the City's "Design Services Terms for Capital Improvement Projects." The design memorandum prepared with each progress package will inform the City of the basis underlying key design decisions and to present questions where feedback from the City on specific issues is desired.

Meetings with the City will be scheduled following each progress package submittal to discuss review comments and any special design considerations that may have arisen since the previous submittal. Between each progress meeting, our Project Manager will maintain frequent contact with the City's Project Manager to provide updates on the progress of design and to discuss questions that may arise. Internal meetings are planned at least once per week to review design developments and ensure good quality control.

SCHEDULE

Figure 1, below, describes our anticipated schedule for project delivery. This schedule assumes that the City will issue a Notice to Proceed the first week of January 2021.

Figure 1. Estimated Project Schedule

Task & Description		Jan-21				Feb				Mar					Apr				May				Jun				
	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Design Development	1. Background Info Review																										
	2. Project Refinement																										
	3. Preliminary Design																										
	3.b. City Review and Review Meeting																										
Environmental and Public Outreach	4. Environmental Documentation and Public Outreach																										
Construction Documents	5. 40% Progress Design																										
	5.b. City Review and Review Meeting																										
	6. 75% Progress Design																										
	7. 90% Progress Design																										
	8. 100% Construction Documents																										

		Jul				Aug				Sep					Oct				Nov				Dec				
	Week	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Design Development	1. Background Info Review																										
	2. Project Refinement																										
	3. Preliminary Design																										
Environmental and Public Outreach	4. Environmental Documentation and Public Outreach																										
Construction Documents	5. 40% Progress Design																										
	6. 75% Progress Design																										
	6.b. City Review and Review Meeting																										
	7. 90% Progress Design																										
	7.b. City Review and Review Meeting																										
	8. 100% Construction Documents																										

Reference Projects

Through Brelje & Race's 65-year history, the firm has provided design and contract administration for over 100 tank projects, ranging in size from 30,000 to over 3 million gallons. Tank projects have included rehabilitation, seismic upgrades, recoating, and new tank design for both municipal and special district clients. The firm also has extensive experience in pump station design including hydraulic modeling, pump selection, station improvement and appurtenance specification. We have selected the following projects that demonstrate our relevant experience, including several projects that directly relate to Water Storage Tank and City Water Pump Station facilities. We encourage you to contact our references to gain additional insight into the superior quality of service that Brelje & Race provides.

S3 Pump Station Upgrades for High Fire Severity Zone

City of Santa Rosa

Brelje & Race provided design services for new pumping and emergency generator facilities at the City's S3 Pump Station intended to improve the service reliability of several of the City's upper pressure zones, R4, R16 and R17, in preparation for a scenario where one or more storage tanks are out of service during a wildfire. The design included installation of a third booster pump at Station S3 capable of increasing the pump station output to 2.88 mgd and providing at least 1,500 gpm of additional fire flow to the upper pressure zones. A new CMU building was added for the generator, and an addition added to the existing pump building. Brelje & Race also provided construction administration for the project. This project serves as a model for future pump station building, roofing, backup generator, and electrical switchgear arrangements. Ben Bryant served as Design Engineer with ZFA providing structural engineering.

Reference	Tracy Duenas, Supervising Engineer, City of Santa Rosa, (707) 543-3952, tduenas@srcity.org
Design Fee	$130,000
Construction Estimate	$1.28 million
Actual Construction Cost	$1.25 million (approximate)
Construction Dates	Completed October 2015

Pump Stations S13 & S14 Upgrades and Reservoir 12A Security

City of Santa Rosa

Brelje & Race provided design services for improvements to increase fire flows at the City's S13 & S14 Pump Stations. The two primary high flow pumps at each site were replaced with larger pumps capable of achieving 1,500 gpm of fire flow in the R14 (uppermost) pressure zone. Associated improvements included replacing the existing generator and pump station building roofs with new fire-proof metal roofs, new lighting, electrical, and fence upgrades, plus additional security improvements at Reservoir 12A. Ben Bryant served as Design Engineer, with ZFA and A T.E.E.M. responsible for structural and electrical engineering, respectively.

Reference	Andrew Wilt, Associate Civil Engineer, City of Santa Rosa, (707) 543-4519, awilt@srcity.org
Design Fee	$122,230
Construction Estimate	S13: $970,000. R12A site security: $75,000
Actual Construction Cost	S13 not constructed. R12A bid approximately $126,000
Construction Dates	2018 to 2020

Tank 8 Site Improvements
City of Rohnert Park

Brelje & Race provided design services for site plan alterations and construction management for the installation of a 900,000 gallon water storage tank, underground water pipeline, access road, and other site improvements. Initial site redesign allowed for future construction of a second water tank on site. Subsequent redesigns responded to site constraints that emerged during construction, realigning the access road and other improvements around protected resources. Brelje & Race provided construction management, keeping the project on track while navigating complex requirements around protecting tribal cultural resources and bridge construction over jurisdictional wetlands. Ben Bryant served as Design Engineer and George Potter as Resident Engineer/Construction Inspector.

Reference	Vanessa Garrett, Assistant City Engineer, City of Rohnert Park, (707) 588-2251
Design Fee	$1.12 million (subconsultants: $250,000)
Construction Estimate	$4.35 million (note: estimate provided by original design engineer)
Actual Construction Cost	$6.39 million
Construction Dates	2018 to 2020

Phases 1 - 3 Seismic Upgrades and Recoating
City of Santa Rosa

Brelje & Race provided design services for the first two phases of this major program to recoat and provide seismic and safety upgrades for all of the City's water storage tanks. Working with the City, Brelje & Race researched and developed the project scope and strategies for implementation. New standard tank details were developed. Methods for construction were proven out during project implementation as some of the seismic retrofits involved removal of the existing tank foundation while the tank remained in place. Brelje & Race provided construction management for the construction of these new City standard retrofits. New specifications were developed for the recoating process as well. Brelje & Race also provided construction management for the third phase of tank recoatings and retrofits with George Potter serving as the resident engineer and construction manager.

Reference	Tracy Duenas, Supervising Engineer, City of Santa Rosa, (707) 543-3952, tduenas@srcity.org
Design Fee	Phase III CM: $123,000
Construction Estimate	Phase I: $1.08 million; Phase II: $1.46 million
Actual Construction Cost	Phase I: $1.44 million; Phase II: $1.39 million
Construction Dates	Phase I – August 2004 through April 2005 Phase II – May 2005 through December 2005

Spring Lake Lift Station
City of Santa Rosa

Brelje & Race provided design services for stabilizing a sinking/unstable ground condition that threatened the integrity of the Spring Lake Lift Station. The project also included addition of operational and safety improvements, new controls and SCADA facilities, a dual-fuel emergency generator, security and work lights, security fencing, and improved vehicular access and turnaround.

The project was an unqualified success and provided the City with a safe and reliable facility that is easy to monitor and maintain. Design and construction included interfacing with PG&E to bring natural gas service to the site, with the

Sonoma County Water Agency to secure an easement over their adjacent property to enable permanent access rights to the lift station site, and with a neighboring homeowners association to negotiate replacement of an old fence along the property line with new security fencing. Ben Bryant served as Design Engineer with A T.E.E.M. providing electrical engineering. George Potter served as construction manager.

Reference	Andrew Wilt, Associate Civil Engineer, City of Santa Rosa, (707) 543-4519, awilt@srcity.org
Design Fee	$102,880
Construction Estimate	$495,900
Actual Construction Cost	$691,400
Construction Dates	2017-2018

Water System Improvements Project, Phases 1 & 2

City of Cloverdale

Brelje & Race provided Federal financing assistance, environmental planning and permitting services, engineering design, and inspection and construction management services for this two phase water system improvement project. The project involved installing new water supply wells, upgrades to existing well stations, refurbishing a filtration unit, recoating existing welded steel tanks, installation of a new 500,000 gallon welded steel tank and roof replacement of an in-ground storage reservoir. In addition to our work on the expansion project, Brelje & Race provided all engineering services required to repair the clarifier section of one of the two original package filtration units. George Potter served as the resident engineer and construction manager.

Reference	Craig Scott, City Engineer / Director of Public Works, City of Cotati (formerly with City of Cloverdale), (707) 792-4610, cscott@cotaticity.org
Design Fee	$113,620
Construction Estimate	Phase I: $598,500; Phase II: $2.39 million
Actual Construction Cost	Phase I: $594,979; Phase II: $2.45 million
Construction Dates	April 2014 through November 2015

Forestry Tank Replacement

Cobb Area Water District

During the 2015 Valley Fire and following cleanup effort, significant portions of the water system were damaged or destroyed, including two water storage tanks in the Forestry service area. It was crucial to replace the tanks and restore fire service capabilities and water supply to remaining residences. This State grant funded project consisted of removal of the existing tank, construction of a larger foundation, and installation of a 200,000 gallon bolted steel tank with associated piping. Brelje & Race assisted with the State funding application, provided boundary and topographic mapping of the site, and prepared plans and specifications for the replacement tank and related improvements. Time between receipt of project funding and tank commissioning was one year.

Photo courtesy of Chernoh Excavating.

