

RESOLUTION NO. 23-191

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA, APPROVING A CHANGE ORDER TO TASK ORDER NO. 9 FROM BLACK & VEATCH CORPORATION IN THE AMOUNT OF \$55,423.00 FOR PROFESSIONAL ENGINEERING SERVICES FOR REPLACEMENT OF ACTIVATED SLUDGE PUMPS, TO INCLUDE RETURN ACTIVATED SLUDGE AND WASTE ACTIVATED SLUDGE PLUMBING AT THE RICHARD A. HEYMAN ENVIRONMENTAL PROTECTION FACILITY IN; AUTHORIZING ANY NECESSARY BUDGET TRANSFERS; AUTHORIZING THE CITY MANAGER TO EXECUTE ANY NECESSARY DOCUMENTS UPON CONSENT OF THE CITY ATTORNEY; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, in Resolution No. 17-207, the City Commission approved a three-year contract with Black & Veatch Corporation for General Engineering Services, which was extended by Resolution 20-142 and Resolution 22-171; and

WHEREAS, Task Order 9 was approved in Resolution 21-078, and City staff recommend a change order to include construction phase engineering services for the project identified as Returned Activated Sludge and Waste Activated Sludge System Upgrades at the Richard A. Heyman Environmental Facility, which was approved for construction contract award by Resolution 23-166, to ensure substantial conformance with the engineered drawings and specifications; and

WHEREAS, Section 2-845(a) of the Code of Ordinances requires City Commission approval for any change order in excess of five percent of the contract price for any public service building or capital improvement project; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA AS FOLLOWS:

Section 1: That the attached Change Order to Task Order No. 9 to Black & Veatch Corporation for construction phase engineering services for replaced of activated sludge pumps and systems at the Richard A. Heyman Environmental Protection Facility, in an amount not to exceed \$55,423.00 is, hereby approved.

Section 2: That adequate funds for this Change Order to Task Order No. 9 are available in account Sewer/Treatment Plant/CIP 401-3504-535-6500, and any necessary budget transfers or adjustments are hereby approved.

Section 3: That the City Manager is authorized to execute any necessary documents, upon the advice and consent of the City Attorney.

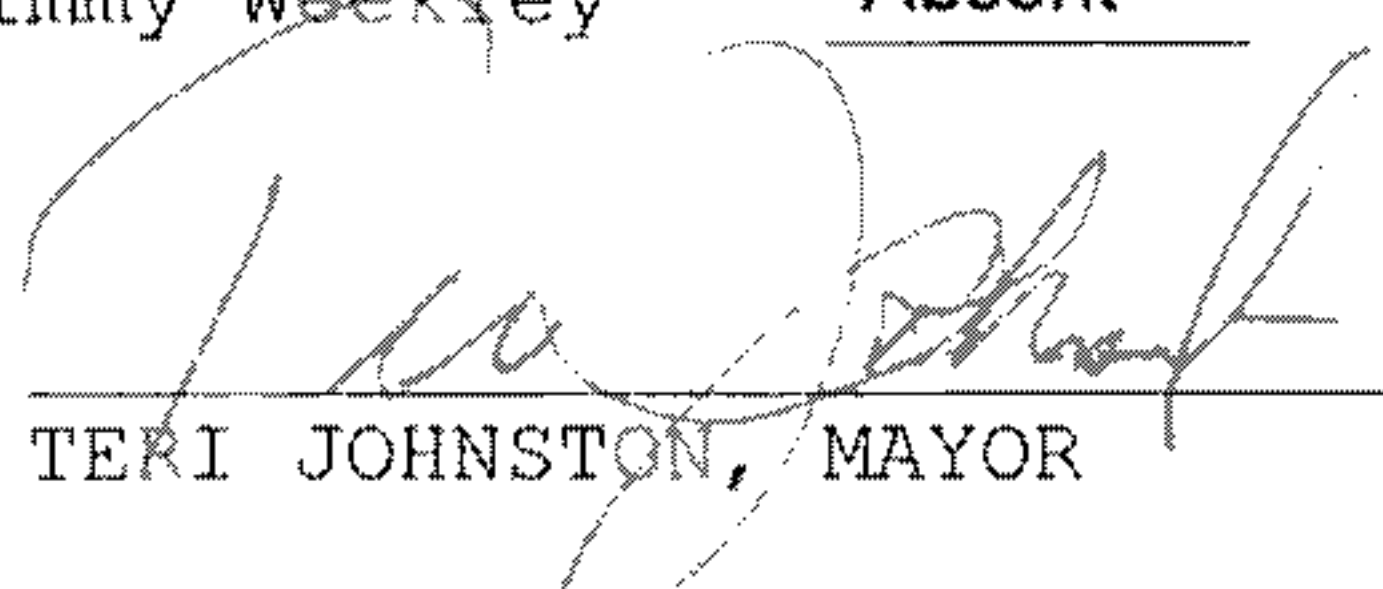
Section 4: That this Resolution shall go into effect immediately upon its passage and adoption and authentication by the signature of the Presiding Officer and the Clerk of the Commission.

Passed and adopted by the City Commission at a meeting held this 13th day of July, 2023.

Authenticated by the Presiding Officer and Clerk of the Commission on 13th day of July, 2023.

Filed with the Clerk on July 13, 2023.

