

081-20 Appendix A - Technical Specifications
Engineering Services for the 5104 118th St - Class III/IV PS and 6217 Wilson Blvd. - Class III/IV PS
Rehabilitation Projects

DESCRIPTION OF SCOPE OF SERVICES

GENERAL

Provide engineering, bid and post design professional services for the complete rehabilitation of each pump station.

SCOPE OF WORK

TASK 1 – Project Management

1. Prepare work plan with time line (work schedule).
2. Prepare monthly invoices and submit project progress updates.
3. Attend progress project meetings and final review meeting including agenda and meeting minutes with action items.
 - 3.1. Conduct Workshop No. 1 (TASK 2) to review JEA's prepared concept documents
 - 3.2. Conduct Workshop No. 2 (TASK 3) to review 90% design documents.
 - 3.3. Conduct Workshop No. 2 (TASK 5) to review customized pump station-specific operations manual

TASK 2 – REVIEW CONCEPT DOCUMENTS

1. Review concept documents.
2. Prepare and submit Project Design Report (PDR).
3. Create a draft bid form defining what items should be bid as unit price items, and create a measurement and payment description for those items.
4. Evaluate and sketch temporary construction easements if required for OWNER acquisition.
5. Conduct PDR submittal review meeting. OWNER is to provide written comments and drawing markups to the Engineer.

TASK 3 – 90% DESIGN DOCUMENTS

1. Prepare and submit 90% Submittal of the Contract Bid Documents
2. Update OWNER's Division 0 (front-end) specifications as required to accommodate the Contract Bid Documents.
3. Draft and submit the Bid Form and Measurement and Payment as part of Division 1.
4. Prepare and submit AACE Class 1 estimate. Provide a construction timeline.
5. Prepare cost variance from the original overall project budget (OPB).
6. Create and submit Equipment Attribute Table (EAM).
7. Conduct 90% submittal review meeting. OWNER is to provide written comments and drawing markups to the Engineer.
8. Prepare and submit meeting minutes. Minutes shall include review comments and responses.

TASK 4 – 100% DESIGN DOCUMENTS AND BID DOCUMENTS

1. Incorporate OWNER's 90% submittal comments. Prepare and submit 100 Percent Final Design Document the following:
 - 1.1. Update and submit the PDR
 - 1.2. Final updated contract documents
 - 1.3. Final opinion of probable construction cost, AACE Class 1
 - 1.4. Final Cost Variance tables in OWNER's template and format
 - 1.5. Final bid form
 - 1.6. Final SUE investigation report and survey
 - 1.7. Final design calculations
 - 1.8. Final permits as available
2. Prepare Issued for Construction Documents in electronic form for OWNER records. Incorporate supplemental permitting comments received from the permitting agencies.

TASK 5 – PERMITTING (LIMITED AMOUNT NOT-TO EXCEED)

1. Submit permit determination request using the 90% set draft (TASK 3.1). Conduct permits determination with the following agencies:
 - 1.1. City of Jacksonville (COJ) 10-Set Review Process (Building/Zoning)
 - 1.2. COJ Building Permit
 - 1.3. COJ right of way permits and Maintenance of Traffic (MOT)
 - 1.4. FDOT utility permit
 - 1.5. Florida Department of Environmental Protection
2. Design must list the necessary steps or requirements to assure the General Contractor can secure the following permits:
 - 2.1. FDEP Fuel Storage Tank License Modification (COJ Environmental Quality Division)
 - 2.2. FDEP/SJRWMD Dewatering Permit
 - 2.3. EPA NPDES General Permit for Construction Activities
3. Prepare permit application packages.
 - 3.1. City of Jacksonville (COJ) 10-Set Review Process
 - 3.2. FDOT utility permit
 - 3.3. FDEP Facility Construction Permit
 - 3.4. FDEP Pipeline Permit
 - 3.5. JEA Pipeline Permit
4. Respond for Additional Information (RAI): Firm is responsible for securing permits and responding to the agencies' RAIs.

TASK 6 – BID PHASE SERVICES

1. Attend the pre-bid conference.
2. Draft and submit meeting minutes for review.
3. Submit final meeting minutes.
4. Prepare and submit addenda.
5. Revise contract bid documents per addenda.
6. Prepare Conformed Construction Documents.

