

**PROFESSIONAL SERVICES
SUPPLEMENTAL AGREEMENT # 5
FOR
CITY OF PFLUGERVILLE WATER TREATMENT PLANT EXPANSION**

**STATE OF TEXAS §
 §
COUNTY OF TRAVIS §**

This Supplemental Agreement No.5 to a contract for Professional Services is made by and between the City of Pflugerville, Texas ("City") and Ardurra Group, Inc.("Consultant"). City and Consultant may be referred to herein singularly as "Party" or collectively as the "Parties."

WHEREAS, the City and Consultant executed an Agreement for Professional Services ("Agreement") on the 16 day of December, 2020 for the City of Pflugerville Water Treatment Plant Expansion project ("Project") in the amount of \$1,947,512.00; and

WHEREAS, the City and Consultant entered into a Supplemental Agreement # 1 for Professional Services for the Project in the amount of Five million two hundred three thousand five hundred twenty-nine dollars (\$5,203,529.00, on the 16th day of July 2021; to add final design and bidding phase services to the Agreement; and

WHEREAS, the City and Consultant entered into a Supplemental Agreement # 2 for Professional Services for the Project in the amount of Three million two hundred seventy-seven thousand four hundred fifty-eight dollars (\$3,277,458.00), on the 24th day of May 2022; to add construction phase services to the Agreement; and

WHEREAS, the City and Consultant entered into a Supplemental Agreement # 3 for Professional Services for the Project in the amount of zero dollars (\$0.00), on the 29th day of September 2022; to add Professional Engineering Services for plant access control, fence replacement and site landscaping by reallocating unused funds from the current contract, to the Agreement; and

WHEREAS, the City and Consultant entered into a Supplemental Agreement # 4 for Professional Services for the Project in the amount of zero dollars (\$0.00), on the 9th day of March 2023; to add Professional Engineering Services for Post Bid Design Changes by reallocating unused funds from the current contract, to the Agreement; and

WHEREAS, the City and Consultant desire to enter into a Supplemental Agreement # 5 for Professional Services for the Project in the amount of \$775,252.00, to advance the design to 100% completion and additional engineering supports pertinent to the new membrane building during construction phase services to the Agreement; and

WHEREAS, it has become necessary to amend the Agreement to modify the provisions for the Scope of Services, Work Schedule and Compensation; and

WHEREAS, it is necessary for the City to amend its agreements from time to time to comply with changes in state law relating to contracts of municipalities.

NOW, THEREFORE, premises considered, the City and the Consultant agree that said Agreement is amended as follows:

1.

Article II. Scope of Services and Appendix A, shall be amended as set forth in the attached addendum to Appendix A.

Article III. Compensation to Consultant and Appendix B (Fee Schedule), shall be amended by increasing by \$775,252.00 the amount payable under the Agreement for a total of \$11,203,751.00, as shown by the attached Addendum to Appendix B (Fee Schedule).

Article IV. Work Schedule and Appendix C, shall be amended as set forth in the attached addendum to Appendix C.

2.

Except as amended hereby and as previously amended as indicated above, the terms of the Agreement shall remain unchanged and in full force and effect.

EXECUTED and AGREED to as of the dates indicated below.

**CITY OF
PFLUGERVILLE**

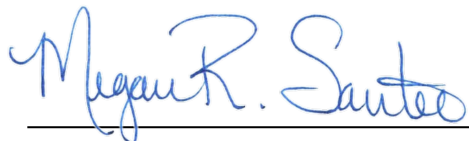
CONSULTANT



(Signature)
Printed Name: Sereniah Breland
Title: City Manager
Date: _____

(Signature)
Printed Name: Yue Sun, PE
Title: Project Director
Date: July 13, 2023

APPROVED AS TO FORM:



Charles E. Zech

City Attorney

DENTON NAVARRO ROCHA BERNAL & ZECH, P.C.

**SCOPE OF SERVICES
FOR
CITY OF PFLUGERVILLE
WATER TREATMENT PLANT EXPANSION
POST-BID DESIGN CHANGES
New Membrane Building Design Completion and Construction Phase Services**

SCOPE OF WORK

The scope of work presented below describes the basic services for change requests made by the City for the WTP Expansion project. Unless noted otherwise, all deliverables will be electronic PDF.

Current design of the membrane system for the 30-MGD plant expansion was based upon retrofitting existing building as recommended from a previous feasibility study performed by others. Upon further discussion with the City project team, it is recommended that a new membrane building be designed and constructed for the plant 30-MGD expansion. The new building design will greatly improve constructability as compared to the retrofit design, minimize process interruption during construction, maintain plant production as required, and potentially reduce construction duration for the project. In a long run, this design change would provide better operability, ease maintenance, and enhance system operational flexibility. Therefore, it was collaboratively agreed by the city, Ardurra team, and PLW to proceed with this design change. The following outlines a basis of design for the membrane new building design:

- A new pre-engineered metal building to house new membrane basins, new membrane strainers, submersible membrane filtration units, and permeate pumps.
- A new chemical clean-in-place(CIP)/neutralization system with a CIP tank, two CIP feed pumps (one duty and one standby), CIP chemical storage and feed equipment, a CIP waste neutralization tank and two pumps(one duty and one standby), and associate piping. The CIP tank and feed pumps will be installed inside the new Membrane Building, and CIP chemical storage tanks and waste neutralization tank will be installed outdoors adjacent to the new building. Similar concept to the retrofit design will be carried over with modifications to suit the new building layout.
- A new backwash system with one backwash tank and two BW pumps (one duty and one standby), and associated piping. The backwash tank and pumps will be installed inside the new Membrane Building. Similar concept to the retrofit design will be carried over with modifications to suit the new building layout.
- A new precast concrete building to house air scour blowers and associated piping. Two blowers (one duty and one standby) will be installed for the expansion phase. The new building will remain in the proximity of the current location as proposed in the retrofit design; however, the air scour blower building will be sized to make room for a 3rd blower unit that will be installed in the future.

