

WORK ORDER NUMBER 13

Roseland Elevated Tank Conversion

This Work Order Number 13 is entered into as of this 11 day of April, 2017, pursuant to that certain Continuing Contract Agreement for Professional Services, dated November 15, 2011, and that certain Extension and Amendment of Continuing Contract Agreement for Professional Services entered into as of this 4th day of November, 2014 (collectively referred to as the "Agreement"), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and Kimley-Horn and Associates, Inc. ("Consultant").

The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit A (Scope of Work), attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit B (Fee Schedule), attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit A (Time Schedule), attached to this Work Order and made a part hereof by this reference all in accordance with the terms and provisions set forth in the Agreement. Pursuant to paragraph 1.4 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Work Order as of the date first written above.

CONSULTANT:
Kimley-Horn and Associates, Inc.

**BOARD OF COUNTY COMMISSIONERS
OF INDIAN RIVER COUNTY**

By: _____
Title: Brian Good, P.E.
Sr. Vice President

By: _____
Joseph E. Flescher, Chairman

BCC Approved Date: _____

Attest: Jeffrey R. Smith, Clerk of Court and Comptroller

By: _____
Deputy Clerk

Approved: _____
Jason E. Brown, County Administrator

Approved as to form and legal sufficiency: _____
Dylan T. Reingold, County Attorney

EXHIBIT #A

Work Order Number 13

**Roseland Elevated Tank Conversion
to
Repump Station**

PROJECT UNDERSTANDING

Indian River County Utilities (IRCU) owns and operates the Roseland 750,000 gallon elevated storage tank, which is a steel hydro-pillar type that has a common inlet/outlet pipe that allows distribution water to fill and drain the tank, depending on system demands. Currently, an altitude valve controls the filling of the tank, but does not have the ability to drain and charge the surrounding water distribution system, since the tank operating level is much lower than normal system pressures.

Several evaluations were conducted, one by Neel- Shaffer in 2007, and the latest recently by Kimley-Horn and Associates, Inc. in 2015, to determine the most cost effective method of correcting the elevation shortfall and optimize use of the elevated tank. The options which were considered were raising the tank, constructing a taller one adjacent to the existing one, or converting the existing tank to an elevated storage and repump facility. The last option of converting the tank to a storage and repump station that provides remote storage and repumping to the North Roseland service area is recommended. This allows the utilities the ability to maintain and optimize use of an existing asset and address future fire flow requirements for this area. The water distribution system hydraulic model, updated in July 2014, identified this area as an area having low pressures during peak demands and having difficulty meeting fire flow demands.

Modification of the elevated storage tank to include repumping facilities will require modifications to the inlet and outlet piping configuration, requiring a new separate fill line to the storage tank. It is assumed that a new 12/16-inch water line, approximately 500 ft long will be required base on the current distribution piping model and GIS information.

Based on the following assumptions and the scope of the project described herein, an opinion of probable construction costs are estimated to be \$950,000.

The following is a list of assumptions that the Consultant has made in the preparation of the Task Order.

1. A new separate waterline to act as a fill or outlet pipe will be needed to separate the pressure zones for a repump and storage facility. The length is assumed to be approximately 500 ft, and be a 12-inch or 16-inch waterline.

2. At least two (2), with one spare, booster pumps will be needed sized for fire flow as a minimum to boost pressures appropriately
3. Power and control panels are assumed to be housed within the pillar housing of the elevated storage tank, and no new electrical building will be included. Variable frequency drives (VFD's) will be designed for the booster pumps.
4. Remote telemetry at the North County RO water plant will be upgraded to include monitoring and control of the new pump station.
5. The altitude valve will be replaced with an electric actuated control valve that can maintain consistent and constant inlet pressure to the tank inlet pipe.
6. An outdoor rated generator and fuel storage tank with automatic transfer switch (NEMA 4X rated) will be included. It is assumed that a Tier 4 generator rating will not be required.
7. The Consultant will provide an operating logic for the control system. The contractor selected by IRCU will be responsible for any programming required to implement these SCADA changes. Programming is not included in Consultants' scope.
8. The project will be prepared as one bid document
9. Minor site plan and administrative approval required only

The following scope of services consists of survey, preparation of drawings and specifications, mechanical, civil, process, and electrical design, Florida Department of Environmental Protection (FDEP) permitting, bidding phase services, and construction phase services. SCADA system programming is not included but described below.