Reference	Benjamin Murphy, General Manager, Cobb Area Water District, (707) 987-0277, b.murphycawd@gmail.com
Design Fee	$57,000
Construction Estimate	$455,000
Actual Construction Cost	Unknown (client coordinated bidding)
Construction Dates	March 2017 through December 2017

Water Reclamation Plant AWT Clarifier 1 and 2 Rehabilitation

Town of Windsor

Brelje & Race provided engineering design services for the rehabilitation of two steel clarifiers in two phases. The improvements included mechanical repairs, repairs of steel pitting, recoating of the overhead walkways and complete interior recoating. Brelje & Race also provided construction management for the projects. Dave Coleman was the project & construction manager. George Potter collaborated on the design and served as the construction manager and certified coatings inspector.

Reference	Garrett Broughton, Engineering Project Director, 707-838-1211, gbroughton@townofwindsor.com
Design Fee	$49,800
Construction Estimate	Clarifier 1 $463,200
Actual Construction Cost	Clarifier 1 $322,626
Construction Dates	Construction Dates: Sep 2018-Dec 2018 and June 2020-Sept 2020

Water Storage Tank Recoatings and Access Improvements, Phases 1-3

Town of Windsor

Brelje & Race provided engineering design services for the rehabilitation of five welded steel water storage tanks ranging in size from 100,000 gallons to 2 million gallons. Improvements included complete recoating, improved ventilation, and new tank access and fall protection systems. In addition, Brelje & Race provided construction management for the project. George Potter collaborated on design of the tanks and served as the resident engineer, construction manager and certified coatings inspector during construction.

Reference	Craig Scott, City Engineer / Director of Public Works, City of Cotati (formerly with Town of Windsor), (707) 792-4610, cscott@cotaticity.org
Construction Dates	Sep 2012-May 2014

A T.E.E.M. Electrical Engineers

A T.E.E.M. staff has provided the Electrical Design, Construction Services, SCADA Configuration, and PLC Programming Services for the following City projects:

- **Backup Generators, Water and Wastewater Facilities (in design), City of Santa Rosa** – Electrical Design for replacing existing NG/propane generators with diesel gas generators at 18 City lift stations and water pump stations. Improvements include new generators, pull boxes, new or upgraded transfer switches, and reconnecting existing PLC monitoring.
- **Tank 8, City of Rohnert Park (2020)** – Electrical Design for a new 900,000 gallon water storage tank. Improvements included new power service, seismic valve control, camera system and RTU. The RTU and camera system were designed to match the City standard.
- **A Place to Play Well, City of Santa Rosa (2020)** – Electrical Design for new well at A Place to Play Park. Improvements included new building, power feed, modification of existing main switchboard, MTS, portable generator connection, soft starter pump controls, instrumentation and PLC.
- **Geyser-Delta Connection Improvement, City of Santa Rosa (2019)** – Electrical Design for controlling valves for the Delta Geysers project.

- **S-2 Generator Replacement, City of Santa Rosa (2018)** – Electrical Design for replacing existing NG/propane generator with diesel gas generator. Improvements included new generator, pull boxes, above ground fuel tank, diesel generator and reconnecting existing PLC monitoring. Generator room exhaust was also modified.
- **Farmers Lane Well System Upgrade, City of Santa Rosa (2018)** – Electrical Design for upgrading existing Well Pumps 4-1 and 4-2. Improvements included new building, power feed, main switchboard, MTS, pump controls, instrumentation and PLCs.
- **Spring Lake Lift Station Improvements, City of Santa Rosa (2018)** – Electrical Design for improvements at Spring Lake Lift Station. Design included new utility power meter pedestal, ATS, MTS, generator, motor controls and RTU.
- **Reservoir 12A Site Security Improvements, City of Santa Rosa (2017)** – Electrical Design for improvements at Reservoir 12A. Design included new utility power meter pedestal, lighting controls, area and pole lights.
- **Brown Farm Pond Drain, City of Santa Rosa (2016)** – Electrical Design for improvements at Brown Farm Pond. Design included new utility power meter, panelboard, telemetry panel, control valves and flowmeter. Existing control valves were also replaced.
- **Finished Water Pump Station, City of Vallejo (2018)** – Electrical Design for replacing existing diesel engine driven pumps with new VFD motor controls. Design included outdoor three new Motor Control Centers, manual transfer switches for three MCCs, new electrical in existing electrical/pump building, three 18-pulse (125HP) VFD drives, provisions for five future VFD pumps.
- **Tank No. 3 Glenview Replacement Project, City of San Bruno (2015)** – Electrical Design for replacing existing aboveground tank and chemical system. Improvements included new tank, tank mixer, level switches, tank intrusion monitoring, seismic valve, flowmeter, chemical system, and camera system.
- **City of Woodland, First Ground Level Tank, City of Woodland (2014)** – Electrical & Instrumentation design for a new above ground tank and booster pump station. The station provided power to an existing well and motor controls, generator, RTU, booster pumps and chemical feed system were installed in a new building. The RTU was designed to match the City standard. ATEEM provided the programming for the PLC, master polling PLC, local OI graphics and Central graphics.
- **North Tank 11 and Pump Station, City of Modesto (2010)** – Electrical Design for new reservoir and pump station. Design included new utility meter switchboard, power distribution switchboard, VFD motor controls, MCC, instrumentation, generator, chlorination system, duplex detention pond pump station, camera system and fire/security system.
- **West Pump Station and Reservoir, City of Modesto (2008)** – Electrical Design for new reservoir and pump station. Design included new utility meter switchboard, power distribution switchboard, VFD motor controls, MCC, instrumentation, generator, chlorination system, duplex detention pond pump station, camera system and fire/security system.

ZFA Structural Engineers

ZFA Structural Engineers has provided structural engineering services for numerous tank and pump station projects, including several with the City of Santa Rosa. Recent relevant projects include:

- **Water Tank Seismic Upgrades, City of Santa Rosa (2012)** – Structural upgrades for three water storage reservoirs.
- **S3 Pump Station, City of Santa Rosa (2015)** – Replacement of existing building roof and addition to the building to house a new pump station and a new building to house an emergency generator.
- **Seismic Upgrades & Improvements to Tanks R3, R7, & R12B, City of Santa Rosa (2018)** Structural upgrades to three steel plate ground supported water storage reservoirs. Upgrades included new foundations and anchorage for the tanks.

- **Lynwood Pump Station Improvements, Addition, & Code Updates, North Marin Water District (2017 & 2019)** – This project consists of a 1-story approximately 250 square foot light gauge metal framed structure with corten wall screen panels, concrete foundation, and CMU infill electrical room that was constructed between an existing concrete pump station and an existing concrete PG+E transformer enclosure.
- **Crinella Pump Station Upgrade, City of St. Helena (2018)** – A conditions assessment and report, followed by construction documents for the new building as well as any repairs and/or upgrades of the wet well walls and elevated slab.
- **Elk Grove Special Waste Collection Center, City of Elk Grove (2014)** – This single story, 9,500 square-foot hazardous waste facility consists of a metal building structure with concrete / CMU and concrete pits, containment areas, and other ground-level features. This facility is expected to handle at least 6,000 vehicles annually. Detailed industrial architecture was used with durable materials and design, including a blast-resistant storage room. Canopies and extended roofs cover entrances and valued equipment. The project received LEED Gold Certification.
- **Graton Wastewater Treatment Facility, Graton Community Services District (2015)** – This project consisted of four new one-story structures: A wood construction office building, wood construction utility building, an open steel canopy and a covered composting bed area with concrete walls and a steel superstructure similar to the canopy. The project upgraded an existing secondary pond treatment facility to tertiary treatment. The resulting facility integrates three innovative technologies for a "first in the world" system which achieves the goal of complete removal of all waste constituents with no residuals. Water quality testing has confirmed the facility produces treated water exceeding Title 22 standards. Won the ACEC California 2015 Engineering Excellence Merit Award.
- **Pump Shed, Reverie and Von Strasser Wineries (2020)** – Pump and water treatment building at the Reverie Winery in Calistoga.
- **Water Storage Tank Replacement, Pacific Union College (2018)** – Construction documents for the replacement of four water tanks with four new 400,000-gallon bolted steel water tanks.
- **Tank and Pump House, Gravenstein Union School District (2014)** – A new 32,000-gallon steel water storage tank and supporting slab-on-grade. A new pump house adjacent to the fire suppression water tank both located on the Gravenstein Elementary School campus.
- **WTP Pipe and Tanks A and K Upgrades, Keysight Technologies (2019)** – Replacement anchorage for tanks A and K, containment curbs in Central Plant, ground level pipe support detail review in the Utility Tunnel.

Scope of Services

The work for this project will be approached in phases as outlined in the City's *Scope of Services (Statement of Work)* included in the Request for Proposals, consistent with the City's *Design Guidelines for Capital Improvement Projects*, attached hereto as **Appendix C**, and as described in the following:

Design Development

Task 1 – Background Information Review

1.01 Review existing evaluation reports, record plans, geotechnical investigations, and other documents relevant to the limits and scope of this project.

1.02 Prepare memorandum to report key findings and request any additional information needed.

Task 2 – Project Refinement

2.01 Conduct kick-off meeting with City staff to confirm project work plan, expectations and goals, and refine pump upgrade alternatives to be included in alternatives analysis.

2.02 Perform hydraulic modeling to fully vet and define the scope of pump upgrade alternatives.

2.03 Perform comparative alternatives analysis of pump upgrade alternatives. Prepare memorandum documenting results of alternatives analysis.