Appendix A / Detailed Scope of Engineering Services

- A new backwash waste pump station outside the membrane building to house two submersible centrifugal pumps. The pump station will remain in the proximity of the current location as proposed in the retrofit design but will be modified in orientation to suit new piping layout.
- A new air compressor room inside the new building to house air compressors and receivers, with one system dedicated to process air use for membrane integrity test, and the other dedicated to instrument air for pneumatic valves operation.
- Two electrical rooms will be integrated in the new building. A Main Electrical Room will house major electrical equipment (MCC, switchgear, VFD etc.), and membrane MCP. The main electrical room will make space to allow for future expansion from 30 MGD to 45 MGD. A secondary Electrical Room will also be provided and this room will be dedicated to the CIP/Neutralization area for housing a dedicated RIO and other associated electrical equipment.
- The new membrane building will also include a unisex rest room, a storage room, and a mechanical room.

Design of the new membrane building to a 30% level was provided in PSSA No. 4. This PSSA describes proposed scope of work to advance the design to 100% completion and additional engineering supports pertinent to the new membrane building during construction phase services.

Task PSSA 5.1 New Membrane Building 30% to 100% Design Completion

5.1.1 Project Management, Coordination and QAQC

Engineer will conduct design coordination with design team and subconsultants to coordinate design tasks, review all project elements, to facilitate development of final design. Engineer will coordinate with the City staff to manage the delivery of the work.

Engineer will perform quality assurance/quality control procedures for the new building design. These procedures will include a technical review of interim deliverables by senior technical advisors who are not directly involved with the project. The technical review will provide comments and suggestions concerning the various project deliverables for incorporation. The technical review will include process and technical feasibility, constructability, discipline coordination, and plans and specification coordination. A final cross-discipline quality check will be performed for coordination and constructability prior to issue a regulatory review plan set.

Engineer will conduct two progress meetings (up to two hours each) with PLW and City project team to review design progress, project schedule, and upcoming issues. The appropriate Engineering team members shall attend the meeting to discuss pertinent issues. Engineer will prepare meeting agenda and issue meeting summary.

Engineer will conduct up to four (4) design coordination meetings/calls with design team to coordinate design tasks, review all project elements, to facilitate development of final design.

5.1.2 100% Plan Development

Appendix A / Detailed Scope of Engineering Services

Engineer will advance design from current 30%+ to 100% level including process mechanical, site civil, yard piping and site plan, building architectural, structural, building mechanical, electrical, and instrumentation and control and SCADA integration improvements. Constructability review will be performed to update sequencing and staging plan due to the building design change. Revised plans will be issued in electronic PDF.

5.1.3 Specification Revisions

Engineer will issue specification revision pertinent to the new building design.

5.1.4 Coordination with TCEQ and Texas Department of Licensing and Regulation (TDLR)

Engineer will review and submit documents to be in compliance with Texas Commission on Environmental Quality (TCEQ) rules and regulations. Engineer will submit 95-percent complete plans and specifications to TCEQ for review. Upon receipt of plan review comments, Engineer will respond in writing and make necessary changes to the contract documents and resubmit a 100- percent set of signed and sealed bid documents. This task also includes miscellaneous design coordination that will be made with TCEQ over the course of the design phase.

Engineer will include necessary provisions within the new building design to be compliant with accessibility per the TDLR. Engineer will obtain the services of Registered Accessibility Specialist (RAS) and submit 95-percent plans and specifications to the RAS for review to obtain approval through the TDLR ADA compliance review. Upon receipt of comments, Engineer will make appropriate changes in the contract documents to address requested changes.

5.1.5 City Site Plan and Building Permit Review

Engineer will coordinate with City site plan and building Permit reviews and submit plans for review and approval. Engineer will conduct a pre-application meeting with the city reviewers to review general scope of work and proposed site plan to facilitate site plan and building review. Engineer will prepare and submit a permit package to City site plan and building Permit reviews. Upon receipt of plan review comments, Engineer will respond in writing and make necessary changes to the contract documents and resubmit a 100- percent set of signed and sealed bid documents.

5.1.6 FAA Coordination

Engineer will develop and submit layout and elevation data for proposed new building to the FAA to review through its online portal. Engineer will submit permanent obstruction data and temporary construction data such as construction cranes used during construction.

Task PSSA 5.2 Additional Construction Phase Engineering Services for Membrane New Building

5.2.1 Monthly Progress Meetings and Site Visits

Pre-construction Meeting: The services have been included in the PSSA 2 scope.

Appendix A / Detailed Scope of Engineering Services

Monthly Progress Meetings: The services have been included in the PSSA 2 scope.

Virtual Meetings: The services have been included in the PSSA 2 scope.

Post-Progress Meeting Site Visits: The services have been included in the PSSA 2 scope.

Discipline Site Visits: Additional site visits pertinent to the membrane new building are included by various discipline leads. These site visits will be used to address any field issues that may rise during construction.

5.2.2 Submittal Review and Substitutions

The Engineer will review and approve, or take other appropriate action, with respect to shop drawings, equipment operation manuals, samples, and other data pertinent to the membrane new building design which Construction Contractor is required to submit for conformance with the Contract Documents.

Submittal Review Coordination Virtual Meetings. To facilitate quick turnaround on key submittal reviews by multidiscipline, submittal review coordination virtual meetings will be held with the key project team members, Contractor and equipment suppliers to discuss review comments and clarifications. These meetings will be no more than 1 hour each.

Review laboratory, shop, and mill test of material for general conformance with Contract Document requirements.

Assume no substitution request will be made related to the membrane new building.

5.2.3 Requests for Information and Work Change Directives

The Engineer will address Request for Information (RFI) submitted during construction to provide additional clarifications regarding the intent of the Contract Documents as appropriate to facilitate the completion of the work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents.

Assume no additional Work Change Directives (WCD) will be issued related to the membrane new building.