SCOPE OF SERVICES

Task 1 – Topographic Survey – Site and Watermain

Consultant will prepare limited topographic survey of the footprint of the tank site and 500-ft of watermain from Roseland Rd. All work will be constructed on Indian River County owned land only up to the property line adjacent to the fire station and Riverwalk Market. The scope consists of the following items:

- Obtain existing elevations within a 100 ft x 100 ft area around the existing elevated storage tank
- Obtain existing elevations within a 20-ft easement approximately 500 ft long from the tank site to Roseland Rd
- Location of above ground improvements in the same area
- IRCU established bench marks will be used for elevation reference and be obtained by IRCU surveyor
- The vertical datum elevations will be referenced to NAVD 88 datum.
- Horizontal datum to be NAD 83/90
- Deliverable to include four sets of signed/sealed surveys

Task 2 – Preparation of Design Drawings and Specifications - Piping, Booster Pump Station

Consultant will review site constraints with IRCU staff and identify preliminary layouts prior to preparing final design drawings.

Consultant will prepare design drawings of the site plan and piping, pump station, and tank inlet piping, watermain extension from Roseland Rd, electrical starters/VFD's and control panel, telemetry, and inlet control valve.

Consultant will prepare 60% and 100% review set of plans consisting of; pump station and yard piping, connections to the existing storage tank, modification to the existing altitude valve vault, extension of existing watermain,

Consultant will provide final design of the pump station sized to pump potable water from the existing elevated storage tank to distribution. Estimated pump capacity is anticipated to be 1,000 up to 1,500 gpm per pump, however, this is to be determined and finalized with IRCU. Consultant will size and select a pump type for the pump station. Consultant will design associated piping, fittings and valves to connect pumps and proposed watermain.

Consultant will design a pump station bypass to allow gravity flow from the storage tanks to

Consultant will design an inlet control valve configuration which will allow filling of the elevated ground storage tank at a variable flow under a constant head condition. The valve will be designed to maintain a fixed influent pressure, but will have flexibility to modulate to provide constant fill rate as well. The facility will also have the ability to bypass the elevated tank under non-standard events.

Design drawings will consist of;

- Cover sheet
- Overall site plan - tank, pump station
- Tank piping plan and details (x2)
- Pump details and inlet piping (x2)
- Process Piping and Instrumentation Diagram & Legend
- Details (2)
- Electrical schematics, design, and details (under separate task)

Consultant will provide four (4) printed hard copies at each review and electronic version in pdf and Word format for review.

Consultant will attend up to two (2) review meetings to discuss review comments and incorporate Owner comments with IRCU staff.

Consultant will prepare 60% and 100% final design of a booster pump station for review by IRCU.

Consultant will prepare technical specifications for the site, piping, transfer pump station, landscaping and pond. Consultant will prepare 60% and 100% review sets for Owner review. Consultant will provide four (4) printed hard copies of each and electronic version in Adobe.pdf, MSWord, and AUTOCadd 2014 format of final documents.

Consultant will prepare an opinion of probable construction costs for the pump station, consisting of the booster pump station, influent piping and control valve station to the storage tanks, pump station (pumps, piping, valves, electrical, civil, controls), distribution piping tie-in to existing watermain, electrical and controls including local and distributed control via the IRCU SCADA system.

Consultant will prepare an opinion of probable construction costs based on final drawings and specifications.