2.04 Meet with City staff to review the memorandum and select the preferred alternative.

Task 3 – Preliminary Design

3.01 Conduct field visits at each of the four sites to identify current conditions, discover potential constraints, and design-related issues. Coordinate with 3rd parties for the temporary or permanent removal and reinstallation or relocation of all communication equipment on R17. Perform analysis of alternative fire-proof roofing materials to standing seam metal including fireproof synthetic shingles for pump station buildings. Develop updated seismic design parameters and technical memorandum.

3.02 Prepare preliminary design plans.

3.03 Prepare a technical memorandum summarizing the findings and decisions of the design development phase. Meet with City staff to review the preliminary design package.

Environmental and Public Outreach

Task 4 – Environmental Documentation and Public Outreach

4.01 CEQA Compliance Evaluation and Recommendation Letter.

4.02 Prepare Project Description for use by City.

4.03 Provide technical assistance as required to respond to inquiries by public.

Construction Documents

Task 5 – 40% Progress Design

5.01 Prepare base plan sheets using information from the preliminary design phase.

5.02 Prepare improvement plans to the 40% progress level including site plans, tank appurtenance layout

plan, preliminary details, and basic set of design notes covering primary project features to be constructed.

5.03 Prepare opinion of probable construction cost to reflect 40% progress level.

5.04 Prepare 40% design memorandum.

5.05 Submit 40% design package to City for review and comment. Attend 40% design review meeting and prepare minutes to reflect any decisions made.

Task 6 – 75% Progress Design

6.01 Incorporate 40% design review comments from City where applicable.

6.02 Perform structural analysis to develop preliminary concepts to strengthen tanks and foundations.

6.03 Prepare improvement plans to 75% progress level.

6.04 Prepare 75% technical specifications using current City "boilerplate" template sections.

6.05 Prepare opinion of probable construction cost to reflect 75% progress level.

6.06 Prepare 75% design memorandum.

6.07 Submit 75% design package to City for review and comment. Attend 75% design review meeting and prepare minutes to reflect any decisions made.

Task 7 – 90% Progress Design

7.01 Incorporate 75% design review comments from City where applicable.

7.02 Prepare improvement plans to the 90% progress level that include detailed civil, mechanical, structural and electrical plans and details for each site as necessary.

7.03 Prepare 90% technical specifications.

7.04 Propose edits to City "front-end" general specifications.

7.05 Update opinion of probable construction cost.

7.06 Prepare 90% design memorandum.

7.07 Submit 90% design package to City for review and comment. Attend 90% design review meeting and prepare minutes to reflect any decisions made.

7.08 Prepare application documents as requested and provide support in acquiring construction permits.

Task 8 – 100% Construction Documents

8.01 Incorporate 90% design review comments from City where applicable.

8.02 Address plan check comments and prepare resubmittal as necessary to obtain construction permits.

8.03 Stamp, sign, and submit final construction documents package (mylar plans, hard copies and electronic files of specifications and itemized bid sheet) and assist City staff with preparation of final bid packages.

8.04 Submit digital files (AutoCAD, MS Word, MS Excel, PDF, etc.) of all final documents for the project.

Task 9 – Supplemental Services for Additional Buildings at Stations S-16 and S-17 to House New Generators

9.01 Perform geotechnical analysis and report for the additional buildings at Stations S16 and S17 including on-site geotechnical exploration.

9.02 Develop design documents for an additional building at each Stations S16 and S17 to house new generators. Include information regarding the buildings in the 40%, 75%, 90%, and 100% submittal packages.

9.03 Assistance with acquiring construction permits for the additional buildings.

Bidding and Construction

Task 10 – Bidding and Construction Phase Services

Services during bidding and construction would be provided on an as-requested basis and the precise scope of services that may be required is difficult to determine at this phase of the project. Bidding and Construction Phase services are expected to include the following:

10.01 Provide assistance with bidding including preparation of addenda as required in response to bidder questions.

10.02 Review and comment on submittals.

10.03 Review and response to RFIs.

10.04 Provide design assistance through construction.

Assumptions and Limitations

1. Topographic data will be collected by the City Survey Department for each site. The City will prepare a base topographic map in AutoCAD .dwg format and provide it to Brelje & Race for use.
2. Preparation of plans, specifications, and estimate will be suitable for bidding the work on all sites under a single set of construction documents.
3. The project is assumed to be statutorily exempt from the provisions of CEQA (including AB52) and therefore site-specific studies and preparation of an initial study document are not included in this scope of services. Modifications to this scope of services can be made to include such work should it become necessary.
4. City will provide review of preliminary design memo, and 40%, 75%, and 90% submittals in a 2-3 week time period each.
5. City will provide existing geotechnical reports and provide additional geotechnical investigation and analysis as necessary.
6. City will provide any necessary right-of-way research, acquisition,
7. Upgraded PG&E services will be required at Stations S16 and S17. The upgrades are assumed to include a new outdoor service pedestal containing new automatic and manual transfer switches as well as load bank and portable generator hookups.
8. New motor control center (MCC) will be necessary at each Stations S16 and S17. The new MCCs are each assumed to include three (3) VFDs and new TESCO controls.
9. New interior lighting will be provided at the pump station building and a new generator building at each Stations S16 and S17.
10. Existing tank electrical equipment will be removed and new exterior lights will be provided at the sites of Reservoirs R9A, R16, and R17.
11. An approximately 12’ x 20’ CMU block building addition will be required to house the new high flow pumps at Stations S16 and S17.

12. Existing wood framed roofing from existing pump station buildings at Stations S16 and S17 will be removed and replaced with structural steel roof framing with a standing seam metal roof. The new roofs will include skylights above each pump.
13. Civil engineering services during construction is estimated for up to six site visits, review of twelve shop drawings (one resubmittal each), and up to ten RFI construction clarifications.
14. Structural engineering services during construction is estimated for up to six site visits, review of six shop drawings (one resubmittal each), and six RFI construction clarifications.
15. Electrical engineering services during construction is estimated for up to six site visits, review of up to forty shop drawings (one resubmittal each), up to five days of factory test witnessing and up to fifteen RFI construction clarifications.
16. Geotechnical Investigation for new generator buildings at S-16 and S-17 will include 3 total borings up to 30 feet deep. Driller will obtain boring permit from PRMD and no encroachment permit will be required. No hazardous soils or groundwater are present on sites.

Appendix A: Resumes

Brelje & Race Consulting Engineers

Dave Coleman, P.E.

Benjamin Bryant, P.E.

George Potter, P.E.

Dyanna Stetina, P.E.

A. T. E. E. M., Inc.

Sharon Kimizuka, P.E.

ZFA Structural Engineers

Christian Botto, SE

Kevin Zucco, SE, LEED AP

Group Delta Consultants

Michael Givens, PE, GE, PG

Katherine Reyes, EIT

DAVID COLEMAN, P.E.

Education
B.S., Environmental Engineering, Pennsylvania State University, 1982

B.A., Physics, California University of Pennsylvania, 1980

Graduate-level coursework in wastewater treatment and hazardous waste issues, 1982-1989

Registration
Professional Civil Engineer,
CA No. 71902
PA No. 040337-R
WA No. 58122
VA No. 18146
Guam No. 1801

Professional Affiliations
American Society of Civil Engineers

California Water Environment Association

Water Environment Federation

David (Dave) Coleman, Associate Principal, has 35 years of experience as a civil engineer in the environmental, sanitary, and industrial disciplines for the federal, state, municipal and private sectors. During his career, Dave has been directly responsible for the design of water and wastewater facilities in five states and territories.

Water projects have included distribution systems, raw and finished water booster pump stations, standpipe and elevated storage tanks, and gravity multi-media and pressure filtration systems. Chemical feed systems designed include coagulation, precipitation, corrosion control, disinfection and sequestration.

Wastewater collection, conveyance and treatment project experience includes equalization basins, raw sewage and recycled water pump stations, complete tertiary treatment facility design, biological nutrient removal, infiltration/inflow abatement and abatement investigation, and sewer rehabilitation.