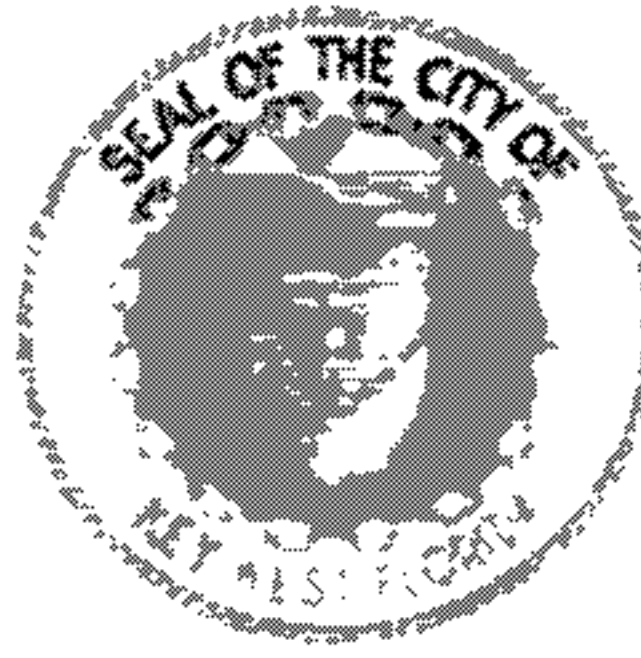
Mayor Teri Johnston	<u>Yes</u>
Vice Mayor Sam Kaufman	<u>Yes</u>
Commissioner Lissette Carey	<u>Yes</u>
Commissioner Mary Lou Hoover	<u>Yes</u>
Commissioner Clayton Lopez	<u>Yes</u>
Commissioner Billy Wardlow	<u>Yes</u>
Commissioner Jimmy Weekley	<u>Absent</u>

  
TERI JOHNSTON, MAYOR

ATTEST:

  
KERI O'BRIEN, CITY CLERK






## MEMORANDUM

Date: July 13, 2023

To: Honorable Mayor and Commissioners

Via: Albert P. Childress  
City Manager 

From: Kelly Crowe, P.E.  
Utilities Director

Subject: **Approve Change Order #2 for Black & Veatch Corporation Task Order #9 for Construction Phase Engineering Services for the RAS & WAS 7 Pump Replacement Project at the Richard A. Heyman Environmental Protection Facility**

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### Introduction

Staff recommends that the Mayor and City Commission approve Change Order #2 for construction phase engineering services for \$55,423.00 for Black & Veatch Corporation (Black & Veatch) Task Order #9 and authorize the City Manager to execute a change order upon consent of the City Attorney and execute any necessary budget transfers or adjustments.

### Background

The Return Activated Sludge (RAS) and Waste Activated Sludge (WAS) pumps at the Richard A. Heyman Environmental Protection Facility (RAHEPF) are used to maintain balance of microorganisms in the treatment process of wastewater. These pumps are over 30 years old, exhibit significant signs of wear and tear and are at the end of their useful life. Localized equipment related to the pumps, including instrumentation and plumbing, show similar signs of age-related deterioration. It is necessary to renew the RAS pumps, WAS pumps, instrumentation, and plumbing to maintain and improve reliability and serviceability of the critical systems at the RAHEPF.

Design was initiated in May of 2021 and finalized in March of 2023. Change order #1 in the amount of \$55,358.00 expanded the task order to include an evaluation of alternative piping materials and expansion of the engineering design to include additional valves and piping in the system. Invitation to Bid (ITB) 23-007 was advertised on April 1, 2023 and Reynolds Construction, LLC was awarded the contract for construction on June 8, 2023.

Construction phase engineering support services from the Engineer of Record (EOR) is critical to ensuring the materials and appurtenances are in conformance with the contract documents. In addition, the services provide a nexus for including the EOR in the overall construction of the project. It is recommended that Black & Veatch, the EOR on this project, provide construction phase engineering support services to include organization and participation of construction progress meetings, preparation of as-built drawings, review of submittals, review of requests for information, change orders, and claims, site inspections for conformance with specifications and plans, and provide inspection reports.

#### **Procurement**

Task Order #9 was issued to Black & Veatch by Resolution 21-078 under the general engineering services contract approved in Resolution 17-207 and extended per Resolutions 20-142 and 22-171. Change Order #2 for \$55,423.00 will bring the total fee of Task Order #9 from \$148,171.00 to \$203,594.00.

The RAS/WAS pump systems replacement project is identified as project number SE35042102 and is budgeted under 401-3504-535-6500. Funds in the amount of \$55,423.00 will need to be transferred from the Account 401-3501-535-9900, Reserves (Other Uses) to fund the Change Order.

#### **Recommendation**

The City Manager's Office recommends that the Mayor and City Commission approve Change Order #2 for construction phase engineering services for Black & Veatch Corporation (Black & Veatch) Task Order #9 and authorize the City Manager to execute a change order upon consent of the City Attorney and execute any necessary budget transfers or adjustments.



**ENGINEERING SERVICES FOR CITY  
OF KEY WEST, FL**

**RICHARD A. HEYMAN  
ENVIRONMENTAL PROTECTION  
FACILITY  
RAS AND WAS PUMPS  
REPLACEMENT – AMENDMENT 2 -  
CONSTRUCTION PHASE SERVICES**

PO # 93981

23 JUNF 2023



**BLACK & VEATCH**  
Building a world of difference.





## **SCOPE OF SERVICES**

### **RAS AND WAS PUMPS REPLACEMENT**

#### **PROJECT OVERVIEW**

CITY OF KEY WEST (CITY) has requested that Black & Veatch (CONSULTANT), under the General Engineering Contract (Contract) (CITY OF KEY WEST-RFQ-002-20), provide Engineering Services During Construction (ESDC) for the project RAS and WAS Pumps Replacement at City of Key West, FL.

This scope of work (SOW) is based on the CONSULTANT providing to the CITY construction phase services for the required as described above and bid as City of Key West, Richard A. Heyman, Environmental Protection Facility, RAS and WAS Pumps Replacement, Project No. SE35042002. This scope corresponds to an amendment of the existing PO # 93981.