TASK 7 – POST DESIGN SERVICES (LIMITED AMOUNT NOT-TO EXCEED)

1. Services will define after the construction bid is awarded.

TASK 8 – PUMP STATION FACILITY OPERATIONS MANUAL

2. Create and submit separate draft for each pump station a customized pump station-specific operations manual for the constructed facility.
 - 2.1. Conform Manual to the volume and chapter divisions and unit process formats described in the sample Table of Contents in Attachment A.
 - 2.2. Present in the manual design criteria and operational philosophy, process descriptions, process flow diagrams, P&IDs, descriptions of operator interface controls, control strategies, process control guidance, and process troubleshooting table(s).
3. Submit draft Manual prior to the project Substantial Completion milestone for JEA review and comment. The draft manual will comprise the following information:
 - 3.1. Supplemental Figures – develop selected renderings comprising the information from engineering drawings and other modified data to provide a more complete picture of a particular technical component of the project.
 - 3.2. Provide means for the operators to quickly locate and identify details without having to review non-essential textual information. Figures shall be either letter (8.5 inches by 11 inches) oriented in landscape or portrait layout or tabloid landscape (11 inches high by 17 inches wide). Manual may require up to 20 figures.
 - 3.3. Informational Photographs – Include up to 100 color photographs in the operations manual for clarifying the operations needs for the pump station and bar screens. Photographs and text in the manual will use letter size paper (8.5 inches by 11 inches).
4. Field Verifications of Draft Operations Manual – The draft Manual will be revised to include applicable JEA comments.
 - 4.1. Field verify as built conditions prior to finalizing the draft Manual. The field verified draft Manual will include photographs and figures of the completed work.
 - 4.2. Submit field verified draft Manual to JEA within approximately 60 calendar days after project Substantial Completion, depending on contractor progress.
 - 4.3. Incorporate JEA comments from the field verified draft Manual. Draft and Submit final Manual to JEA.
5. Conduct a full day operations manual workshop on site with JEA staff to review the final Manual.
 - 5.1. Record, include and address comments from the workshop.

5.2. Issue final Manual within 30 calendar days of the workshop.

Task 7 – DELIVERABLES

1. PDR in PDF format
2. Drawings: Three (3) half size (11" x 17") hard copies to scale and in PDF format for 90% and 100%
3. Specifications: Three (3) hard copies and in PDF and WORD format for 90% and 100%
4. Construction Documents: Drawings, three (3) half size (11" x 17") and two (2) full size (22" x 34") hard copies signed and sealed and in PDF format. Technical specifications, three (3) signed and sealed hard copies and in PDF format
5. Opinion of Probable Construction Cost (PDF and EXCEL Format) for 90% and 100% submittal per pump station
6. Construction Record Drawings: One (1) signed and sealed full size (22" x 34") and two (2) half size (11" x 17") hard copies and in PDF and ACAD *.dwg format. Provide record drawings set per pump station.
7. Draft, Field Verification Draft, and Final Operation Manual: Three (3) printed color copies, one electronic Microsoft Word version, and one PDF version. Provide a separate manual per pump station.

ATTACHMENT A - PUMP STATION OPERATIONS MANUAL TABLE OF CONTENTS

Table of Content

- 1.0 Introduction
 - 1.1 Flow Pattern
 - 1.2 Design Data and P&ID
 - 1.3 Permits and Standards
 - 1.3.1 Facility Permits
 - 1.3.2 Required Reports to Regulatory Agencies
 - 1.3.3 Spill Reporting [SSO]
- 2.0 Safety and Security Systems
- 3.0 Pumps and Control Narrative
 - 3.1 Primary Pumps
 - 3.2 Diesel Standby Pump System
 - 3.3 Control Narrative
- 4.0 Power Distribution
 - 4.1 Electric Supply (Utility, Switchgear, VFDs, and MCC's)
 - 4.2 Emergency Power (Generator, ATS, and Fuel System)
- 5.0 Instrumentation and Control System
 - 5.1 Field Instruments
 - 5.2 Control System
 - 5.3 HMI Graphics (HMI)
 - 5.4 SCADA, Remote Control, and Network
- 6.0 HVAC and Odor Control System
- 7.0 Ancillary Systems
 - 7.1 Automatic Screens
 - 7.2 Wetwell Mixer or Aeration System
 - 7.3 Valves and Meters
 - 7.4 Hoist and Crane

Appendices

- A Wastewater Collection and Distribution Facility Permit
- B Environmental Resource Permit
- C Calculations

D Glossary

E Applicable rules, regulations, standards and ordinances

Process Chapter Breakdown:

1. Overview [Overall objectives and relationship to adjacent units]
2. Process Control [Detailed description of the intended operation and control]
3. Design Data
4. Equipment Controls [Instrumentation loop descriptions]
5. Operation Consideration and Checklists (does not include Standard Operating Procedures)
6. Normal Operations
7. Alternate Operations [Flexibility of pumping unit]
8. Shutdown Considerations
9. Restart Considerations
10. Maintenance
11. Equipment Data
12. Equipment Maintenance References
13. Process Maintenance
14. Safety References [Bulleted references to Safety chapter]