Dave's relevant experience includes:

City of Santa Rosa, Sonoma County

- Backup Generator Replacements – Water and Wastewater Facilities (in Design Development)
- West College Pumping Improvements (Finalizing Design)
- Geysers-Delta Connection Improvements (Finalizing Design)
- Alvarado Avenue and Mt Olive Drive Sewer and Water Improvements
- Laguna Treatment Plant Filter Valve Actuators and Valve Refurbishment-Construction Management
- Brown Farm Pond Drain to Llano Trunk – Project Manager
- Sewer Main Lining at Various Locations 2014 – Observation of Lateral Connection Replacements and Sewer Main Lining
- Long Drive Sewer Relocation – Project Manager and Lead Civil Engineer
- Llano Trunk Sewer CIPP – Emergency Review and Recommendations for Bypass Pumping Plan
- Urban Water Reuse System Pre-Design – Pre-design overview of transmission and distribution system of Urban Water Reuse System

Town of Windsor, Sonoma County

- Recycled Water Use and Storage Study
- AWT Clarifier Nos. 1 and 2 Rehabilitation Projects
- Pond 5 Berm Repair Project
- On-Call Engineering Services for Wastewater Reclamation and Recycled Water Planning, Programs, and Projects
- 2015 Valve and Piping Improvements – Lead Engineer for the replacement of Flow Diversion Valve and Filter Effluent Piping Improvements
- Water Reclamation Facility Compressor Replacement – Lead Engineer for the replacement of Rotary Screw Compressor serving Tertiary Continuous Backwash Filters
- Ponds 8, 9 and 10 Improvements – Lead Engineer during investigation and design development phase for the repair of pond dikes and sub-drain systems

Lake County Special Districts

- Anderson Springs Sewer Improvements – Project Manager and Lead Engineer for planning and design of sewage collection and conveyance facilities including 90 grinder pump stations.
- Middletown Wastewater Treatment Plant Improvements – Project Manager and Lead Engineer for system improvements to meet current and future wastewater flows including effluent pumping equipment replacement

Alliance Redwoods Conference Grounds, Sonoma County

- Sewage Pumping System and Onsite Treatment System Design and Construction Management

Napa Sanitation District, Napa County

- Wastewater Treatment Plant Pond Aeration System Design – Lead Design Engineer and Engineering Support During Construction
- Stonecrest Pump Station and Force Main – Quality Assurance Review of final contract documents

Petaluma Poultry, Sonoma County

- Resizing Replacement of Dissolved Air Flotation Pretreatment Unit
- Equalization Basin Process Analysis
- Design of 350,000 gallon Equalization Basin and Pumping System
- Design of Sanitary Sewer Pump Station and Force Main

City of Milpitas, Santa Clara County, CA

- Ayer Pump Station Improvements – Quality Assurance Review

Union Sanitation District, Alameda County, CA

- Boyce Road Pump Station
  - » Design Review – 7 MGD wet well/dry well pump station featuring self-cleaning trench style wet well and VFD pump drivers.
  - » Wemco Pump Certification Witness at WIER factory

City of Healdsburg, Sonoma County

- Recycled Water Distribution System Design – Quality Assurance Review for 16,000 LF 16 and 12-inch distribution main, reservoir renovation and recycled water pump station

South Tahoe Public Utility District, El Dorado County, CA

- Final and Secondary Effluent Pump Station Improvements – Quality Assurance Review of final contract documents.

United States Coast Guard, Sonoma County

- Training Center Wastewater Treatment Plant Improvements (Secondary and Tertiary Treatment) – Lead Engineer and Civil Design as well as Engineering Support during construction for New Wastewater Treatment Facility

California Department of Corrections, Amador County

- Mule Creek Wastewater Treatment Facility

BENJAMIN BRYANT, P.E.

Education
B.S., Civil Engineering, California State University, Chico, 2009

Registration
Professional Civil Engineer, CA No. 79218

Certifications
LEED, AP

Professional Affiliations
American Council of Engineering Companies

California Water Environment Association

U.S. Green Building Council

Wine Country Water Works Association

Water Environment Federation

Benjamin (Ben) Bryant, an Associate, has a broad range of experience in the fields of water, wastewater, and geotechnical engineering. His portfolio of municipal wastewater infrastructure projects includes feasibility studies, alternative analyses, regulatory compliance, design, rehabilitation, engineering support during construction, peer review, and project start-up and commissioning.

Ben has led many utility upgrade and embankment reservoir projects, comprised of scheduling, field exploration, geotechnical coordination, construction document development, bidding assistance, regulatory agency coordination and approval, hydraulic modeling, deep excavations, earthwork calculations, cost estimating, resident engineering, and construction management/inspection. He is accomplished at hydraulic modeling for evaluation of pressure and gravity flow pipe, and open channel flow systems.

City of Santa Rosa

- Water Pump Station 3 Modifications
- Station 13 Booster Pump Upgrades and Reservoir 12A Site Security
- Summerfield Rd. and Sonoma Ave. Zone 6 and 9 Water Pumper Connections
- White Oak Drive Water Main Replacement, Construction Management
- Grosse Ave, El Camino Way & Augustan Ave Sewer & Water Replacement, Construction Management
- Backup Generator Replacements Water & Wastewater Stations (in design)
- Rock Creek & Matanzas Way Sewer & Water Replacement (in design)
- Spring Lake Lift Station Improvements and Geotechnical Corrections
- Geysers-Delta Connection Improvement
- Los Alamos Trunk Sewer Replacement
- West College Pond 1 Divider Levee Project
- Brown Farm Pump Station
- Brown Farm Pond Drain Pipeline to Llano Trunk Sewer
- Northerly Slope Protection Delta Pond Effluent Pond
- Northerly Slope Protection Meadow Lane Effluent Pond
- Laguna Treatment Plant Flood Protection *(in design)*
- Meadow Lane Effluent Pond 'D' Repair, Geotech Exploration, DSOD (Division of Safety of Dams) Approval Process
- Meadow Lane Effluent Pond 'B' Repair, DSOD Approval Process
- Meadow Lane Effluent Pond 'C' Repair, Geotech Exploration, and DSOD Approval Process
- Meadow Lane Dam Breach Model and Inundation Study
- Laguna Plant Sludge Pump Station
- Geysers Pipeline Stabilization, Pine Flat Road, Construction Management

Town of Windsor

- Storage Tank Recoating and Access Improvements
- Effluent Storage Pond 5 Berm Repair
- Effluent Storage Pond 10 Embankment Repair
- Effluent Storage Pond 5 Outlet Piping
- Aeration Basin Air Piping Improvements
- Wastewater Treatment Plant Mapping

City of Rohnert Park

- Anderson 53 Tank (Tank 8) and Transmission Main

Forestville Water District

- Young Ranch Storage Tank Replacement
- Water System Pressure Zone Control Modifications
- Water System Asset Management Plan
- Sewer Service Charge Methodology Modification, Study and Implementation
- Recycled Water Availability Evaluation
- Wastewater Treatment Plant Chlorination System
- Sewer System Planning Map and Modeling
- Sewer Inflow/Infiltration Compliance Project

Timber Cove County Water District

- Raw Water Pumping System Modifications
- Amanita Circle Water Main Replacement
- Ruoff Emergency Water Supply Well Source Water Permitting

Yulupa Mutual Water District

- Iron and Manganese Removal System Design
- Source Water Well Permitting

Kendall Jackson Winery

- Blending Tank Expansion Projects (Phase 1 and 2)
- Wine Center Wastewater Facilities Design
- Water, wastewater, and recycled water systems including pump stations, and storage facilities, infrastructure development projects, construction management and implementation oversight.

Hop Kiln Winery

- Irrigation Booster Pump Station Design

Lake County Special Districts

- Anderson Springs Sewer Improvements

County of Sonoma

- Leachate Storage Tank Analysis for Closed Landfills
- Leachate Pipeline Cotati Trunk Sewer Connection
- Central Landfill Leachate Pump

GEORGE W. POTTER III, P.E.

Education
M.S., Civil Engineering, Brigham Young University, Utah, 1989
B.S., Civil Engineering, Brigham Young University, Utah, 1988

Registration
Professional Civil Engineer, CA No. C0052700
TX No. 124507

Professional Endeavors
Brelje & Race
1989 to Present

Professional Affiliations
American Society of Civil Engineers
American Water Works Association
Society for Protective Coatings

Certifications
Protective Coatings Inspector (PCI) Society for Protective Coatings (SSPC), 1/2012
Lead Paint Removal (SSPC-C3 Certification), 2/2011, 4-day onsite course by SSPC
24-Hour HAZWOPER (Hazardous Waste Operations and Emergency Response), under 29 CFR 1910.120(e), 2/2011, Compliance Solutions
8-Hour HAZWOPER Refresher, 3/2020, Compliance Solutions
Confined Space Entry, under 29 CFR 1910.146, 3/2020, Compliance Solutions
Contractor Liability for Public Entities, 5/2010, Risk Management Solutions
Respirator Use, under 29 CFR 1910.134, 4/2011, Compliance Solutions
Asphalt Inspector Series, 9.5 hours, 5/2020, Asphalt Institute

George Potter is a Senior Engineer with more than 30 years of civil engineering experience, primarily involved with the planning, design and construction management of water, wastewater, storm drainage, and roadway projects. He has also assumed the role of resident engineer for numerous infrastructure, utility piping, and water tank construction and recoating projects. George's design experience includes the preparation of technical reports, construction plans, and specifications for sewer mains, wastewater lift stations, water main replacements, water storage tanks, and water pumping stations. As the Program Administrator in charge of Brelje & Race's Injury and Illness Prevention Program, George manages employee work site hazard assessment education and development of Site Specific Health and Safety Plans for their construction site activities.