#### **Project Description**

CONSULTANT understands that the CONTRACTOR's total construction project duration will be 12 months from Notice to Proceed (NTP) to Substantial Completion and 13 months to Final Completion. The ESDC services to be provided by CONSULTANT will start approximately 30 days before Construction NTP is issued and will end 30 days after Final Completion. During this time, CONSULTANT will review submittals, reply to Requests for Information (RFIs), Change Orders and Allowances, and attend meetings.

Under the SOW for this Task Authorization (TA), CONSULTANT will provide ESDC Services for the RAS and WAS Pumps replacement Project. These ESDC services will include the following:

- Attending project initiation meeting.
- Attending pre-construction meeting.
- Attending monthly project progress meetings with the owner & the contractor.
- Reviewing and responding to Requests for Information (RFIs), qty: 7.
- Reviewing and processing contractor Shop Drawing and Submittals, Qty: 10.
- Reviewing Change Orders and Allowances. Qty: 1.
- Attending Substantial Completion and Final Substantial Completion.
- Preparing and submitting Certificate of Completion

The specific content of the deliverables and the extent of the above services are described in detail in the following sections.

The scope of work includes construction phase services. Overall, the project includes the following project phases and services:

Task 1 – Project Management

Task 2 – Engineering Services during construction.

Task 3 – Additional Engineering Services (Allowance)

#### **SCOPE OF SERVICES**

CONSULTANT will provide the following professional services for project.

### **TASK 1 – PROJECT MANAGEMENT AND COORDINATION**

#### **Task 1.1 Project Management**

CONSULTANT will perform general administrative duties associated with the Project, including project set-up, progress monitoring, team coordination, general correspondence, office administration, and invoicing for project costs incurred by CONSULTANT.

CONSULTANT will maintain accurate project documentation and project cost accounting system throughout the project to include the following:

- Document management. It is assumed that all communication will be maintained via email.
- Prepare monthly invoices for engineering services during construction phase in the format required by the Contract. CONTRACTOR's standard format will be used.

#### **Deliverables (issued via electronic delivery in PDF format)**

- Thirteen (13) Monthly Report and Invoices

#### **Task 1.2 Meetings**

The following meetings will be included:

##### **Task 1.2.1 Project Kickoff Meeting**

CONSULTANT will facilitate one (1) Kickoff Meeting with the CITY, remotely. The purpose of the Kickoff Meeting is to confirm CITY's goals and objectives, identify roles, responsibilities, and communication protocols for project team members and identify critical success factors.

#### **Deliverables (issued via electronic delivery in PDF format)**

- Kickoff meeting agenda will be provided by the CONSULTANT one week prior to scheduled meeting (via electronic delivery)
- Kickoff meeting summary will be provided by the CONSULTANT within five working days following the meeting (via electronic delivery).



## **TASK 2 – ENGINEERING SERVICES DURING CONSTRUCTION**

CONSULTANT will perform engineering services during the construction phase of the project. By performing these services, CONSULTANT shall not have authority or responsibility to supervise, direct, or control the CONTRACTOR's work or the CONTRACTOR's means, methods, techniques, sequences, safety, or procedures of construction. Additionally, CONSULTANT shall not have authority or responsibility for safety precautions and programs incident to the CONTRACTOR's work or for any failure of the CONTRACTOR to comply with laws, regulations, rules, ordinances, codes, or orders applicable to the CONTRACTOR furnishing and performing the work.

It is anticipated that the construction period will be 13 (thirteen) months. Specific services to be performed by CONSULTANT are outlined in the tasks below. The CITY will serve as the lead construction contract manager and will coordinate the activities of the CONSULTANT with the CONTRACTOR that is selected to perform the work detailed in the contract documents.

### **Task 2.1- Construction Administration Support Services**

CONSULTANT will support the CITY in administering the requirements of the contract documents by providing the following construction administrative services:

- A. CONSULTANT will attend and participate remotely in the Pre-construction meeting specified in the contract documents. The CITY will conduct the Pre-construction conference at a date and time selected by the CITY. CONSULTANT will attend the meeting virtually. CONSULTANT will prepare agenda and meeting minutes for the Pre-construction meeting.
- B. CONSULTANT will prepare the Conformed for Construction drawings & Specifications to include them as part of the awarded document package.
- C. CONSULTANT shall review up to ten (10) submittals and one (1) resubmittal. CONSULTANT's review shall be for general conformity to the construction contract documents and shall not relieve the CONTRACTOR of any contractual responsibilities. Such reviews shall not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. A preliminary list of submittals has been incorporated in the LOE.

Manufacturer's O&M manuals received in CONTRACTOR submittals will be passed on to CITY without review.

The shop drawings shall be forwarded to the CITY for their final review and approval. Additionally, CONSULTANT will only review one (1) resubmittal by CONTRACTOR for compliance with approved Plans and Specifications. Further review of shop drawings may be provided as supplemental services to this Task Order.

- D. Requests for Information, Change Orders, and Claims.
  - 1. Requests for Information. CONSULTANT shall interpret construction contract documents when requested by the CITY or the CONTRACTOR. Requests for

clarification or information shall be in writing and copies of CONSULTANT's response shall be distributed to the CITY. CONSULTANT will respond CONTRACTOR's RFIs via email to the CITY. CONSULTANT's proposed fee is based on responding to up to seven (7) RFIs. Any additional RFI will be considered as additional work.

2. CONTRACTOR Change Orders. CONSULTANT shall review one (1) CITY or CONTRACTOR charge orders.
  - a. Review documentation
  - b. Prepare any additional documentation required
  - c. Submit written recommendations to the CITY.
  - d. Assist the CITY in negotiations with CONTRACTOR to obtain a fair price for the work.
  