5.2.4 Substantial and Final Completion Inspections

This covers additional services that Engineer will provide for substantial completion inspections, development of punch list, and final completion inspection pertinent to membrane new building.

5.2.5 Record Drawings

This covers additional services that Engineer will provide to develop record drawings based on the as-built redlines pertinent to membrane new building.

OTHER SERVICE TASKS, CLARIFICATIONS AND EXCLUSIONS

Other service tasks will be negotiated with the City as needed, including additional studies and investigation as required to support recommended solution and/or as required to address system which may become affected as a result of the proposed work but not originally envisioned or as added by the City. These other services may include the following and will be authorized by the City in writing for an additional fee as agreed upon by the City and the Engineer:

Appendix A / Detailed Scope of Engineering Services

1. Any additional meetings, outside of those listed herein
2. Any additional survey work
3. Subsurface utility engineering
4. Any additional geotechnical borings and laboratory testing
5. Physical laboratory scale modeling
6. Hydraulic transient analysis
7. Computational fluid dynamics (CFD) modeling
8. Drawings will be developed in 2D version of AutoCAD
9. Site landscaping
10. Texas Department of Insurance design review as city is located outside of tier 1 counties
11. Development of engineering's opinion of probable construction cost (EOPCC)
12. Development of value engineering design options and associated cost savings
13. Hard copies of conformed plans and specifications
14. Plant SCADA system programming and application engineering services
15. Vendor control panel testing by City SCADA Inspector
16. HVAC Inspection
17. Any additional meetings during construction and commissioning and start-up, outside of those listed in PSSA 2
18. Analytical laboratory testing during C&SU
19. Testing chemicals during C&SU
20. System Operation and Maintenance manual
21. Engineer's support to provide documents and respond questions from federal funding agencies, and to prepare, coordinate, and submit necessary documentation to assist with project reimbursement and project closeout documents.
22. Hard copies of record drawings and specifications
23. Engineer support services during one-year warranty outside of those listed in PSSA 2

Appendix B
City of Pflugerville WTP Expansion
Post-Bid Design Changes - New Membrane Building
Level of Efforts Fee Estimate