City of Santa Rosa

- Spring Lake Pump Station Upgrades, CM
- Oakmont Water Main Replacements, CM
- Laguna Treatment Plant Trunk Sewer Interconnect, CM
- A Place to Play Recycled Water Irrigation Pump Station, CM
- Seismic Upgrades & Improvements, Tanks R2-A, R4B and R-14, CM
- Geysers Recharge Pump Station Expansion, CM
- Meadow Lane and Rohnert Park Pump Station Retrofits, CM
- Meadow Lane Pond Repair

City of Cloverdale

- Water System Improvement Project Phase 2, D/CM
- Clarifier and Filter Rehabilitations, Three Phases, D/CM
- Ritter and South Crest Tank Design
- Hot Springs Tank Rehabilitation, D/CM

City of Rohnert Park

- Water Storage Tank 8 and Transmission Mains, CM
- Sewer Wet Well Lining, CM
- Water Storage Tank No. 2 Interior Recoating, D/CM
- Water Storage Tanks 1, 3, 4, and 5 Evaluation and Coatings, D/CM
- Graton Rancheria Casino Sewer Force Main, CM

City of Cotati

- William and Olof Sewer Replacements, CM
- St. Joseph Sewer Line Replacement, CM

City of Petaluma

- Paula Lane Tank Evaluation and Rehabilitation, D/CM

Town of Windsor

- Clarifier Rehabilitation, 2 Phases, D/CM
- UV Channels Refurbishment, D/CM
- Flocculation Tanks and Clarifier Recoating, D/CM
- Welded Steel Water Storage Tank Rehabilitation – Lakewood Tank I, D/CM
- Storage Tank Warranty Recoating, Mayacama Golf Course, CM

- Welded Steel Water Storage Tank Rehabilitation – Lakewood Tank II and Shiloh Tanks A, B and 4, D/CM

North Marin Water District

- Water Treatment Plant Clear Wells Evaluation and Coating, CM

Callayomi County Water District

- Water Treatment Plant and System Upgrades, CM

County of Sonoma

- Graton ADA Improvements, Phase I, CM

Bodega Bay Public Utility District

- North and South Bodega Harbour Pressure Zones 8-inch Intertie Pipeline, D/CM

Bodega Water Company

- Water System Improvements (1.3 MG Water Storage Tank)

Branger Mutual Water Company, Santa Rosa

- Water Storage Tank Replacements, D/CM

Inverness Public Utility District

- Water Tank Evaluations
- Conner Tank Rehabilitation, D/CM
- Stock Still Tank Replacement, D/CM

Bohemian Grove

- Wastewater Collection and Treatment System Replacement, D/CM

Loch Lomond Mutual Water Company

- Tank Rehabilitation, D/CM

Yulupa Mutual Water Company

- 0.1 MG Tank Design

Russian River County Water District

- 4 Water Tank Evaluations

Cobb Area Water District

- Tank Evaluations and Rehabilitations

CYO Catholic Charities – Youth Camp, Occidental

- Water Storage Tank Replacement, D/CM
- Water System Replacement, CM

Kelly Mutual Water Company, Sebastopol

- Water Main and Storage Tank Replacement, D/CM

Mayacama Golf Club

- Wastewater Treatment Plant, D/CM

Forestville Water District

- Hwy 16 Tank Evaluation and Rehabilitation, D/CM

DYANNA STETINA, P.E.

Education
B.S., Civil Engineering, and Engineering & Public Policy
Carnegie Mellon University, Pittsburgh, PA, 2011

Registration
Professional Civil Engineer, CA No. 83007

Professional Affiliations
American Society of Civil Engineers – Redwood Empire Branch Past President

Permit Sonoma Director's Advisory Group

Chi Epsilon (National Civil Engineering Honor Society)

Certifications
Construction Specifications Institute – Construction Documents Technologist

Dyanna Stetina, Associate, focuses in water, wastewater, and site development design. She has a strong background in demand/capacity estimating, evaluation/analysis, cost estimating, and contract preparation for water and wastewater treatment, supply, distribution, pump station and storage facilities. Her project expertise spans to entitlements, development, and stormwater management for wineries and vineyards.

City of Santa Rosa

- Cobblestone Drive Zone R2-R4 Connection (in progress)
- Silva Avenue and King Street Water Replacement
- King Street Sewer and Water Replacement
- Laguna Plant Potable Water Pressure System
- South Fulton Trunk Sewer Repair – Fulton Road at Santa Rosa Creek (in progress)
- Silva Avenue and King Street Sewer Replacement
- West College High Flow Storage Overflow (in progress)
- Oakmont Treatment Plant Sewer Relocation (in progress)
- Slope Protection for Ponds C, D, and Delta

Forestville Water District

- Young Tank Replacement
- Young Tank Turnover Control Valve Station
- Pressure Reducing Valve Assessment and Replacement
- Water Reclamation Technical Reports

Yulupa Mutual Water Company

- Upper Well Iron and Manganese Treatment Facility
- Upper Water Storage Tank Replacement

Diamond A Mutual Water Company

- Zone 3 Tank Replacement
- Zone 1 Tank Replacement
- Zone 2 Tank Replacement

The Sea Ranch Water Company

- Treatment Plant Backwash Facility Improvements
- Reservoir Valve Improvements

Bodega Water Company

- Raw Water Storage & Treatment Improvements

Timber Cove County Water District

- Booster Pump Station Improvements
- Upper Koftinow Pipe Loop
- Source Capacity Planning Study

Valley of the Moon Water District

- H2ONET Water Model

Jackson Family Enterprises

- Engine-Driven Irrigation Pump Station
- Surface Water Conveyance Works
- Iron, Manganese and Arsenic Removal Treatment System and Public Water System Permit Application
- Hydrologic Routing and Open Channel Design
- Disinfected Tertiary Recycled Water Treatment and Distribution Preliminary Design
- Rainwater Harvesting, Storage and Treatment Preliminary Design
- Initial Surface Water Treatment Plant and Distribution System Design
- Water Demand Estimating
- Proposed Development Tentative Map
- La Crema Tasting Room
- Verité Winery Use Permit Modification
- Aviation Boulevard Crosswalk

Twin Hill Ranch

- Iron and Manganese Removal Treatment System and Public Water System Permit Application
- Use Permit Application
- Winery and Cider House
- Tasting Room

Rodney Strong Vineyards

- Crush Pad Drainage Improvements
- Wine Spill Recovery Assistance

Balletto Vineyards & Winery

- Phase 2 Expansion
- Use Permit Modification for Promotional Events

Rodney Strong Vineyards

- Crush Pad Drainage Improvements
- Wine Spill Recovery Assistance

Twin Hill Ranch

- Use Permit Application
- Winery and Cider House

Duckhorn Wine Company

- Waterfowl Winery Barrel Building

Windsor Oaks Winery

- Public Water System Permit Application

A T.E.E.M. ELECTRICAL ENGINEERING Inc.
INDUSTRIAL & COMMERCIAL DESIGN

3841 NORTH FREEWAY BOULEVARD, SUITE 145
SACRAMENTO, CA 95834
TEL: (916) 457-8144
FAX: (916) 457-7876

Sharon M. Kimizuka, P.E.

Education
B.S., Electrical Engineering,
University of California, Irvine,
1991

Registration
1998/Electrical Engineer / California
E15698

Experience
A T.E.E.M. Electrical Engineering, Inc. 1994-Present
Holmes & Narver, 1991-1994
Jet Propulsion Laboratory, 1990

Affiliations
California Water Environment Association
Society of Women Engineers
National Fire Protection Association
Institute of Electrical and Electronic Engineers
International Society of Automation

A T.E.E.M.'s Principal in Charge and President, Sharon M. Kimizuka, P.E., is a State of California registered Professional Engineer. Ms. Kimizuka has 26 years of specialized experience in wastewater, water and drainage system engineering projects.

EXPERIENCE

City of San Jose - Electrical Engineer in charge on the City of San Jose Nordale Pump Station Replacement project. Project includes replacing existing electrical controls and utility service. Electrical panels were designed for temporary submergence of station.

UC Davis - Electrical Engineer in charge on the UC Davis Primary Sanitary Sewer and Storm Drain Lift Station Improvements project. Project includes replacing existing electrical controls for five sanitary sewer lift stations and eleven storm drain pump stations. Three different standard pump control panels were designed to replace the existing motor controls. The RTU panels were provided by the University to connect to the pumps, instruments and new panels. ATEEM worked closely with the University to identify the best communication method to each site.

City of Woodland - Electrical Engineer in charge on the City of Woodland ASR Well 29 & 30 project. Project includes replacing existing water wells, chemical systems, control buildings, re-feeding existing park lighting, new generator at one site and security camera system. ATEEM provided programming of the PLC, OI and SCADA system under a separate contract.

City of Woodland - Electrical Engineer in charge on the City of Woodland ASR Well 28 project. Project includes replacing existing water well, chemical systems, control buildings, and security camera system. The RTU was designed to match the new City standard. ATEEM provided programming of the PLC, OI and SCADA system under a separate contract.

City of Woodland – Electrical Engineer in charge of the design for an above ground tank and booster pump station. The station provided power to an existing well and motor controls, generator, RTU, booster pumps and chemical feed system were installed in a new building. The RTU was designed to match the City standard.

City of Sacramento - Electrical Engineer in charge on the Shasta Park Water System project. Project includes new water well, pressure filters, chemical system, control building, storage tank and booster pump station. Programming of the PLC, OI and SCADA system will be by the City. Coordinated with two Civil Engineering companies, the City and another Civil/Electrical Engineering company on project.

Calaveras County Water District, Valley Springs CA - Electrical Engineer in charge of the Jenny Lind WTP SCADA and Expansion Project. Electrical and instrumentation for adding sand filter, and pump station modifications. Provided complete as-built one line diagrams of existing and new Motor Control Centers (MCCs); construction services and PLC/SCADA programming for the project. Replaced existing Filter PLC processor with no downtime.