- E. Drawings Conformed to Construction Records. Upon completion of the project, CONSULTANT shall revise the conformed construction record drawings to certify them as specified in Section 01 78 39 Project Record Documents specification. CONSULTANT will review markup drawings signed and sealed by the CONTRACTOR's Registered Land Surveyor, identifying any changes made during the construction process and indicating all record information required by the regulatory agencies having jurisdiction (AHJ). CONTRACTOR will provide the record drawings.

CONSULTANT will be signing and sealing CONTRACTOR's record drawings.

### **Task 2.2 Field Support Services**

- A. Construction Progress Review Meetings. CONSULTANT will participate in up to thirteen (13) monthly progress construction meetings. CONSULTANT will participate remotely on the progress meetings.
 

They CITY will be preparing meeting agenda and meeting minutes for each of the monthly progress construction meetings.
  
- B. CONSULTANT will perform up to three (3) visits to the construction site to observe progress of the work and consult with the CITY and the CONTRACTOR as required by CITY. Additionally, CONSULTANT will perform the substantial completion and final substantial completion to certified that the work has been done following the conformed construction package.
  
- C. Substantial Inspection and Punch List. Upon request for substantial completion by the CONTRACTOR and coordination by the CITY, CONSULTANT will attend one (1) Substantial Completion inspection to inspect the construction work for compliance with the contract documents (Two engineers will perform the walkthrough inspection). During this meeting,



CONSULTANT will also prepare a punch list of items to be completed or corrected before final completion and acceptance of CONTRACTOR's Work. CONSULTANT will submit results of the inspection to the CITY for review and distribution to the CONTRACTOR.

- D. Final Inspection. Upon request for final completion by the CONTRACTOR and coordination by the CITY, CONSULTANT will (i) confirm that the correction of the items of Work on the punch list is complete, (ii) conduct a final inspection to determine if the Work required in the contract documents is completed, and (iii) issue the Certificate of Final Completion once the Work is complete. CONSULTANT shall provide written recommendations to the CITY concerning final payment, including a list of items, if any, to be completed prior to making such payment.
- E. The total amount of inspections will be five (5).

### **Task 2.3 Deliverables**

The following deliverables will be included in Task 2:

- One (1) Pre-construction meeting agenda and meeting minutes (via electronic delivery)
- Review up to ten (10) submittals. (via electronic delivery)
- Provide up to seven (7) RFIs responses (via electronic delivery)
- Review only one (1) change orders. (via electronic delivery)
- Two (2) hard copies and one (1) copy in electronic format version Adobe pdf. of signed and sealed record drawings. CONTRACTOR will provide the record drawings.
- Three (3) site inspection visits. These visits will be held by maximum two CONSULTANT project engineers.
- One (1) Substantial Inspection punch list review and one (1) Final Inspection punch list review (via electronic delivery).
- One (1) Certificate of Final Completion (via electronic delivery).
- Up to thirteen months (13) monthly construction progress meeting's agenda and meeting minutes (via electronic delivery)
- Two (2) copies of both inspection report (substantial completion and final substantial completion) will be generated and distributed (via electronic delivery).

### **ASSUMPTIONS**

1. There are no known hazardous materials or waste contaminated areas, wetlands, endangered species, or other environmentally sensitive flora or fauna which may require additional engineering efforts during construction.
2. This task excludes third party litigation services or expert witness services, if these are required by any third party.
3. The contract duration is assumed does not exceed thirteen (13) months from construction NTP to final completion, considering coordination with the existing SIRO plant commissioning). All the services have been estimated considering this duration for

budgetary purposes, so services beyond this timeframe will be considered additional work.

4. CITY shall be responsible for construction management activities including daily inspections, review of monthly CONTRACTOR's pay requests, CONTRACTOR's claims and/or other entities/projects/construction work occurring on the site.
5. COVID-19 pandemic-related restrictions may impact activities of CONTRACTOR, and CONSULTANT, which may in turn affect the construction schedule or attendance to field activities.
6. CITY will receive CONTRACTOR's guarantees and bonds that are to be assembled by the CONTRACTOR. CITY will review for completeness in accordance with the construction CONTRACT DOCUMENTS.
7. All RFIs and submittals and RFIs by the CONTRACTOR will first be reviewed by CITY and only those items relative to CONSULTANT's design will be forwarded to the CONSULTANT for review
8. Monthly progress payments submitted by the CONTRACTOR will be reviewed for approval by CITY. CONSULTANT will not be responsible for this activity.
9. Any additional structural or process mechanical design coming from different conditions assumed during the design phase will be considered as additional services.
10. Project Schedule: CITY will utilize the CONTRACTOR's Construction Schedule. CONSULTANT will not be developing or updating any construction schedule.
11. CONTRACTOR will be responsible for power delivery to the project site.
12. CITY's Operations Department is the only entity authorized to manipulate (open/close) valves, energize or deenergize equipment, shutdown, etc.

## **EXCEPTIONS**

1. CONSULTANT will not review manufacturers' O&M manuals. These CONTRACTOR submittals will be passed to CITY without review.
2. CONSULTANT will not be responsible for preparation of O&M manuals or providing plant staff with training of any type, as part of this scope of work.
3. CONSULTANT will not develop, update, or make changes to the conformed record drawings provided by the CONTRACTOR. It is assumed the CONTRACTOR will prepare AS BUILTS
4. CONSULTANT will not develop or update any part of the 3D BIM model with construction record information.
5. CONSULTANT will not be responsible for preparation or development of any cost estimates (OPCCs).