Task	Subtask	Task Description	Ardurra Estimated Man-hours											Subconsultants					Subconsultant Total	Ardurra Sub Mark-up (5%)	Total Cost (Ardurra + Subs)								
			Project Principal	QA/QC /Technical Specialist	Sr. PM	Sr. Proj. Eng. (Process Mech)	Proj. Eng. (Process Mech)	EIT (Process Mech)	Sr. Proj. Mgr (Structural /Arch)	Proj. Eng. (Structural /Arch)	EIT (Structural/Arch)	CAD Designer	CAD Technician	Word Processor/Project Admin	Contract Admin	Ardurra - Total Hours (Hrs)	Ardurra Subtotal Labor Cost (\$)	Ardurra Subtotal (\$)				KFA (Site Civil, Process Mechanical Support)	MEI (I&C, SCADA)	GAI (Electrical)	AACE (MEP/HPF)				
Position Rate			\$ 300.00	\$ 300.00	\$ 300.00	\$ 240.00	\$ 180.00	\$ 145.00	\$ 240.00	\$ 205.00	\$ 140.00	\$ 165.00	\$ 120.00	\$ 120.00	\$ 90.00														
PSSA 5.1 - New Membrane Building 30%-100% Design Completion																													
	5.1.1	Project Coordination and QAQC																											
		Project Management/Adminstration			24									8		32	\$ 8,160.00	\$ 8,160.00				\$2,200.00	\$2,328.00	\$1,180.00	\$5,708.00	\$ 285.40	\$ 14,153.40		
		Quality Assurance/Quality Control and Internal Technical Review		48												48	\$ 14,400.00	\$ 14,400.00			\$1,540.00	\$3,616.00	\$3,052.00	\$8,208.00	\$ 410.40	\$ 23,018.40			
		Two Progress Meetings with PLW & City			12		16	16								44	\$ 8,800.00	\$ 8,800.00			\$1,448.00	\$1,448.00		\$1,448.00	\$ 72.40	\$ 10,320.40			
		Project Team Coordination/Meetings (4)			32		48	24								104	\$ 21,720.00	\$ 21,720.00			\$2,695.00	\$8,268.00	\$1,311.00	\$12,274.00	\$ 613.70	\$ 34,607.70			
	5.1.2	100-Percent Plans																											
		Civil, and Site Work, SWPPP			12	6										18	\$ 5,040.00	\$ 5,040.00	\$14,440.00					\$14,440.00	\$ 722.00	\$ 20,202.00			
		Yard Piping & Site Plan			24		48	120				100	200			492	\$ 73,740.00	\$ 73,740.00					\$0.00	\$ -	\$ 73,740.00				
		Process Mechanical Design			48		120	96				240	250			754	\$ 119,520.00	\$ 119,520.00					\$0.00	\$ -	\$ 119,520.00				
		Architectural Design			16	16			48	150	160					390	\$ 73,310.00	\$ 73,310.00					\$0.00	\$ -	\$ 73,310.00				
		Structural Design			16	16			40	60	60					192	\$ 38,940.00	\$ 38,940.00					\$0.00	\$ -	\$ 38,940.00				
		HVAC, Plumbing, and Fire Protection Design			16	16										32	\$ 8,640.00	\$ 8,640.00					\$33,430.00	\$33,430.00	\$ 1,671.50	\$ 43,741.50			
		Electrical Design			16	24										40	\$ 10,560.00	\$ 10,560.00			\$55,736.00		\$55,736.00	\$ 2,786.80	\$ 69,082.80				
		Instrumentation, Control, and SCADA Design			16	10										26	\$ 7,200.00	\$ 7,200.00			\$1,310.00		\$1,310.00	\$ 65.50	\$ 8,575.50				
	5.1.3	Specification Revisions			16		24	48						16		104	\$ 18,000.00	\$ 18,000.00			\$2,672.00	\$3,638.00	\$6,310.00	\$ 315.50	\$ 24,625.50				
	5.1.4	Coordination with TCEQ and Texas Department of Licensing and Regulation (TDLR)																											
		Coordination with TCEQ/TWDB			8		12	24						6		50	\$ 8,760.00	\$ 8,760.00					\$0.00	\$ -	\$ 8,760.00				
		Coordination with TDLR			8		16			24				6		54	\$ 9,400.00	\$ 9,400.00					\$0.00	\$ -	\$ 9,400.00				
	5.1.5	City Building Permit/Planning/Fire Marshal Review			4	12	32	48	12	16	36	20		24		204	\$ 34,180.00	\$ 34,180.00			\$2,450.00	\$800.00	\$3,250.00	\$ 162.50	\$ 37,592.50				
PSSA 5.1 - New Membrane Building 30%-100% Design Completion			0	48	260	100	308	392	100	250	256	360	450	60	0	2584	\$ 460,370.00	\$ 460,370.00	\$14,440.00	\$ 7,745.00	\$76,518.00	\$43,411.00	\$142,114.00	\$ 7,105.70	\$ 609,590.00				
PSSA 5.2 - Additional Construction Phase Engineering Services for New Membrane Building																													
	5.2.1	Monthly Progress Meetings and Site Visits																											
		Pre-construction Meeting - included in PSSA 2														0	\$ -	\$ -						\$0.00	\$ -	\$ -			
		Monthly Progress Meetings - included in PSSA 2														0	\$ -	\$ -						\$0.00	\$ -	\$ -			
		Quarterly Virtual Meetings - Included in PSSA 2														0	\$ -	\$ -						\$0.00	\$ -	\$ -			
		Post-Progress Meeting Site Visits - Included in PSSA 2														0	\$ -	\$ -						\$0.00	\$ -	\$ -			
		Discipline Site Visits														8	\$ 1,640.00	\$ 1,640.00	\$2,310.00	\$15,720.00	\$18,296.00	\$1,426.00	\$37,752.00	\$ 1,887.60	\$ 41,279.60				
	5.2.2	Submittal Review																						\$0.00	\$ -	\$ -			
		Submittal Review	0	0	24	24	100	0	56	60	0	0	0	0	264	\$ 56,700.00	\$ 56,700.00	0	0	0	\$ 13,372.00	\$13,372.00	\$ 668.60	\$ 70,740.60					
		Submittal Review Coordination Meetings			24	24										48	\$ 12,960.00	\$ 12,960.00					\$0.00	\$ -	\$ 12,960.00				
		Review Material Testing Data					16									16	\$ 2,880.00	\$ 2,880.00					\$0.00	\$ -	\$ 2,880.00				
		Substitution Requests (assume no related to membrane new building)														0	\$ -	\$ -					\$0.00	\$ -	\$ -				
	5.2.3	Requests for Information/Word Change Directives																						\$0.00	\$ -	\$ -			
		RFI			16		16		16	16		8	12			84	\$ 17,560.00	\$ 17,560.00					\$0.00	\$ -	\$ 17,560.00				
		Work Change Directive (assume no related to membrane new building)														0	\$ -	\$ -					\$0.00	\$ -	\$ -				
	5.2.4	Substantial and Final Completion Inspections																						\$0.00	\$ -	\$ -			
		Substantial Completion Inspections and Punchlist				8	8		8	10						34	\$ 7,330.00	\$ 7,330.00					\$713.00	\$713.00	\$ 35.65	\$ 8,078.65			
		Final Completion Inspections														0	\$ -	\$ -					\$713.00	\$713.00	\$ 35.65	\$ 748.65			
	5.2.5	Record Drawing Development	0	0	0	0	12	16	6	8	0	8	16	0	0	66	\$ 10,800.00	\$ 10,800.00					\$585.00	\$585.00	\$ 29.25	\$ 11,414.25			
PSSA 5.2 - Additional Construction Phase Engineering Services for New Membrane Building			0	0	64	56	152	16	86	102	0	16	28	0	0	520	\$ 109,870.00	\$ 109,870.00	\$ 2,310.00	\$ 15,720.00	\$ 18,296.00	\$ 16,809.00	\$ 53,135.00	\$ 2,656.75	\$ 165,662.00				
TOTAL			0	48	324	156	460	408	186	352	256	376	478	60	0	3104	\$ 570,240.00	\$ 570,240.00	\$ 16,750.00	\$ 23,465.00	\$ 94,814.00	\$ 60,220.00	\$ 195,249.00	\$ 9,762.45	\$ 775,252.00				

Scope of Services
Membrane Building Design Revisions
Water Treatment Plant Expansion Project

Background

Ardurra Group, Inc. (Ardurra) and K Friese & Associates, Inc. (KFA) completed the design and bid phase services for the City of Pflugerville (Client) Water Treatment Plant Expansion to 30.0 MGD (Project). KFA will provide drawing revisions for the paving and drainage components designed by KFA. The scope is limited to updating the paving and drainage drawings prepared by KFA for the following changes:

- New Membrane Building

KFA anticipates updated the following sheets:

- C-10 WTP PROPOSED OVERALL DRAINAGE AREA MAP
- C-11 WTP DDRAINAGE CALCULATIONS
- C-12 WTP OVERALL DRAINAGE AND GRADING PLAN
- C-13 WTP DRAINAGE AND GRADING PLAN I
- C-15 WTP DRAINAGE AND GRADING PLAN III
- C-16 WTP DRAINAGE AND GRADING PLAN IV
- C-17 WTP POND PLAN AND SECTIONS I
- C-18 WTP POND PLAN AND SECTIONS II
- C-23 OVERALL PAVING PLAN
- C-25 WTP ENLARGED PAVING PLAN I
- C-27 WTP ENLARGED PAVING PLAN III
- C-28 WTP ENLARGED PAVING PLAN IV

The Scope of Services and Fee are based on the following assumptions.

