

December 4, 2023

Ms. Susan P. Serrano, C.T.P.M., C.T.C.M  
Purchasing Director  
Brazoria County Courthouse West Annex  
451 N. Velasco St., Suite 100  
Angleton, Texas 77515

***Subject: Proposal for Engineering Design and Construction Phase Services for the Brazoria County Sheriff's Office Water Plant Improvements – RFSQ #23-59***

Dear Ms. Serrano:

Baxter & Woodman, Inc. is pleased to provide a proposal for engineering services associated with the Brazoria County Sheriff's Office Water Plant Improvements. We understand the goal for this project is to upgrade and expand the plant to meet the needs of the current and future demands. This proposal is based on information provided by Brazoria County (the "County") in the RFSQ process as well as the general scope of services listed in Baxter & Woodman's SOQ. An overview of the project and scope of services are outlined below:

**1. WORK OVERVIEW**

**A. Current Facility**

The Brazoria County Sheriff's Office Detention Center is located at 3602 County Road 45, Angleton, Texas 77515. The Water Plant (the "Plant") serves as the sole source of water for this facility and serves both staff and inmates. The Plant contains a 750,000-gallon concrete ground storage tank (GST), a 20,000-gallon pressure tank, a 700 gallons per minute (gpm) primary water well, a 260-gpm backup water well, an aeration tower, a pump building with two (2) booster pumps, an arsenic removal system, chemical storage tanks and associated feed pumps, a fire pump room, and an emergency generator. On average, the Plant pumps roughly 125,000 gallons per day.

**B. Proposed Expansion**

Based on information provided at the pre-offer meeting as well as the information listed in the RFSQ, proposed expansion to the facility includes the addition of 500 beds and a training facility. The Plant expansion shall be designed to accommodate the additional demand to the facility. Expected improvements to the Plant include:

- 1) Replacement of the ground storage tank with new storage facilities
- 2) Replacement of the aeration tower
- 3) Additional booster pump capacity
  - a) Includes expansion of the existing booster pump control building
- 4) Additional arsenic removal capacity

- a) Includes relocation of the arsenic removal process to upstream of the storage tank. Options will be evaluated and recommended as part of the Preliminary Engineering Report
- 5) New generator for emergency power to the main components
- 6) Instrumentation and controls for automated arsenic readings, including critical alarms

Additional improvements to the items listed above expected by the Client shall be identified prior to completion of the Preliminary Engineering Report (PER). Improvements beyond the items listed above or included as considerations in the PER are not included in this proposal and may be subject to an additional services fee to be negotiated separately.

## **2. SCOPE OF SERVICES**

### **A. Preliminary Design Phase Services**

#### **1) Data Collection - Design Kick-off Meeting with County**

- a) Review any additional information provided by County staff not relayed during pre-offer meeting

#### **2) Preliminary Engineering Report**

Develop a report for submission to the Texas Commission on Environmental Quality (TCEQ) to include the following considerations:

- a) Review and confirm TCEQ, EPA, and Texas Commission on Jail Standards (TCJS) requirements for water treatment plant expansions and capacities of treatment processes
- b) Ensure water plant has capacity to serve existing facilities with adequate water supply and capacity to meet future facility expansion
- c) Removal of the existing ground storage tank in favor of an elevated storage tank
- d) Options for emergency power
- e) Analyze alternative arsenic treatment processes compared to expansion of the existing arsenic treatment process. Provide a recommendation for the arsenic treatment method to be incorporated in the final design. Specific removal techniques to be evaluated include:
  - i. Reverse Osmosis Membranes
  - ii. Adsorptive Media Systems
  - iii. Coagulation/Filtration Systems
  - iv. Existing Media System
- f) SCADA and Automation recommendations for operational flexibility
- g) Opinion of Probable Construction Cost for the recommended approach

**B. Project Management**

**1) Monthly Project Meetings**

- a) Prepare Meeting Agenda, Meeting Minutes, and Action Items for up to fourteen (14) months

**2) Agency Coordination**

- a) Coordination with necessary agencies
- b) Submission of required documentation to agencies for approval, including final documents