6. CONSULTANT will not participate of any efforts to secure any permits, including construction permits.
7. CONSULTANT will not be responsible for addressing non-technical RFIs and submittals related to the construction contract, administration, schedule, and other items where CONSULTANT's input is not considered required, and the intent of the design is maintained.
8. By performing these services, CONSULTANT shall not have authority or responsibility to supervise, direct, or control the CONTRACTOR's work or the CONTRACTOR's means, methods, techniques, sequences, or procedures of construction. Additionally, CONSULTANT shall not have authority or responsibility for safety precautions and programs incident to the CONTRACTOR's work or for any failure of the CONTRACTOR to comply with laws, regulations, rules, ordinances, codes, or orders applicable to the CONTRACTOR furnishing and performing the work.
9. The term "Additional Work" indicates work not included in this scope of work.
10. CONSULTANT will not provide a resident engineering team that will have continuous presence on site.
11. Unanticipated coordination of work with other Design/Construction Packages that requires participation of ENGINEER will be considered Additional Work.
12. CONSULTANT will not perform any field testing, material testing, nor any studies on materials or equipment. Additionally, CONSULTANT will not be responsible for payment of any testing or laboratory analysis.

## **PROPOSED IMPLEMENTATION SCHEDULE**

The proposed implementation schedule is outlined below and is based on duration after receiving Notice to Proceed (NTP).

The cumulative months following NTP (Noticed to Proceed) are estimates based on assumptions regarding the timing of CITY OF KEY WEST activities such as bid advertisement and award.

It is estimated that the project will have the following durations:

Task Description	Task Completion
Task 1 – Project Management and Coordination	From NTP until 12 or 13 months (Assumed final substantial completion will occur within this timeframe)
Task 2 – Construction Phase Services	13 months after NTP
Substantial completion	13 months after NTP
Total Project Duration:	13 months



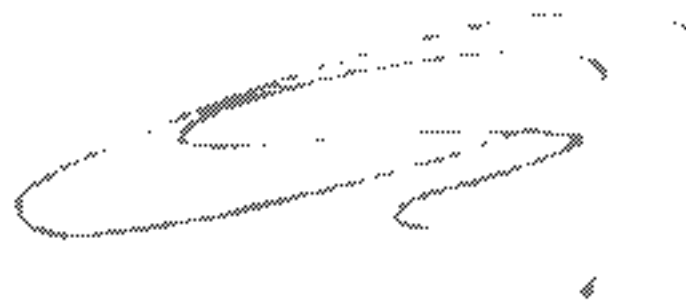
## PROPOSED FEE

Compensation for this project will be on a Lump Sum basis. The fee includes \$46,869 for services defined in the SOW and \$8,554 for reimbursable expenses.

Phase	Description	Method of Payment	Amount
1.1	Project Management	Lump Sum	\$12,390
1.2	Project Kick Off Meeting	Lump Sum	\$1,004
2.1	Construction Administration Support Services	Lump Sum	\$20,139
2.2	Field Support Services	Lump Sum	\$13,336
<b>Subtotal:</b>			<b>\$46,869</b>
	Reimbursable Expenses	Lump Sum	\$8,554
<b>Subtotal:</b>			<b>\$8,554</b>
<b>Project Total:</b>			<b>\$55,423</b>

Very truly yours,

BLACK & VEATCH CORPORATION



Pablo Gala-Serra  
Project Manager

## ATTACHEMENT A – LEVEL OF EFFORT



June 23, 2023

PO No. 93981 - RAS AND WAS PUMPS - AMENDMENT 2 - CONSTRUCTION PHASE SERVICES  
 Richard A. Heyman Environmental Protection Facility  
 RAS WAS PUMP REPLACEMENT

Arturo B. Pablo Odoardo L. Botero J. Gloss A. Travaglia David G. Kevin Chenault Kyle Phipps Faulk, Zane Angie K. Vivian Majok Jaclyn Hines

Work Breakdown Structure	Project Director	Senior Project Manager	Engineering Manager	Sr. Technical Specialist - WW Process	Sr Engineer - Structural	Sr. Engineer - Proc Mechanical	Project Engineer - Electrical	Sr. Engineering Technician - Electrical	Sr. Engineer - I&C	Engineering Technician - I&C	Staff Engineer II - Civil	Project Accountant	Administrative Assistant	Total Hours	Labor Cost
Task Series 100 - Design Services	2	9	22	0	2	8	3	2	4	0	0	13	13	78	\$13,394
Percent of Total - Task 100 - PROJECT MANAGEMENT AND COORDINATION	3%	12%	28%	0%	3%	10%	4%	3%	5%	0%	0%	17%	17%	27%	
1.1 Project Management	2	8	20		2	6	3	2	4			13	13	73	\$12,390
1.2 Project Kick Off Meeting		1	2			2								5	\$1,004
Task Series 2 Construction Phase Services	0	5	10	2	14	38	36	14	13	38	40	0	0	210	\$33,475
Percent of Total - Task 200 - ENGINEERING SERVICES DURING CONSTRUCTION	0%	6%	13%	3%	18%	49%	46%	18%	17%	49%	51%	0%	0%	73%	
2.1 Construction Administration Support Services		3	8	2	14	22	12	6	13	28	16			124	\$20,139
2.2 Field Support Services		2	2			16	24	8	0	10	24			86	\$13,336
	1%	5%	11%	3%	6%	16%	14%	8%	6%	13%	14%	5%	5%	100%	
Total Hours Estimated	2	14	32	2	16	46	39	16	17	38	40	13	13	288	
Total Salary (Labor BB&V)	\$590	\$3,360	\$6,304	\$550	\$2,960	\$8,510	\$6,435	\$2,400	\$3,145	\$4,370	\$5,320	\$1,755	\$1,170		\$46,869
Direct Costs															\$8,554
Mileage		\$435	\$435				\$1,022				\$1,022				\$2,914
Communications and Shipping													\$300		\$300
Printing and Reproduction Services													\$300		\$300
Travel Costs		\$30	\$30				\$2,490				\$2,490				\$5,040
TOTAL FEE															\$55,423