City of Hayward – Electrical project engineer for the design of the Centex Lift Station Project. Project included retrofitting entire lift station and providing new automatic transfer switch, MCC, instrumentation, and pump controls. Construction services were also provided including PLC programming and SCADA.

Calaveras County Water District, Arnold, CA,– Electrical project engineer for installing the SCADA system to remotely monitor and control pump stations and water storage tanks from a water treatment plant. District was able to recoup this investment with the reduction of staff overtime while providing more information, flexibility and control over their water system.

Placer County, Department of Facility Services, CA – Electrical Principal in Charge of design services for the Saddleback Lift Station. Design included retrofitting entire lift station and providing new automatic transfer switch, standby generator, MCC, RTU and pump controls. Construction services were also provided.

El Dorado Irrigation District, CA - Electrical Principal in Charge of design and construction engineering services for the El Dorado Hills WWTP Phase IIIA Expansion Design Project. The project included PLC & SCADA improvements, UV electrical & administration buildings, three standby generators, three main switchboards, new Headworks, equalization pump station and tank, BNR system, denitrification monitoring analyzers, modified RAS pump station, modified secondary effluent pump station, reservoir effluent pump station, second algae DAF system, second digester system second filter feed pump station, modified chemical feed systems, two tertiary filters, four UV channels, plant water pump station modifications, gas flare system, boiler and biofilter fans.

Groveland Community Services District, CA - Developed lift station standards for the District in 2005, including standardizing motor controls, control panel layout and SLC controls. This became the basis for retrofitting 12 lift stations within the next year..

Calaveras County Water District, CA - Electrical Engineer in charge of developing Lift Station Control Panel that standardized the PLCs, motor control wiring, backup controls, etc. for two- and three-pump systems, using full speed, soft starter or VFD control.

YEARS OF EXPERIENCE

- 11 years with ZFA
- 23 years total

EDUCATION

- B.S., Civil Engineering, 1998, San Francisco State University, San Francisco

PROFESSIONAL REGISTRATION

- CA Structural Engineer 6648
- CA Civil Engineer 81019
- State of California Department of Emergency Services Disaster Services Worker Safety Assessment Program ID #73268

PROFESSIONAL MEMBERSHIPS

- Existing Building Council

CHRISTIAN BOTTO, SE

ASSOCIATE | PROJECT MANAGER

Christian began his professional career first working in his native Central American, then at a Construction Management firm on SFO's Boarding Area A project. He is a seasoned structural engineer with design experience on commercial, residential, and educational buildings. He is particularly passionate about retrofitting vintage buildings to extend their service life in the communities they serve.

Christian uses a collaborative approach leveraging BIM technology to ensure a structural design is fully coordinated, buildable, and efficient. His experience includes the design and construction of several public projects from community and convention centers, office buildings, and library facilities.

Christian is adept in the planning, design, and management of large- and small-scale projects ranging from private development, in both commercial and residential, to the public realm. He works closely with clients to ensure their needs are integrated into a solution that works for both the approval agencies and the client.

RELEVANT PROJECT EXPERIENCE

City of Santa Rosa South Fulton Trunk Sewer Repair	Santa Rosa Creek
SRPD Existing Monopole Evaluation	Santa Rosa
Calistoga Fire Alert Monopole	Calistoga
Petrified Forest Monopole	Calistoga
Reverie and Von Strasser Wineries Pump Shed	Calistoga
Kaiser Santa Rosa MOB West Pharmacy Expansion	Santa Rosa
Kaiser Santa Rosa Lobby Upgrades	Santa Rosa
Loch Lomond Village - Mixed Use Building	San Rafael
Charlotte Wood Middle School Library Modernization	San Ramon
B Street Seismic Retrofit and Remodel	San Rafael
Luther Burbank Center for the Arts	Santa Rosa
Windsor Odd Fellows Seismic Retrofit	Windsor
Bishop's Ranch – Welcome Center	Healdsburg
Willits Warehouse and Distribution	Willits
Woodlands Market Rooftop Generator	San Rafael

YEARS OF EXPERIENCE

- 26 years with ZFA
- 28 years total

EDUCATION

- B.S., Civil Engineering, 1992, California Polytechnic State University, San Luis Obispo

PROFESSIONAL REGISTRATION

- CA Structural Engineer 4861
- CA Civil Engineer 57777
- United States Green Building Council LEED AP
- State of California Department of Emergency Services Disaster Services Worker Safety Assessment Program ID #10826
- FEMA Urban Search and Rescue

PROFESSIONAL MEMBERSHIPS

- Structural Engineers Association of Northern California (SEAONC)
- SEAONC Sustainable Design Committee Member
- Former City of Santa Rosa Design Review Board
- Community College Facility Coalition

KEVIN G. ZUCCO, SE, LEED AP

EXECUTIVE PRINCIPAL | PRINCIPAL-IN-CHARGE

Over the course of his 25+ year career in the industry, Kevin has performed structural design and analysis of public, commercial transportation, and maintenance facilities throughout Northern California. He has worked directly with the City of Santa Rosa's City Building Officials on many city-owned facilities. Kevin applies his experience and enthusiasm for the industry to designing build-able and reliable public and essential facility structures with coherent and practical construction documents to meet all architectural design features. As a LEED Professional, Kevin is committed to sustainability and has used pre-engineered metal buildings with customized slabs and protective barriers, pre-cast concrete wall panels, rammed earth walls, and structural insulated panels (SIP) in his structural designs.

ZFA has held On-Call Contracts with numerous City, County, and Private Entities for over fifteen years and direct knowledge and experience in providing structures to support the needs of public service. Kevin is adept in the use of the California Building Code's Existing Structures chapter, the International Existing Building Code, California Historic Building Code, ASCE 41.

Our firm has experience working in FEMA flood zones of up to 11' (feet) of water, hydrodynamic loads, bay mud, and in soil remediation projects and have designed all types of foundations (shallow, deep, mat slabs) on widely varying soil condition throughout the San Francisco Bay Area. Our office has successfully used ASCE 7 and FEMA standards for decades as a tool to consistently review the various types of structures. Kevin and ZFA staff are also FEMA trained to assist each other and our communities with weather-related events, hazardous-substance release, medical, terrorism, and threats of violence.

RELEVANT PROJECT EXPERIENCE

City of Santa Rosa South Fulton Trunk Sewer Repair	Santa Rosa Creek
Elk Grove Hazardous Waste Facility	Elk Grove
Lynwood Pump Station	Novato
Keysight - Waste Water Renovation Tanks A and K	Santa Rosa
City of Santa Rosa City Hall ADA Ramps	Santa Rosa
City of Santa Rosa City Hall Annex Study	Santa Rosa
City of Santa Rosa - 9820 Ordinance Study	Santa Rosa
City of Santa Rosa Transit Mall	Santa Rosa
Santa Rosa Fire Station No. 5	Santa Rosa
Santa Rosa Fire Station No. 6 Study	Santa Rosa
SRPD Existing Monopole Evaluation	Santa Rosa
Sonoma County Agriculture Building Seismic Evaluation	Santa Rosa
Sonoma County Public Health Bldg. Seismic Evaluations	Santa Rosa
Sonoma County Architect Hazard Mitigation Studies	Santa Rosa
Sonoma County Data Processing Building Seismic Retrofit	Santa Rosa
Richmond Emergency Generator	Richmond
Enphase Energy - Generator Yard	Santa Rosa
Caymus Cordelia Waste Water Expansion	Paso Robles

Michael Givens, PhD, PE, GE, PG

Project Manager & Associate Engineer

Professional Registrations
Professional Engineer, CA No. 81361
Professional Geologist, CA No. 9284
Geotechnical Engineer, CA No. 3145

Education
Ph.D., Civil Engineering, University of California, Los Angeles, 2013
MS, Civil Engineering, University of California, Los Angeles, 2010
BS, Geology, California State University, Long Beach, 2006

Years of Experience: 16

Dr. Givens has 16 years of experience in geotechnical and geological engineering. Dr. Givens has conducted project studies and formulated recommendations for geotechnical engineering projects including slope stability, bridges, retaining walls, roads and parking lots, pipelines, sewer lines, storm drains, residential and commercial construction as well as litigation support. He has been involved in with projects through Design-Bid-Build and Design-Build delivery methods in seismically active Sothern California and has developed a reputation for providing proactive and collaborative consulting services to meet client's needs. Dr. Givens is well versed in reviewing contractors' technical submittals including quality control programs, start-up plans and schedules, monitoring and evaluating construction activities, as well as directing, coordinating and reviewing work plans for improvement projects, construction administration and inspection, and resource planning. Representative experience includes:

Department of General Services Richards Boulevard Office Complex, Sacramento, California: Dr. Givens was the Geotechnical lead, provided geotechnical engineering services for the Criteria Engineering of the redevelopment of the State's owned property at the corner of Richards Blvd and N. Seventh St to build a new 1.3-million-square-foot office complex. The complex is conceptually envisioned to consist of mid- to low-rise buildings, 1,020-space parking garage and an additional 400 surface parking spaces. A preliminary subsurface investigation was performed utilizing mud rotary and sonic drilling to maximum depths of 150-feet below ground surface to prepare preliminary geotechnical recommendations for the proposed development. The property was identified as having the potential for seismically-induced liquefaction and two foundation solutions were provided: shallow foundations with ground improvement and deep foundations consisting of CIDH piles.