**3) Quality Assurance/Quality Control**

- a) Perform QA/QC and constructability reviews at the following design milestones:
  - i. 60% Design Milestone
  - ii. 90% Design Milestone

**4) Coordination with Additional Design Engineers**

- a) Coordinate with other design engineers for additional CIP projects taking place at the site

**C. Design Phase Services**

**1) Geotechnical Engineering**

- a) Conduct subsurface drilling with core profiles and bearing capacities
- b) Provide design recommendations for the subsurface of each structure, including foundation design and backfill recommendations

**2) Surveying**

- a) Conduct topographic site survey to include footprint of existing structures, fences, landscaping, drainage structures, piping, and site topography on a 50' x 50' grid, including adjacent or surrounding areas that may be utilized for new components or the location of temporary structures for treatment processes during construction
- b) Prepare a boundary survey of the plant site

**3) Construction Plans**

- a) Prepare and submit for County review detailed construction plans at 30%, 60%, 90% and 100% review milestones
- b) Submit 100% signed and sealed plans for County signature
- c) Submit plans for TCEQ and other applicable agency approvals.
- d) Distribute final approved plans to the County for bidding

**4) Cost Estimates**

- a) Submit for review detailed construction cost estimates at 60%, 90%, and 100% design milestones

**5) Project Manual**

- a) Prepare and submit for County review project manual documents including bid form, technical specifications, and contract documents at 60%, 90% and 100% review milestones
- b) Submit final signed and sealed project manual for County approval
- c) Submit project manual for TCEQ and other applicable agency approvals
- d) Distribute final approved project manual to the County for bidding

**6) Final Engineering Design Report**

- a) Provide a Final Engineering Design Report with 100% Submittal

**D. Bid Phase Services**

**1) Advertising** - Advertisement shall be the responsibility of the County. Baxter & Woodman will provide Notice to Bidders and list of bid items in a format appropriate for the County's bid system.

- a) Respond to questions during advertisement
- b) Prepare conformed project manual and drawings per addenda

**2) Bidding**

- a) Assist in bid evaluation
- b) Prepare bid tabulation

**3) Project Award**

- a) Prepare Recommendation of Award Letter with engineer's recommendation in writing to the County
- b) Attend County meeting and present the recommendation for award of a Contract for construction (if necessary)

**4) Final Plans and Project Manuals**

- a) Produce and transmit to the selected Contractor four (4) sets of plans and project manuals in hard copy, and one electronic format copy to the Project Manager, in a format ready for execution with the County

**E. Construction Phase Services**

**1) Construction Administration**

- a) Attend pre-construction meeting to provide information and answer questions
- b) Attend up to twenty-four (24) specialty site visits with Construction Manager and Contractor to ensure conformance with contract documents
- c) Review and respond to submittals, RFIs and RFPs including coordination with the Construction Manager for any Change Orders

- d) Attend factory witness testing as required (up to three (3) factory site visits)
- e) Coordination of start-up phase services with Programmer and Contractor as necessary
- f) Assist in final construction walk-through and develop punch list
- g) Review Contractor's As-Built redlines and provide comments
- h) Complete Record Drawings in a reproduceable, electronic format
- i) Conduct one-year warranty review and prepare necessary list of deficiency items, including project close-out documentation

The scope of engineering services does not include any property abstracting, easement preparation or creation, recording of easements, land acquisition services, platting services, wetland delineation, environmental studies, historical site studies, endangered species studies or any other site-specific studies. Any adjustments due to unforeseen sight conditions discovered after final design has commenced are not included. If any studies or adjustments to the site due to unforeseen conditions are required, a written proposal will be submitted. Additionally, this scope does not include preparation of an arsenic removal pilot study for submission to the TCEQ. If it is determined the scope of modifications to the arsenic removal treatment process requires a pilot study, a separate proposal will be provided for this service. We anticipate confirming during the Preliminary Engineering phase what changes would trigger the requirement for a pilot study to be performed and approved by the TCEQ.