- The design is based on the decisions made during project review with Ardurra, the City of Pflugerville, and Contractor.
- Drawings will be developed in 2D versions of AutoCAD.
- Deliverables to Ardurra will be electronic in searchable pdf format.
- The current design is 30% complete. This design effort presented will be to complete the design to 100% for TCEQ plan review (no additional City of Pflugerville submission).
- Building permit review - Coordinate with City of Pflugerville for plan review and approval.
- Additional Construction Phase Services (review of new/modified submittals and RFIs).

Basic Services Schedule

The level of effort is based on a schedule appropriate for the modifications, at least six weeks, starting May 15, 2023.

Scope of Services
Membrane Building Design Revisions
Water Treatment Plant Expansion Project

Fee

KFA will conduct the Scope of Services in accordance with the Scope Assumptions for a lump sum fee of \$16,750. Table 2 provides a breakdown of the fee.

Table 2: Basic Services Fee Summary

Phase	Fee
Construction Services	\$2,310
Design Drawing Updates	\$14,440
Expenses	\$0
Total	\$16,750



Gupta & Associates, Inc.

consulting engineers
TBPE Registration #F-2593
13717 Neutron Road
Dallas, Texas 75244
Tel: 972-490-7661

05 May 2023

Ardurra Group, Inc.
2032 Buffalo Terrace
Houston, Texas 77019
Attn: Yue Sun, P.E.
(346) 666-5173 (Office)
ysun@ardurra.com

Re: Pflugerville SWTP
Membrane Building 100% design- Amendment.

Dear Ms. Sun:

Gupta & Associates, Inc. (GAI) is thankful for the opportunity to work with you on this Project. We are requesting an increase in our existing contract for the 100% design of the new membrane building. This work is summarized by the following:

1. Complete the design from conceptual phase to 100% design drawings.
 - a. Finalize the MCC One Line Diagrams.
 - b. Provide new panelboard schedules.
 - c. Includes new electrical and PLC space within the new building.
 - d. Modification to the incoming electrical duct banks.
 - e. Power Distribution to the equipment in the new building.
 - f. Finalize the control, instrumentation and network cables.
 - g. Design of cable trays for power distribution
 - h. Design of lighting and controls
 - i. Design of receptacle layout and power feed.
 - j. Design of electrical power and controls for the proposed HVAC systems.
 - k. Design of PLC network based on equipment layout.
 - l. Design of fire alarm system for the building.
 - m. Design of security system for the building.
 - n. Modify the prepurchase equipment as necessary.
2. Provide power to the existing membrane building, use existing ductbank to reconnect power to existing motor control centers.
3. Coordinate between various disciplines and attend internal coordination meetings.
4. Conduct internal QAQC for the project.
5. Participate in review meetings with Ardurra and City of Pflugerville.
6. Prepare 100% design document for contractor price.
7. Respond to contractor's questions.
8. Construction phase service to coordinate with CMAR, review additional shop drawings for HVAC, fire alarm system and validation of existing equipment.

GAI is requesting an additional fee for the requested services under the existing sub-consultant agreement for this Project. The fee request for this work is summarized below:

Description

Original Contract Amount:		\$ 124,682
Previously Approved Contract Amendments Prior to This One (Final Design):		\$ 827,861
Previously Submitted, but not yet Approved Amendment (Construction Phase):		\$ 319,156
Security System Amendment		\$ 32,500
New Membrane Building Conceptual design (Not approved Yet)		<u>\$54,896</u>
Current Contract Amount:		\$ 1,359,095
Requested Additional Fee:	\$94,814	
Amount of This Contract Amendment:		<u>\$ 94,814</u>
Total Revised Contract Amount:		\$ 1,453,909

If this is acceptable, please sign below and return this as our notice to proceed.

Submitted by:

Approval for Ardurra Group, Inc.:

By: _____
 V.K. Gupta, PE
Title: President
Date: 05 May 2023

By: _____

Title: _____
Date: _____

**Pflugerville SWTP Expansion
New Membrane Building**

Gupta & Associates, Inc.		Principal		Project Manager		Engineer - Senior		Engineer		Project Engineer		CAD Tech - Senior		CAD Tech		Accountant		Admin		Subtotal		ODCs	Markup	TOTAL	
		Rate: \$	289	Rate: \$	279	Rate: \$	257	Rate: \$	195	Rate: \$	167	Rate: \$	123	Rate: \$	101	Rate: \$	123	Rate: \$	84			5%			5%
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost		
TASK SUMMARY - BASIC SERVICES																									
1.0	Project Management/Administration	0	\$ -	0	\$ -	4	\$ 1,028	24	\$ 4,680	24	\$ 4,008	0	\$ -	0	\$ -	8	\$ 984	16	\$ 1,344	76	\$ 12,044		\$0	\$0	\$ 12,044
	1.1 Project Management/Administration		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	1.2 Invoice Processing		\$ -		\$ -	0	\$ -		\$ -		\$ -		\$ -		\$ -	8	\$ 984	16	\$ 1,344	24	\$ 2,328		\$0	\$0	\$ 2,328
	1.3		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	1.4 Meetings		\$ -		\$ -	4	\$ 1,028	20	\$ 3,900	20	\$ 3,340		\$ -		\$ -		\$ -		\$ -		44	\$ 8,268	\$0	\$0	\$ 8,268
	1.5 Pre-Design Kickoff Meeting		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	1.6 Design Progress Meetings (with Owner)		\$ -		\$ -		\$ -	4	\$ 780	4	\$ 668		\$ -		\$ -		\$ -		\$ -		8	\$ 1,448	\$0	\$0	\$ 1,448
	1.7		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	1.8		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	1.9		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	1.10		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
3.0	100% Design Phase - ED&C		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	8	\$ 672	483	\$ 82,770		\$0	\$0	\$ 82,770
	3.1 Site Investigation		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	3.2 Plan Drawings		\$ -		\$ -		\$ -	80	\$ 15,600	160	\$ 26,720	40	\$ 4,920	40	\$ 4,040		\$ -		\$ -		320	\$ 51,280	\$0	\$0	\$ 51,280
	3.3		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	3.4 Inter-Disciplinary Coordination		\$ -		\$ -		\$ -	8	\$ 1,560	8	\$ 1,336		\$ -		\$ -		\$ -		\$ -		16	\$ 2,896	\$0	\$0	\$ 2,896
	3.5 Construction Specifications		\$ -		\$ -		\$ -		\$ -	16	\$ 2,672		\$ -		\$ -		\$ -	0	\$ -		16	\$ 2,672	\$0	\$0	\$ 2,672
	3.6		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	3.7 OPCC		\$ -		\$ -		\$ -	8	\$ 1,560		\$ -		\$ -		\$ -		\$ -		\$ -		8	\$ 1,560	\$0	\$0	\$ 1,560
	3.8 Submittal - 100% (Packaging and Quality Reviews)		\$ -	3	\$ -	8	\$ 2,056	8	\$ 1,560		\$ -		\$ -		\$ -		\$ -		\$ -		19	\$ 3,616	\$0	\$0	\$ 3,616
	3.9 Design Review Meeting		\$ -	2	\$ -		\$ -	4	\$ 780	4	\$ 668		\$ -		\$ -		\$ -		\$ -		10	\$ 1,448	\$0	\$0	\$ 1,448
	Review Comments Response		\$ -		\$ -		\$ -		\$ -	6	\$ 1,002		\$ -		\$ -		\$ -		\$ -		6	\$ 1,002	\$0	\$0	\$ 1,002
	Construction Phase Services		\$ -	0	\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
	CMAR Coordination		\$ -	16	\$ 4,464	16	\$ 4,112		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		32	\$ 8,576	\$0	\$0	\$ 8,576
	Services during construction		\$ -	0	\$ -	4	\$ 1,028	24	\$ 4,680	20	\$ 3,340		\$ -		\$ -		\$ -	8	\$ 672	56	\$ 9,720	\$0	\$0	\$ 9,720	
			\$ -	0	\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
			\$ -	0	\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
			\$ -	0	\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		0	\$ -	\$0	\$0	\$ -
		0	\$0	0	\$0	4	\$1,028	24	\$4,680	24	\$4,008	0	\$0	0	\$0	8	\$984	24	\$2,016	559	\$94,814		\$0	\$0	\$ 94,814

City of Pflugerville		Labor Classifications					Non-Labor Fee				
New Membrane Bldg 100% Design		Hours					Non-Labor				
Level Of Effort Spreadsheet		\$200	\$185	\$120	\$75						1.00
		PM	Sr	Sr	Sr						
		Principal	I&C	CAD	Adm	Total	Labor				Sub-
Task Description						Hours	Fee	Repro	Trav	Deliver	Total
Phase 2 - Basic Design (30%)						0	0				0
1.0	Project Management										
1.1	General Project Management	8			8	16	2,200				0
1.2						0	0				0
1.3						0	0				0
1.4						0	0				0
	<i>Subtotal</i>	8	0	0	8	16	2,200	0	0	0	0
2.0	Meetings										
2.1	Coordination with Ardurra (4)	4	4			8	1,540				0
2.2	Coordiantion with GAI (1)	1	1			2	385				0
2.3	Coordination with Memcor (2)	2	2			4	770				0
2.4	100% Review	4	4			8	1,540				0
2.5						0	0				0
2.6						0	0				0
2.7						0	0				0
	<i>Subtotal</i>	11	11	0	0	22	4,235	0	0	0	0
3.0	Intrumentation Design 30%										
3.1	Securtiy Network Review	1	6			7	1,310				0
3.2						0	0				0
3.3						0	0				0
3.4						0	0				0
3.5						0	0				0
3.6						0	0				0
3.7						0	0				0
3.8						0	0				0
3.9						0	0				0

City of Pflugerville New Membrane Bldg 100% Design Level Of Effort Spreadsheet		Labor Classifications					Non-Labor Fee				
		Hours					Non-Labor				
Task Description		\$200 PM Principal	\$185 Sr I&C	\$120 Sr CAD	\$75 Sr Adm	Total Hours	Labor Fee	Repro	Trav	Deliver	Sub- Total
3.10						0	0				0
	<i>Subtotal</i>	<i>1</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>7</i>	<i>1,310</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
4.0											
4.1						0	0				0
4.2						0	0				0
	<i>Subtotal</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
5.0	Construction Services										
5.1	11211 Permeate Pumps submittal	1	4			5	940				0
5.2	11900 Process Controls Overview submittal	2	16			18	3,360				0
5.3	11900 Electrical Submittal	2	12			14	2,620				0
5.4	11211 Backwash Pump submittal	1	4			5	940				0
5.5	11211 CIP/Neut Pumps submittal	1	4			5	940				0
5.6	11370 Air Compressors B60 submittal	1	4			5	940				0
5.7	11900 P&IDs submittal	2	16			18	3,360				0
5.8	11900 Final I/O List submittal	2	12			14	2,620				0
5.9						0	0				0
5.10						0	0				0
5.11						0	0				0
5.12						0	0				0
	<i>Subtotal</i>	<i>12</i>	<i>72</i>	<i>0</i>	<i>0</i>	<i>84</i>	<i>15,720</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
	Phase 1 Total	32	89	0	8	129	23,465	0	0	0	0
	Sub Total	32	89	0	8	129	23,465				0

City of Pflugerville	Labor Classifications						Non-Labor Fee			
New Membrane Bldg 100% Design	Hours						Non-Labor			
Level Of Effort Spreadsheet	\$200	\$185	\$120	\$75						1.00
	PM	Sr	Sr	Sr						
	Principal	I&C	CAD	Adm	Total	Labor				Sub-
Task Description					Hours	Fee	Repro	Trav	Deliver	Total
Total	\$ 23,465.00									