NEGOTIATED RATES USED TO DEVELOP THIS FEE

\$295.00 \$240.00 \$197.00 \$275.00 \$185.00 \$185.00 \$165.00 \$150.00 \$185.00 \$115.00 \$133.00 \$135.00 \$90.00

**TASK ORDER No 9 - DESIGN SERVICES  
RICHARD A. HEYMAN ENVIRONMENTAL PROTECTION FACILITY  
RAS AND WAS PUMPS REPLACEMENT  
CITY OF KEY WEST**

**BACKGROUND**

The City of Key West (CITY) has decided to replace the existing return activated sludge (RAS) and waste activated sludge (WAS) pumps at the Richard A. Heyman Environmental Protection Facility (RAHEPF). There are currently four, 25-hp RAS pumps and two 2-hp WAS pumps. The CITY desires to renew the equipment at the facility due to the age of the pumps (nearly 30-years in operations).

**INTRODUCTION**

Black & Veatch (CONSULTANT) has been requested by the CITY to provide detailed design services to implement the RAS/WAS pumps replacement project. The scope of services includes the following components:

- Replace four (4) RAS pumps, motors and variable frequency drives (VFDs) including above grade piping, pipe supports, valves, and other appurtenances. CONSULTANT will review existing Operations and Maintenance (O&M) manuals to confirm pump sizing. The limits of pipe replacement will be limited to suction and discharge piping connecting to the common header. Work includes the demolition of pumps / motors, immediate piping, valves, appurtenances, controls and VFDs.
- Replace two (2) WAS pumps with constant speed motors including above grade piping, pipe supports, valves, and other appurtenances. CONSULTANT will review existing O&M manuals to confirm pump sizing. The limits of pipe replacement will be limited to suction and discharge piping connecting to the common header. Work includes the demolition of pumps / motors, immediate piping, valves, appurtenances and controls. The existing WAS pumps do not have VFDs. They will continue to be constant speed driven.
- Equipment pads at the existing RAS/WAS pump station will be replaced/repared as needed. Patching/repair of the existing housekeeping pad is also assumed.
- Electrical and controls for the RAS/ WAS pumping station will be connected to the existing equipment. Electric power will be supplied from the existing MCC in the existing electrical room. The new RAS VFDs and PLC will be located inside the existing electrical room. New cabling will be provided from the pumps to the drives.

During the detailed design phase, CONSULTANT will develop construction documents for bidding that includes the demolition and replacement of the items listed above.



## **SCOPE OF SERVICES**

### **TASK SERIES 100 – DESIGN SERVICES**

#### **Task 101 – Project Coordination**

Project coordination will encompass efforts required for project set-up, resource management, scheduling, invoicing, trend management, and other requirements needed to effectively and efficiently complete the tasks described in this scope of services. Also, this task includes administration and management of project:

- Prepare project management documents including budget, drafting standards, and quality assurance and quality control.
- Monitor schedule and budget.
- Review progress with CITY on a regular basis.
- Discuss issues with the CITY as they are noted.

#### **Task 102 – Project Kickoff**

CONSULTANT will conduct a project initiation meeting (virtual) to discuss project requirements, project schedule and review pertinent available data. CONSULTANT will prepare meeting minutes and will issue to the meeting attendees.

#### ***Task Series 102 Deliverables***

The following deliverables are included in Task Series 102:

- Project kickoff agenda and meeting minutes (via electronic delivery).

#### **Task 103 – Site Visit**

CONSULTANT will participate in a site visit with OMI and the CITY staff to tour the project location to verify existing conditions, verify existing instrumentation and control requirements, electrical installation, and define the limits of the demolition/replacement. Due to the age of the record documents, it is anticipated that pictures will be utilized in the drawings to define better the scope of the work to the potential bidders. It is anticipated two engineers will participate in the site visit.

#### ***Task Series 103 Deliverables***

The following deliverables are included in Task Series 103:

- Site visit report (via electronic delivery).

#### **Task 104 – 60% Detailed Design**

A. CONSULTANT will develop the design to 60% level. The following components will be included in the 60% submittal:



- (1) Evaluation of existing VDFs
- (2) Verification of hydraulics of RAS pumps and WAS pumps
- (3) Drawings
  - a. Civil Site plan
  - b. Demolition plans
  - c. Mechanical plans, sections & details
  - d. Electrical and Instrumentation Diagrams
- (4) Specifications, including front and back end documents
- (5) Internal quality control review and refinement before delivery to the CITY
- (6) Quality assurance and quality control plan and log
- (7) Equipment cost table
- (8) Project schedule update
- (9) Project trend register update (if applicable)

B. CONSULTANT will provide two (2) hard copy sets and one (1) electronic set of the 60% Design Documents drawings and specifications to the CITY for review.

C. CONSULTANT will conduct a project review workshop with the CITY to review the 60% detailed design drawings and specifications. Based on discussions during the workshop, CONSULTANT will refine the drawings and specifications, and incorporate the applicable comments into the next submittal.

#### ***Task Series 104 Deliverables***

The following deliverables are included in Task Series 104:

- Drawings and Specifications.
- Workshop meeting minutes.