**3. ENGINEERING FEE - Baxter & Woodman shall be compensated for the services provided as outlined below:**

ITEM	TASK	FEE	PROFIT (10%)	TOTAL FEE
A	Preliminary Design	\$56,940.00	\$5,694.00	\$62,634.00
	<b>TOTAL</b>	<b>\$56,940.00</b>	<b>\$5,694.00</b>	<b>\$62,634.00</b>

Tasks B through F shall only be performed upon written authorization from the County after review and acceptance of the Preliminary Design phase. Authorized tasks will be performed for the fees as outlined below:

ITEM	TASK	FEE	PROFIT (10%)	TOTAL FEE
B	Project Management	\$47,180.00	\$4,718.00	\$51,898.00
C	Design Phase	\$316,910.00	\$31,691.00	\$348,601.00
D	Bid Phase	\$9,860.00	\$986.00	\$10,846.00
E	Construction Phase*	\$78,560.00	\$7,856.00	\$86,416.00
F	Reimbursable Expenses*	\$4,550.00	\$-	\$4,550.00
	<b>TOTAL</b>	<b>\$457,060.00</b>	<b>\$45,251.00</b>	<b>\$502,311.00</b>

\*Fees for Construction Phase Services and Reimbursable Expenses are estimated and will be billed hourly for time and materials.

Should professional engineering services beyond those outlined in this Proposal become necessary due to unforeseen circumstances or changes in the scope of work directed by the County, we will request approval of additional fees as appropriate before proceeding with any additional work.

**4. ATTACHMENTS**

**A. Level of Effort (Man Hour Breakdown)**

The Owner shall pay Baxter & Woodman for the preliminary design services performed or furnished an amount of \$62,634.00. Additionally, if authorized to proceed with the Tasks B through F, the Owner shall pay Baxter & Woodman for the services performed or furnished an amount of \$502,311.00.

Sincerely,

BAXTER & WOODMAN, INC.  
CONSULTING ENGINEERS  
TBPELS REGISTRATION NO. F21783



J.T. 'Tom' Matkin, PE  
Vice President

**BRAZORIA COUNTY COURTHOUSE WEST ANNEX**

ACCEPTED BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

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Client BRAZC - Brazoria County  
 Project Name Sheriff's Office Water Plant Improvements  
 Project Number 2326007.00  
 Project Manager MWF