2023-May-11

Yue Sun, PE, BCEE
Project Manager
Ardurra Group, Inc.
2032 Buffalo Terrace
Houston, TX 77019

**RE: AAACE Amendment #5 for the
Mechanical/HVAC, Plumbing and Fire Alarm Engineering Services
100% Detail Design, Bid and Construction Administration Phase Services for
the New Membrane Building
Pflugerville WTP Expansion (PROJECT)
City of Pflugerville, TX)**

Dear Yue:

The purpose of this letter is to amend our scope for HVAC, Plumbing and Fire Protection engineering services from our executed agreement dated December 22, 2020, due to Owner directed design for a new Membrane Building at the Pflugerville WTP in Pflugerville, TX. The intent of this new scope is to produce a 100% level design, including associated bid and construction administration phase services for the New Membrane Building. This Amendment #5 is based on the following scope:

- 1) Produce 100% level engineering design of the HVAC, Plumbing and Fire Protection/Fire Alarm work based on the 30% conceptual design issued on April 2023 for the new Membrane Building (Amendment #4).
- 2) The new Membrane Building scope will require revising existing sheets from the June 2022 IFB set due to the elimination of existing Membrane Building design and producing additional sheets specific for the new Membrane Building. The following sheets are anticipated to be added to the June 2022 IFB set due to the addition of the new Membrane Building scope:
 1. Overall HVAC Floor Plan – *included in 30% deliverable*
 2. HVAC Equipment Schedules
 3. HVAC Plan – Electrical Room
 4. HVAC Plan - Blower Building – *included in 30% deliverable*
 5. Overall HVAC Roof Plan
 6. HVAC Section I – *included in 30% deliverable*
 7. HVAC Sections II
 8. HVAC Details III
 9. HVAC Controls I
 10. Overall Plumbing Plan – *included in 30% deliverable*
 11. Plumbing Risers & Schedules
 12. Plumbing Details I
 13. Fire Protection Plan
- 3) 100% Design of the new Membrane Building completed by 8/31/2023, inclusive of TCEQ review.

-
- 4) Revise previously issued IFB specifications and add new specifications due to addition of the new Membrane Building scope and removal of the existing Membrane Building scope.
 - 5) No additional site visits or meetings at PROJECT site required.

Amendment #5 amount is **\$60,220** which increase our fee from \$226,911* (which includes original scope, Amendment #1, #2, #3 and #4) to \$287,131* and shall not exceed this revised amount without Ardurra's prior written approval.

*Note that Amendment #5 fee amount indicated above is based on:

Amendment #3 (Chemical Building Move) at \$5,339 and,
Amendment #4 (New Membrane Building 30% Conceptual Design) at \$18,799,

which have not been fully executed to AACE as of 5/11/2023, but are anticipated to be issued as separate amendments to AACE.

Assumptions:

- 1) No major redesign from 30% conceptual new Membrane Building design issued in April 2023.
- 2) No work to existing Membrane Building drawings. No demolition of existing membrane building. Existing membrane building stays as-is.

We appreciate you for the opportunity to support you and the rest of the Ardurra Team on this project. If you have any questions or comments, feel free to contact me.

Regards,

Ricardo J. Azcarate, P.E.
President
AACE, LLC

**Exhibit B
Level of Effort***

**AACE - Responsible for HVAC, Plumbing, and Fire Protection
Pflugerville WTP Expansion - New Membrane Building - Amendment #5**