#### **Task 105 - 100% Detailed Design – Issued for Construction Set**

The 100% Final Set design shall commence only after the CITY has accepted the 60% Design deliverables. Design progress activities are as follows:

- (1) Final review set of CAD drawings
- (2) Final review set of specifications and construction contract documents

- (3) Equipment cost table – Update
  - (4) Internal quality control review and refinement before delivery to the CITY
  - (5) Quality assurance and quality control plan and log update.
  - (6) Project schedule update
  - (7) Project trend register update.
- A. CONSULTANT will provide two (2) hard copy sets and one (1) electronic copy of the 100% Final Set documents to the CITY for review.
  - B. CONSULTANT will conduct a project review workshop with the CITY to review the 100% Design Set documents. Based on discussions during the workshop, CONSULTANT will refine the documents, if necessary.
  - C. CONSULTANT will revise the documents to prepare the Design Documents for Construction as necessary to reflect any decisions taken at this level. CONSULTANT will provide the CITY with three (3) signed/sealed hard copy sets and one (1) electronic copy of the Issued for Construction Set Documents.

#### **ASSUMPTIONS**

- 1. Electrical upgrades related to increased electrical loads that would modify the existing service are not included.
- 2. The control system block diagram will not be updated. The existing PIDs with annotations will be used for the replacement of the existing instrumentation.
- 3. Drawings will include notes for the Contractor to field-verify existing conditions and coordinate the instrumentation and control design with other drawings showing new equipment.
- 4. No Bid and Pre-Award Services are included under this scope of work. These services may be provided as additional services if desired by the City.
- 5. Construction inspection services are not included under this scope of work. Inspections services can be provided as additional services if desired by the CITY.

#### **BUDGET**

Tasks 100 as described in this scope of work document would have the following lump sum fees:

Task	Amount
Task 101 – Project Coordination	\$9,152
Task 102 – Project Kickoff	\$2,252

Task 103 – Site Visit	\$3,192
Task 104 – 60% Detailed Design	\$42,639
Task 105 – 100% Detailed Design	\$33,628
Direct Costs	\$1,950
<b>LUMP SUM TOTAL</b>	<b>\$92,813</b>

**CITY OF KEY WEST**

By: 

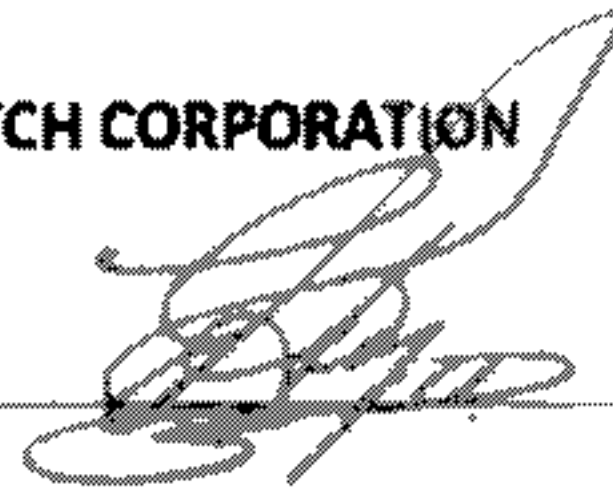
By: Patti McLaughlin

(Print Name)

Title: Irish City Manager

Date: 5/5/2021

**BLACK & VEATCH CORPORATION**

By: 

By: Rafael E. Frias III, P.E.

(Print Name)

Title: Associate Vice President

Date: 5/12/2021



**TASK ORDER No 9 - DESIGN SERVICES  
RICHARD A. HEYMAN ENVIRONMENTAL PROTECTION FACILITY  
RAS AND WAS PUMPS REPLACEMENT  
CITY OF KEY WEST**

**BACKGROUND**

The City of Key West (CITY) has decided to replace the existing return activated sludge (RAS) and waste activated sludge (WAS) pumps at the Richard A. Heyman Environmental Protection Facility (RAHEPF). There are currently four, 25-hp RAS pumps and two 2-hp WAS pumps. The CITY desires to renew the equipment at the facility due to the age of the pumps (nearly 30-years in operations).

**INTRODUCTION**

Black & Veatch (CONSULTANT) has been requested by the CITY to provide detailed design services to implement the RAS/WAS pumps replacement project. The scope of services includes the following components:

- Replace four (4) RAS pumps, motors and variable frequency drives (VFDs) including above grade piping, pipe supports, valves, and other appurtenances. CONSULTANT will review existing Operations and Maintenance (O&M) manuals to confirm pump sizing. The limits of pipe replacement will be limited to suction and discharge piping connecting to the common header. Work includes the demolition of pumps / motors, immediate piping, valves, appurtenances, controls and VFDs.
- Replace two (2) WAS pumps with constant speed motors including above grade piping, pipe supports, valves, and other appurtenances. CONSULTANT will review existing O&M manuals to confirm pump sizing. The limits of pipe replacement will be limited to suction and discharge piping connecting to the common header. Work includes the demolition of pumps / motors, immediate piping, valves, appurtenances and controls. The existing WAS pumps do not have VFDs. They will continue to be constant speed driven.
- Equipment pads at the existing RAS/WAS pump station will be replaced/repared as needed. Patching/repair of the existing housekeeping pad is also assumed.
- Electrical and controls for the RAS/ WAS pumping station will be connected to the existing equipment. Electric power will be supplied from the existing MCC in the existing electrical room. The new RAS VFDs and PLC will be located inside the existing electrical room. New cabling will be provided from the pumps to the drives.

During the detailed design phase, CONSULTANT will develop construction documents for bidding that includes the demolition and replacement of the items listed above.

## **SCOPE OF SERVICES**

### **TASK SERIES 100 – DESIGN SERVICES**

#### **Task 101 – Project Coordination**

Project coordination will encompass efforts required for project set-up, resource management, scheduling, invoicing, trend management, and other requirements needed to effectively and efficiently complete the tasks described in this scope of services. Also, this task includes administration and management of project:

- Prepare project management documents including budget, drafting standards, and quality assurance and quality control.
- Monitor schedule and budget.
- Review progress with CITY on a regular basis.
- Discuss issues with the CITY as they are noted.