Work Breakdown Structure				BUDGET															Total Labor Cost	Expenses	Sub-Consultant Cost (+10%)	Total Cost		
				QC Team Vice Pres	Senior Engineer VII	Project Manager	Engineer III	Structural Manager	Structural Engineer	Electrical Manager	Electrical Engineer	I & C Manager	I & C Engineer	Const Mgr II	Const Mgr I	Field Rep III	Field Rep II	Production Manager					CAD Tech II	Admin Assistant II
Phase	Task	Sub Task	Description	Process/Civil/Mechanical/				Structural/Electrical/I&C				Construction				Production		Admin						
				\$260	\$240	\$205	\$170	\$240	\$205	\$225	\$145	\$225	\$170	\$190	\$180	\$135	\$115	\$180	\$135	\$90				
001	<b>Planning/Preliminary Design Phase Services</b>			4	18	52	124	4	14	8	50	8	26	2	2	0	0	0	0	0	\$ 56,940	\$ 150	\$ -	\$ 57,090
	A		Data Collection	0	2	4	4	0	2	0	2	0	2	0	0	0	0	0	0	0	\$ 3,020	\$ 150	\$ -	\$ 3,170
	B		Preliminary Engineering Report	4	16	48	120	4	12	8	48	8	24	2	2	0	0	0	0	0	\$ 53,920	\$ -	\$ -	\$ 53,920
002	<b>Project Management Services</b>			8	16	74	110	4	0	4	10	4	10	4	4	0	0	0	0	0	\$ 47,180	\$ 200	\$ -	\$ 47,380
	A		Monthly Project Meetings	0	0	48	72	0	0	0	8	0	8	0	0	0	0	0	0	0	\$ 24,600	\$ -	\$ -	\$ 24,600
	B		Agency Coordination	0	8	12	36	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 10,500	\$ 200	\$ -	\$ 10,700
	C		Quality Assurance / Quality Control	8	8	12	0	4	0	4	0	4	0	4	4	0	0	0	0	0	\$ 10,700	\$ -	\$ -	\$ 10,700
	D		Coordination with Design Engineers	0	0	2	2	0	0	0	2	0	2	0	0	0	0	0	0	0	\$ 1,380	\$ -	\$ -	\$ 1,380
003	<b>Design Phase Services</b>			2	82	86	424	8	86	30	210	18	150	0	2	0	4	36	504	64	\$ 277,310	\$ 200	\$ 39,600	\$ 317,110
	A		Geotechnical Engineering	0	0	2	4	2	8	0	0	0	0	0	0	0	0	0	0	0	\$ 3,210	\$ -	\$ 26,400	\$ 29,610
	B		Surveying	0	0	2	4	0	0	0	0	0	0	0	0	0	4	0	0	0	\$ 1,550	\$ 200	\$ 13,200	\$ 14,950
	C		<b>Construction Plans</b>	0	76	58	324	4	72	24	180	12	120	0	0	0	0	36	504	0	\$ 230,050	\$ -	\$ -	\$ 230,050
			1 General Civil Site Work		4	8	48										6	48		\$ 18,320	\$ -	\$ -	\$ 18,320	
			2 Piping Plan and Profiles		8	12	72										8	72		\$ 27,780	\$ -	\$ -	\$ 27,780	
			3 Storage Tank Plan and Profiles		4	24	72										8	96		\$ 32,520	\$ -	\$ -	\$ 32,520	
			4 Arsenic Removal		60	8	96										6	48		\$ 39,920	\$ -	\$ -	\$ 39,920	
			5 Detail Sheets			2	24										4	24		\$ 8,450	\$ -	\$ -	\$ 8,450	
			6 Process Schematics			4	12										4	24		\$ 6,820	\$ -	\$ -	\$ 6,820	
			7 Structural					4	72									48		\$ 22,200	\$ -	\$ -	\$ 22,200	
			8 Electrical							24	180							96		\$ 44,460	\$ -	\$ -	\$ 44,460	
			9 Automation and Control									12	120					48		\$ 29,580	\$ -	\$ -	\$ 29,580	
	D		Cost Estimates	2	2	4	12	1	4	1	4	1	4	0	2	0	0	0	0	\$ 6,990	\$ -	\$ -	\$ 6,990	
	E		Project Manual	0	2	16	72	0	0	4	24	4	24	0	0	0	0	0	60	\$ 30,760	\$ -	\$ -	\$ 30,760	
	F		Final Engineering Design Report	0	2	4	8	1	2	1	2	1	2	0	0	0	0	0	4	\$ 4,750	\$ -	\$ -	\$ 4,750	