Date: 5/11/2023

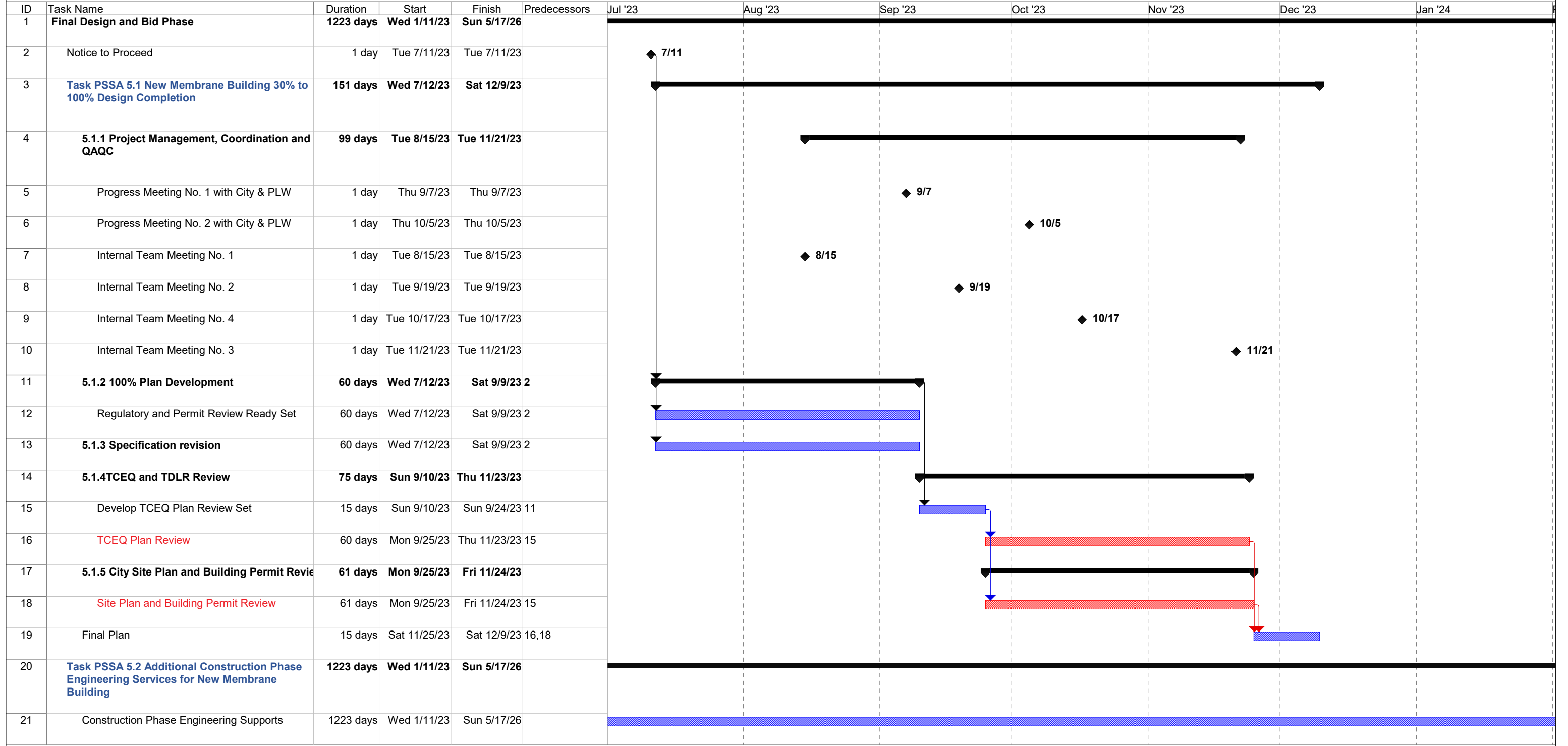
			AACE Estimated Man-hours						AACE - Total Hours	AACE Subtotal Labor Cost	AACE Subtotal	
Task	Subtask	Task Description	Principal	QA/QC/ Technical Specialist	Sr. PM	Mid. Eng. 4/5	EIT Eng. 1	Admin 2	Sr. Admin 5/Acct	(Hrs)	(\$)	(\$)
PART 2 - ADDITIONAL SERVICES												
A1.01. GENERAL PROJECT MANAGEMENT AND COORDINATION*												
	1	QA/QC and Technical Review	14							14	\$ 3,052.00	\$ 3,052.00
	2	Project Schedule, Filing, Invoicing, Progress Report & Contract Administration	4						4	8	\$ 1,180.00	\$ 1,180.00
		Project Task Expenses (0% on Subtotal Hrs Cost)										\$ -
A1.01. GENERAL PROJECT MANAGEMENT AND COORDINATION*			18	0	0	0	0	0	4	22	\$ 4,232.00	\$ 4,232.00
A1.03. DESIGN PHASE*												
	1	Plans and Specifications	10		120		120		10	260	\$ 33,430.00	\$ 33,430.00
	CH-1A	Overall HVAC Floor Plan - incl in 30% deliverable								0	\$ -	\$ -
	CH-2A	HVAC Section I - incl in 30% deliverable								0	\$ -	\$ -
	CH-3A	HVAC Plan - Electrical Room								0	\$ -	\$ -
	CH-4A	HVAC Plan - Blower Bldg - incl in 30% deliverable								0	\$ -	\$ -
	CH-5A	Overall HVAC Roof Plan								0	\$ -	\$ -
	CH-6A	HVAC Sections II								0	\$ -	\$ -
	CH-7A	HVAC Equipment Schedules								0	\$ -	\$ -
	CH-8A	HVAC Controls I								0	\$ -	\$ -
	ZH-3	HVAC Details III								0	\$ -	\$ -
	CPL-1A	Overall Plumbing Plan - incl in 30% deliverable								0	\$ -	\$ -
	CPL-2A	Plumbing Risers & Schedules								0	\$ -	\$ -
	ZPL-4	Plumbing Details I								0	\$ -	\$ -
	FPL-1A	Fire Protection Plan								0	\$ -	\$ -
	2	Technical Specifications	2		12		12		2	28	\$ 3,638.00	\$ 3,638.00
	3	Review Cost Estimates prepared by CMAR	1		3		1			5	\$ 800.00	\$ 800.00
	4	Internal Project Team Coordination and Meetings (assume 8 @ 1 Hr each)	1		4		4		1	10	\$ 1,311.00	\$ 1,311.00
		Project Task Expenses (2% on Subtotal Hrs Cost)										\$ -
A1.03. DESIGN PHASE*			14	0	139	0	137	0	13	303	\$ 39,179.00	\$ 39,179.00
CONSTRUCTION PHASE**												
	1	General										
	2	Submittal, RFI, CO Review	4		48		48		4	104	\$ 13,372.00	\$ 13,372.00
	3	Meetings/Site Visits	2		4		2		2	10	\$ 1,426.00	\$ 1,426.00
	4	Substantial completion walkthrough and punch list	1		2		1		1	5	\$ 713.00	\$ 713.00
	5	Final completion inspection and final acceptance	1		2		1		1	5	\$ 713.00	\$ 713.00
	6	Review contractor as-built redlines and Prepare Record Drawings			2		2		1	5	\$ 585.00	\$ 585.00
		Project Task Expenses (5% on Subtotal Hrs Cost)										\$ -
CONSTRUCTION PHASE**			8	0	58	0	54	0	9	129	\$ 16,809.00	\$ 16,809.00
TOTAL BASIC SERVICES			40	0	197	0	191	0	26	454	\$ 60,220.00	\$ 60,220.00
TOTAL BASIC SERVICES w/ ADJUSTMENTS			40	0	197	0	191	0	26	454	\$ 60,220.00	\$ 60,220.00

Notes:

* - LOE is basis is for design effort to complete design from 30% submittal (which was contracted under a previous amendment) to 100%

** - Construction phase LOE is based on added scope of a new Membrane Building.

CITY OF PFLUGERVILLE
WATER TREATMENT PLANT EXPANSION
 New Membrane Building Design Completion and Construction Supports



Date: Fri 6/16/23	Task		External Tasks		Inactive Summary		Start-only		Deadline	
	Split		External Milestone		Manual Task		Finish-only			
	Milestone		Inactive Task		Duration-only		External Tasks			
	Summary		Inactive Milestone		Manual Summary Rollup		External Milestone			
	Project Summary		Inactive Milestone		Manual Summary		Progress			