I-405 Improvement Project (SR-73 to I-605), California: Dr. Givens was a geotechnical lead for this $1.27 Billion Design-Build project for Orange County Transportation Authority (OCTA) to widen 16 miles of the I-405 in Orange County. Dr. Givens worked closely with the design and construction joint ventures, and led the progression from concept to final design for three of the seven segments of the project, including 8 bridges, 30 retaining walls, 10 sound walls, several culverts, and recommendations for the geotechnical design and construction of 8 miles of roadway improvements. Dr. Givens was involved with staff resourcing, scheduling, construction document review, and interfacing with the design joint venture, construction joint venture, and the OCTA representatives. Geotechnical design issues included large seismic demands, shallow groundwater, compressible soils, potentially liquefiable soils, lateral spreading, downdrag forces on piles and impacts from stage construction on already constructed structures or existing structures. Design solutions including both shallow and deep foundations.

Bristol Commons, Santa Ana, California: Dr. Givens is the geotechnical lead for the development of two city blocks totaling approximately 42 acres. The conceptual master plan includes approximately 2,700 residential units that may consist of a mix of construction including (on-grade garden apartments, podium style apartments and possibly high-rise construction). The project also includes 153,000 square feet of retail, 170 Senior Assisted living, a 200-unit hotel, 6-acre park, and 4,643 parking spaces. Dr. Givens is providing geotechnical recommendations for planning purposes to assist the owner in building types and configurations. The primary geotechnical design issues include shallow groundwater, expansive near surface soils, and large seismic loading.

Katherine Reyes, PhD, EIT

Senior Engineer

Certifications

Engineer -in-Training, CA 143589
Registered Civil Engineer, Columbia

Education

Doctorate (Ph.D.), Civil (Geotechnical and Earthquake) Engineering, Los Andes University, Bogota, Colombia and Washington State University, Pullman-Washington 2008

Master of Arts or Science, Civil (Structural and Earthquake) Engineering, Los Andes University, Bogota, Colombia, 2004

Bachelor of Science, Engineering, Columbian School of Engineering, Bogota, Columbia 2001

Years of Experience: 11

Dr. Reyes has eleven years of diversified professional experience in geotechnical and earthquake engineering. Her experience covers aspects of the consulting engineering and the research in geotechnical earthquake engineering, specializing in probabilistic seismic hazard analysis, site response, and constitutive modeling of geomaterials. Dr. Reyes background includes project coordination and execution as well as client relationships. Dr. Reyes portfolio includes geotechnical engineering analysis, seismic hazard evaluations, wave propagation, site response analysis, ground motion design, liquefaction potential evaluation, and non-linear soil-structure interaction and diverse projects that include nuclear power plants, oil and gas pipelines, offshore platforms, marine ports and harbors, levees, transportation, hospitals and schools within United States and Internationally (Latin America, Middle East, Africa, southeast Asia, and eastern Europe). Additional experience includes field investigation and laboratory testing programs, subsurface soil characterization, pile foundation design, and slope stability, among others. Representative experience includes:

UCSD York Hall and Mayer Hall Seismic Retrofit, San Diego, California: Dr. Reyes reviewed and performed analyses for a ground motion study for an ASCE 41-17 Tier 3 seismic evaluation of two existing buildings on the UCSD campus. Site-specific seismic hazard analyses were performed for the BSE-2E and BSE-1E seismic hazard levels, and 11 sets of ground motion time histories compatible with the BSE-2E seismic hazard level were developed in accordance with ASCE 41-17 and ASCE 7-16 for use in the Nonlinear Dynamic Analyses.

Los Angeles World Airport (LAWA) Automated People Mover, Los Angeles, California: As Senior Engineer, Dr. Reyes performed site-specific probabilistic and deterministic seismic hazard analyses, developed target acceleration response spectra for the seismic design of the entire project for three seismic hazard levels (both project-specific design criteria and ASCE 7-10), and developed acceleration response spectra in accordance with Caltrans requirements. In addition, Dr. Reyes selected and spectrally matched 7 sets of ground motions (both horizontal and vertical components) for use in structural nonlinear time history analyses for two different seismic hazard levels (Maximum Design Earthquake and Operating Design Earthquake). The $5B Design-Build project includes an electric train system on a 2.25-mile elevated guideway connecting the Central Terminal Area airline terminals with two future Intermodal Transportation Facilities and a Consolidated Rent-A-Car Facility at Los Angeles World Airports. There are six stations total, and nine trains, each with four cars and an anticipated 30M passengers per year.

APPENDIX B

Concurrent Projects For Dave Coleman, Project Manager

Project	Client	Status
Backup Generator Replacements – Water & Wastewater Facilities	City of Santa Rosa	Preliminary Design
Sonoma Avenue Trunk Sewer	City of Santa Rosa	Preliminary Design Completed
Dotti Farm Recycled Water Main Improvements	City of Santa Rosa	Final Design
Geyser Delta	City of Santa Rosa	Final Design
AWT Clarifier No. 1 Rehabilitation	Town of Windsor	Construction Closeout
Pond 5 Berm Repair	Town of Windsor	Construction Closeout
Anderson Springs Sewer Improvements	Lake County Special Districts	Construction Closeout

Appendix C

Design Services Terms for Capital Improvement Projects

Document has been annotated with proposed edits and attached.

Brelje & Race will comply with the City's Design Services Terms as stated herein, with markups in Sections VII through XI as applicable.

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City of Santa Rosa
Design Services Terms for
Capital Improvement Projects

Consultant shall:

I. Deliverables

1. Provide design memo summarizing project information such as hydralic, electrical, structural, seismic and environmental concerns, water quality impacts, any non-standard conditions, and modification of City's pre-design information.

2. Provide a 40% submittal that includes: 8 sets of project plans on 22" x 34" white bond paper, 1 electronic copy (PDF), and 3 copies of the preliminary engineer's estimate created using the City supplied Microsoft (MS) Excel spreadsheet template along with 1 electronic copy (MS Excel). The scale of each drawing or detail shall be as needed for a clear depiction of drawings, measurements and notations. (Scale adjustments may be required during City's review). All drawings and details shall be in an engineering scale unless otherwise approved by the City. Show the plan-view alignment on the topo. Identify possible utility conflicts. Determine environmental and PG&E permit requirements. One meeting shall be scheduled with City staff to review the comments for the 40% design submittal.

3. Provide a 75% submittal that includes: 8 sets of project plans on 22" x 34" white bond paper, 1 electronic copy (PDF), 3 hard copies and 1 electronic copy (MS Word) of draft Technical Specifications (based on City's MS Word "boilerplate" templates), and 3 hard copies of the updated engineer's estimates along with 1 electronic copy (MS Excel). Incorporate 40% review comments in project plans and show all edits to City provided technical specification boilerplates using track changes. Send copies of project plans to utility companies for their review and coordinate any requirements as necessary. Provide update on status of any required project permits. One meeting shall be scheduled with City staff to review the comments for the 75% design submittal.

4. Provide a 90% submittal that includes: 8 sets of project plans on 22" x 34" white bond paper, 1 electronic copy (PDF), 3 hard copies and 1 electronic copy (MS Word) of 90% Technical Specifications, proposed edits to City provided "front end" general specifications, and 3 hard copies and 1 electronic copy (MS Excel) of updated engineer's estimate. Incorporate all remaining comments into the project plans and show all edits to technical specifications using track changes. Provide update on status of any required project permits. One meeting shall be scheduled with City staff to review the comments for the 90% design submittal.

5. Provide a 100% submittal that includes: final stamped and signed mylar project plans, 1 copy of final Technical Specifications in electronic MS Word format, 1 copy of Technical Specification in electronic MS Word format showing any edits made post 90% submittal by use of track changes, stamped and signed Technical Specifications cover sheet in PDF format (City provides MS Word format cover sheet template), an itemized Bid Sheet (MS Excel format), and proposed edits to City provided "front end" general specifications. Final project plans (and technical specifications) shall remove all references to discipline types as they relate to sheet and detail numbers; e.g. E000 for electrical work or C000 for civil, and replace them with plan sheet numbers and detail and sheet numbers as appropriate. Final project plans shall be on archival quality white mylars (durable, dimensionally stable polyester) that are 22" x 34" and made with archival quality permanent ink that does not smear even if wet. Pencil originals and sticky backs are not acceptable.

6. Provide final approved project plans in electronic AutoCAD format, and all related files (including pictures) in MS Word, MS Excel, PDF and JPEG formats as appropriate. Images shall be filed by site and date.

7. Complete Consultant/City evaluations upon completion of project.

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II. Software

1. Prepare project plans using Autodesk AutoCAD Civil 3D 2014 to 2018. Obtain prior written approval from the City's project manager to use a different product version of AutoCAD. Provide final approved electronic project plans to the City in AutoCAD (*.dwg) format and all related files, including all XRefs, on a flash drive with instructions to the City regarding how to access and use the files and the interrelationships among them. These instructions shall include a list describing what is contained in each drawing (.dwg) file.

2. Prepare most other documents using Microsoft (MS) Word and Excel 2007 or more recent versions.

III. Plans

1. Submit project plans that conform to the City's drafting standards manual and contain the original unedited topographic and control layers along with the design layers. Coordinates shall be based on City's coordinate system. Consultant shall use the same coordinates provided in the topographic survey and shall not modify any value.