004	<b>Bid Phase</b>			0	0	8	24	0	0	3	6	3	6	0	0	0	0	0	10	\$ 9,860	\$ -	\$ -	\$ 9,860	
	A		Advertising	0	0	4	8	0	0	2	4	2	4	0	0	0	0	0	2	\$ 4,520	\$ -	\$ -	\$ 4,520	
	B		Bidding	0	0	2	8	0	0	1	2	1	2	0	0	0	0	0	4	\$ 3,210	\$ -	\$ -	\$ 3,210	
	C		Project Award	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	2	\$ 1,270	\$ -	\$ -	\$ 1,270	
	D		Final Plans and Project Manual	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	\$ 860	\$ -	\$ -	\$ 860	
<b>Engineering Hours</b>				14	116	220	682	16	100	45	276	33	192	6	8	0	4			74				
<b>Engineering Costs</b>				\$ 3,640.00	\$ 27,840.00	\$ 45,100.00	\$ 115,940.00	\$ 3,840.00	\$ 20,500.00	\$ 10,125.00	\$ 40,020.00	\$ 7,425.00	\$ 32,640.00	\$ 1,140.00	\$ 1,440.00	\$ -	\$ 460.00			\$ 6,660.00	\$ 316,770	\$ 550	\$ 39,600	\$ 356,920
<b>Production Hours</b>																		36	504					
<b>Production Costs</b>																		\$ 6,480.00	\$ 68,040.00		\$ 74,520			\$ 74,520
<b>TOTAL DESIGN HOURS</b>				14	116	220	682	16	100	45	276	33	192	6	8	0	4	36	504	74				
<b>TOTAL DESIGN COSTS</b>				\$ 3,640.00	\$ 27,840.00	\$ 45,100.00	\$ 115,940.00	\$ 3,840.00	\$ 20,500.00	\$ 10,125.00	\$ 40,020.00	\$ 7,425.00	\$ 32,640.00	\$ 1,140.00	\$ 1,440.00	\$ -	\$ 460.00	\$ 6,480.00	\$ 68,040.00	\$ 6,660.00	\$ 391,290	\$ 550	\$ 39,600	\$ 431,440
005	<b>Constuction Phase Services</b>			0	8	22	52	0	12	7	32	7	32	20	40	132	96	4	40	18	\$ 78,560	\$ 4,000	\$ -	\$ 82,560
	B		Pre-Con Meeting	0	0	4	4	0	0	0	0	0	0	0	4	4	0	0	0	0	\$ 2,760	\$ 200	\$ -	\$ 2,960
	C		Specialty Site Visits	0	4	8	4	0	0	0	4	0	4	0	0	48	48	0	0	0	\$ 16,540	\$ 2,400	\$ -	\$ 18,940
	D		Submittals, RFIs, Change Orders	0	2	2	12	0	4	4	16	4	16	4	12	32	16	0	0	16	\$ 21,110	\$ -	\$ -	\$ 21,110
	E		Factory Witness Testing	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	\$ 1,620	\$ 600	\$ -	\$ 2,220
	F		Start-up Phase Services	0	0	2	8	0	0	0	0	0	0	8	12	12	12	0	0	0	\$ 8,450	\$ 400	\$ -	\$ 8,850
	G		Final Walkthrough	0	0	0	4	0	4	0	4	0	4	4	4	4	0	0	0	0	\$ 4,780	\$ 200	\$ -	\$ 4,980
	I		As-Builts	0	2	2	8	0	2	2	4	2	4	2	4	12	12	0	2	\$ 9,100	\$ -	\$ -	\$ 9,100	
	J		Record Drawings	0	0	2	4	0	2	1	2	0	2	0	0	4	4	4	40	\$ 9,700	\$ -	\$ -	\$ 9,700	
	K		Project Close-Out and Warranty	0	0	2	8	0	0	0	2	0	2	2	4	4	4	0	0	0	\$ 4,500	\$ 200	\$ -	\$ 4,700
<b>Construction Hours</b>				0	8	22	52	0	12	7	32	7	32	20	40	132	96	4	40	18				
<b>Construction Costs</b>				\$ -	\$ 1,920.00	\$ 4,510.00	\$ 8,840.00	\$ -	\$ 2,460.00	\$ 1,575.00	\$ 4,640.00	\$ 1,575.00	\$ 5,440.00	\$ 3,800.00	\$ 7,200.00	\$ 17,820.00	\$ 11,040.00	\$ 720.00	\$ 5,400.00	\$ 1,620.00	\$ 78,560	\$ 4,000	\$ -	\$ 82,560
<b>TOTAL PROJECT HOURS</b>				14	124	242	734	16	112	52	308	40	224	26	48	132	100	40	544	92				
<b>TOTAL PROJECT COSTS</b>				\$ 3,640.00	\$ 29,760.00	\$ 49,610.00	\$ 124,780.00	\$ 3,840.00	\$ 22,960.00	\$ 11,700.00	\$ 44,660.00	\$ 9,000.00	\$ 38,080.00	\$ 4,940.00	\$ 8,640.00	\$ 17,820.00	\$ 11,500.00	\$ 7,200.00	\$ 73,440.00	\$ 8,280.00	\$ 469,850	\$ 4,550	\$ 39,600	\$ 514,000