#### **Task 102 – Project Kickoff**

CONSULTANT will conduct a project initiation meeting (virtual) to discuss project requirements, project schedule and review pertinent available data. CONSULTANT will prepare meeting minutes and will issue to the meeting attendees.

#### **Task Series 102 Deliverables**

The following deliverables are included in Task Series 102:

- Project kickoff agenda and meeting minutes (via electronic delivery).

#### **Task 103 – Site Visit**

CONSULTANT will participate in a site visit with OMI and the CITY staff to tour the project location to verify existing conditions, verify existing instrumentation and control requirements, electrical installation, and define the limits of the demolition/replacement. Due to the age of the record documents, it is anticipated that pictures will be utilized in the drawings to define better the scope of the work to the potential bidders. It is anticipated two engineers will participate in the site visit.

#### **Task Series 103 Deliverables**

The following deliverables are included in Task Series 103:

- Site visit report (via electronic delivery).

#### **Task 104 – 60% Detailed Design**

A. CONSULTANT will develop the design to 60% level. The following components will be included in the 60% submittal:

- (1) Evaluation of existing VDFs
  - (2) Verification of hydraulics of RAS pumps and WAS pumps
  - (3) Drawings
    - a. Civil Site plan
    - b. Demolition plans
    - c. Mechanical plans, sections & details
    - d. Electrical and Instrumentation Diagrams
  - (4) Specifications, including front and back end documents
  - (5) Internal quality control review and refinement before delivery to the CITY
  - (6) Quality assurance and quality control plan and log
  - (7) Equipment cost table
  - (8) Project schedule update
  - (9) Project trend register update (if applicable)
- B. CONSULTANT will provide two (2) hard copy sets and one (1) electronic set of the 60% Design Documents drawings and specifications to the CITY for review.
- C. CONSULTANT will conduct a project review workshop with the CITY to review the 60% detailed design drawings and specifications. Based on discussions during the workshop, CONSULTANT will refine the drawings and specifications, and incorporate the applicable comments into the next submittal.

***Task Series 104 Deliverables***

The following deliverables are included in Task Series 104:

- Drawings and Specifications.
- Workshop meeting minutes.

**Task 105 - 100% Detailed Design – Issued for Construction Set**

The 100% Final Set design shall commence only after the CITY has accepted the 60% Design deliverables. Design progress activities are as follows:

- (1) Final review set of CAD drawings
- (2) Final review set of specifications and construction contract documents



- (3) Equipment cost table – Update
  - (4) Internal quality control review and refinement before delivery to the CITY
  - (5) Quality assurance and quality control plan and log update.
  - (6) Project schedule update
  - (7) Project trend register update.
- A. CONSULTANT will provide two (2) hard copy sets and one (1) electronic copy of the 100% Final Set documents to the CITY for review.
  - B. CONSULTANT will conduct a project review workshop with the CITY to review the 100% Design Set documents. Based on discussions during the workshop, CONSULTANT will refine the documents, if necessary.
  - C. CONSULTANT will revise the documents to prepare the Design Documents for Construction as necessary to reflect any decisions taken at this level. CONSULTANT will provide the CITY with three (3) signed/sealed hard copy sets and one (1) electronic copy of the Issued for Construction Set Documents.

## **ASSUMPTIONS**

- 1. Electrical upgrades related to increased electrical loads that would modify the existing service are not included.
- 2. The control system block diagram will not be updated. The existing PIDs with annotations will be used for the replacement of the existing instrumentation.
- 3. Drawings will include notes for the Contractor to field-verify existing conditions and coordinate the instrumentation and control design with other drawings showing new equipment.
- 4. No Bid and Pre-Award Services are included under this scope of work. These services may be provided as additional services if desired by the City.
- 5. Construction inspection services are not included under this scope of work. Inspections services can be provided as additional services if desired by the CITY.

## **BUDGET**

Tasks 100 as described in this scope of work document would have the following lump sum fees:

Task	Fee
Task 101 – Project Coordination	\$9,152
Task 102 – Project Kickoff	\$2,252

Task 103 – Site Visit	\$3,192
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Direct Costs	\$1,950
<b>LUMP SUM TOTAL</b>	<b>\$92,813</b>

**CITY OF KEY WEST**

By: 

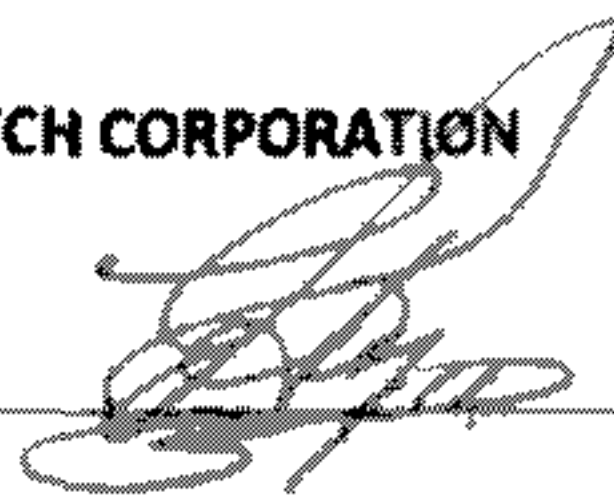
By: P.H. McLaughlin

(Print Name)

Title: Inkin City Manager

Date: 5/5/2021

**BLACK & VEATCH CORPORATION**

By: 

By: Rafael E. Frias III, P.E.

(Print Name)

Title: Associate Vice President

Date: 5/12/2021