2. Utilize the City established plan, profile, and cover sheet templates in AutoCAD. Each plan and/or profile sheet submitted by Consultant shall include the following:

   A. Location and coordinates of control points, point number, elevation and description.
   B. Graphic scale.
   C. North arrow.
   D. Mapping showing streets (edge of pavement, face of curb).
   E. Elevations of all existing features, structures, or utilities.
   F. Match lines with appropriate sheet numbers.

3. Use City established title blocks and layer convention.

4. Indicate the plan completion percentage (40%/75%/90%) near the project title area of the border on sheet one of the plans.

IV. Special Provisions/Technical Specifications

1. Prepare Technical Specifications of the Special Provisions utilizing the City CIP supplied "boilerplate" templates. Format and number technical specifications per City boilerplates and applicable State of California Standard Specifications. Modify only as necessary to make final technical specifications specific to this project. All changes shall be highlighted by developing the technical specifications with MS Word "track changes" activated.

2. Review City provided 'front end' general specifications of the special provisions (white pages), Sections 1-9, especially Order of Work, Number of Working Days, and Liquidated Damages. Consultant shall propose changes to Sections 1-9 as necessary. However, the changes to Sections 1-9 shall be made by City Staff only.

3. Verify that all items in the engineer's estimate are covered in the special provisions and that it is clear how all work is paid for. List items in the same order and with the same title as in the special provisions. Do not add headers or footers to the technical specifications.

4. Stamp and sign final Technical Specifications cover page (utilizing the City supplied template) and submit to City in PDF format. Provide camera-ready final approved technical specifications in Microsoft Word format to City via email and/or on flash drive, or other format designated by City.

5. Include Order of Work or any other process-related provisions, as required.

6. Include any required environmental permits, applicable regulations, and mitigation monitoring requirements in the special provisions.

7. Identify any supplementary reports used for design and indicate they are available for contractor viewing during bidding. Also indicate that such reports are not part of the contract.

8. Include any project specific provisions relating to the public outreach process in the special provisions.

9. Verify that the project plans and special provisions reference the same project name.

V. Design information for Project Improvements

The following shall not be construed as all inclusive. It is the responsibility of the consultant design engineer in responsible charge of the project to adhere to local standards of care and commonly accepted design principles.

1. City will provide Consultant with water, sewer, and storm drain base maps, available record plans for existing water and sewer system, as well as underground utility base maps from Pacific Gas & Electric, Comcast, and ATT. Utility base maps are schematic and should not be used for determining locations of existing underground utilities. After reviewing maps, advise City where utility markout requests should be made to PG&E, Comcast, and ATT before proceeding with design.

2. Detail project plans sufficiently with enough survey information so that the project can be completed from the project plans. The project plans should stand alone, without the need for additional information.

3. "X-Ref" the topographic survey into the design drawing.

4. Show survey control points and their coordinates on the project plans.

5. Show centerline or control line stations and coordinates at all beginning and ending points, BCs, PRCs, ECs, angle points, and tees (when control line is the pipeline alignment). Table format is acceptable.

6. Include curve data for each curve: (delta, radius & length) and tangent data: (bearing and length).

7. Show enough information on the project plans so that the centerline (or control line) is locatable in the field from the information on the plans. This can be accomplished in several ways:
    1. Show coordinates of entire centerline. A table showing BCs, PIs, ECs, etc. is the preferred format, or;
    2. Show ties to existing monuments at beginning and ending of centerline or control line, or;
    3. Show coordinates and basis of bearings at beginning and end of centerline or control line.

8. Reference the locations of improvements on the project plans using one of three acceptable methods:
    1. Where a single pipeline, such as a sewer, water, or storm drain is to be installed Consultant may show station runs along the alignment of the pipeline. Alignment shall contain all information listed under Items 5 & 6 of this section.
    2. Where multiple improvements (sewer, water, storm drain, curb and gutter, etc.) are to be referenced

DYC

by station and offset to a single centerline or a control line, all centerline information listed under Items 5 & 6 of this section shall be shown on the plans. If project includes reconstruction of the roadway structural section position centerline at appropriate location to establish the street crown line.

3. Coordinates - This method uses coordinates to locate and control the layout of all planned improvements. All BCs, PIs, PRCs, ECs, angle points, beginnings, endings, etc. of all improvements are indicated individually on each plan sheet or listed in a table.

9. Include striping information in the project plans. Separate plan sheets may be used if necessary.
    1. Striping plans are used by the survey crew to lay out the location of the new striping on the pavement. The striping shall be able to be located and laid out from the information on the plans alone. This information shall be presented on the plans so that it can be located and laid out in the field using only a pocket tape and a rag tape.
    2. Show lane widths, lengths or turn pockets and tapers, lengths to transition points, angle points, BCs and ECs on the plans. Lengths can be referenced to cross walks, stop bars, curb returns, angle points in the curb and gutter or other easily identifiable features.

10. Locate and accurately depict (including drawing to scale) all underground utilities on the project plans.

11. Check for potential utility conflicts. Advise City on appropriate pothole locations, if any, to confirm clearances. Show water main in profile with grade changes or drop structures necessary to clear conflicts. Water valve data may be helpful.

12. Complete the profile and details after the City approves the alignment.

13. Include "in" or "out" on invert grade callouts (e.g. INV 6" IN = 175.25', INV 8" OUT = 175.15'). Please use N/S/E/W references for secondary clarification only.

14. Assess the potential for rocky soil conditions from existing geotechnical information provided by City and advise the City as to the potential need for any additional geotechnical research during design.

15. Evaluate potential curb & gutter, valley gutter and other concrete work replacement needs and/or additions.

16. Show pavement restoration details on project plans per City Materials Engineering input.

VI. Construction Contract Assistance

1. Promptly respond to questions, inquiries, and correspondences concerning the project until the Notice of Completion is filed. Display Consultant's name and telephone number on the project plans and in the special provisions. Answer all questions and resolve problems regarding the design of the project. Prepare and make City Council presentations when required. Prepare any necessary addenda to the Special provisions. Assist City in obtaining approval of the addenda. Prepare the final Engineer's estimate. Attend a pre-bid conference for the prospective bidders at City facilities or at the project site. Coordinate with the City's construction management team to solve field-related problems.

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The following options are noted with the responsible party as per Section IV, Scope of Services, page 2, in the RFP.

The following options will be included in Consultant's proposal, as directed by City.

VII. Environmental ~~(As directed)~~ City and Consultant. Scope assumes no environmental permits will be necessary and a mitigated negative declaration will be filed by the City.

1. Assist City with environmental document processing including, but not limited to, meetings, exhibits, studies, and postings. Obtain permits necessary for construction of the project. Any provisions relating to environmental permits, regulations, and mitigation requirements shall be included in the project special provisions.

2. Determine if any permits are required for project construction such as from PG&E and other Utilities or Agencies, Bay Area Air Quality Management District (BAAQMD) and the Reginal Water Quality Control Board (RWQCB). ~~Initiate permit process as soon as possible.~~

3. City will investigate underground contamination and obtain a one-time discharge permit from the City's Environmental Compliance Section of the Water Department.

VIII. *Surveying ~~(As directed)~~* City

1. Determine need and coordinate with City for any additional survey information not already provided.

IX. Soils Report ~~(As directed)~~ City

1. Develop safety and disposal plans for excavated contaminated soil in accordance with any applicable permit requirements.

2. Provide boring logs when unstable or deep excavations are anticipated.

3. Provide all documents in printed and electronic formats.

X. Plan Coordination and Research ~~(As directed)~~ Consultant

1. Coordinate with and obtain approval from all affected local agencies and companies, including but not limited to the City Departments of Community Development, Fire, Transportation and Public Works and Water, California Regional Water Quality Control Board, Pacific Gas and Electric Company, Comcast, and AT&T. Coordination shall include preparation and processing of all correspondences, check prints, forms, applications, permits, diagrams, viewfoils, and any other necessary items as determined by the City Engineer. This coordination shall continue until the project plans are approved by the City. The Consultant shall also be responsible for assisting the City in obtaining review and approval from any affected County, State, and Federal agencies. This assistance shall include but not be limited to applying for public funds and supplying check prints of project plans, special provisions, estimates, and right of way plats and descriptions as directed by the City. Copies of all correspondence shall be transmitted to the City.
2. Assist the City with notification, coordination and planning with Departments, Companies and Individuals, as needed, for the temporary or permanent removal of communications equipment from at least one water tank site, and reinstallation, as needed.

XI. Public Outreach ~~(As directed)~~ Consultant

1. Assist City with all public outreach, including but not limited to correspondence, ~~mailings,~~ exhibits, and ~~meetings~~.

Signature: Andrew Wilt
Andrew Wilt (Jan 5, 2021 12:49 PST)

Email: awilt@srcity.org

Signature: Tracy Duenas
Tracy Duenas (Jan 5, 2021 13:00 PST)

Email: Tduenas@srcity.org

A010135-2016-17 Seismic Upgrades and Improvements Phase 5 packet

Final Audit Report 2021-01-05

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A010135-2016-17 Seismic Upgrades and Improvements Phase 5 packet

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