Task 3 – ELECTRICAL DESIGN

Consultant's subconsultant, C&W Engineering Consultants (C&W), will prepare electrical and instrumentation engineering design associated with the booster pump station. The system is assumed to be designed based on the following:

- Electrical improvements including motor starters in existing master pump station electrical room, PLC and control panel modifications
- Two (2) 60 hp, or three (3) 40/50 HP booster pumps, rated for 480V 3-phase power, driven by VFD's
- Inlet control valve with flow meters and inlet/outlet pressure monitors
- Level monitoring in tank
- A new remote PLC within the MCP shall be utilized for control and operation of the new pumps and instruments

Consultant will visit the site and observe existing electrical service and space for new electrical gear and control cabinets. C&W shall assist with building department permitting process and answer a reasonable number of questions resulting from building department review.

Consultant will prepare electrical design drawings consisting of electrical site plan, single line diagrams, control panel schematics, and details for a new booster pump station being powered and controlled via VFD's and PLC control system.

Task 4 – PERMITTING

The Consultant will prepare and submit an FDEP permit application 62-555.900(1) for the proposed pump station, generator, and electrical improvements, including a permit application

fee to be paid for by IRCU. The Consultant will submit one permit application for both elements, the pump station and watermain. The permit application will be submitted when the drawings and specifications are in a condition for permitting agency review. Consultant will respond to up to two requests for additional information (RFI's from DEP).

Consultant will assemble prepared drawings and specifications to support the permit application. Consultant will prepare four (4) signed and sealed copies of permit application package and submit to FDEP Southeast District. Consultant will respond to reasonable requests for additional information from FDEP permitting agency requests for clarification. The permit application fee of \$500 will not be included under this scope and shall be paid by IRCU.

It is assumed that only a minor site plan through administrative approval is necessary since the improvements will be less than 1,500 sq ft, and that only a technical review committee (TRC) review will be required. Consultant will prepare documents and submit to the TRC for a minor site plan approval (minor). It is assumed IRCU staff will help process the application.

Task 5 – CONSTRUCTION PHASE SERVICES

The project will be publicly bid, and Consultant will provide electronic copies of technical specifications and drawings for bid phase. Consultant will assemble design documents for bidding the project, consisting of:

- Booster pump station, including electrical and standby power
- Watermain from Roseland Rd to pump station

Consultant will provide up to six (6) hard copies of technical specifications and drawings for advertisement of each by the Indian River County (IRC) purchasing department. Consultant will provide coordination with purchasing department. It is assumed that the front-end contract documents to be used for advertisement will be prepared by IRC.

Consultant will respond to contractor questions, and provide written responses for IRC to process for the work prepared by KHA.

Consultant will review bids received and provide review summary of the lowest qualified bidder.

Consultant will answer contractor questions and prepare addenda, which will be distributed to all the contract document holders. Consultant will attend a pre-proposal meeting at the project site or IRCU's office. It is assumed that Indian River County Utilities will distribute project manuals, including drawings, specifications, and will distribute all addenda.

Consultant shall answer a reasonable number of requests for additional information and clarifications for the construction and installation of the water main, booster pump station and electrical system. Consultant will respond in written format in a timely manner.

Consultant shall review shop drawings and submittals for conformance with the design documents. It is assumed that approximately twelve (12) submittals will be reviewed. Consultant will provide written comments and respond to Owner's contractor within a reasonable time. Consultant will endeavor to complete the reviews within a 2 week timeframe.

Consultant will provide on-site observation of construction. It is assumed that up to twenty (20) half days of observation will be provided by a project engineer or resident inspector.

Consultant will attend a preconstruction meeting.

Consultant will attend and witness startup and operational testing of the booster pump station. Consultant will develop a punch-list of incomplete items based on our on-site observations and startup testing. Consultant will issue a written punch-list to Owner and contractor. Consultant will provide one (1) site visit to review follow up work on punchlist items.

Consultant will attend and witness tie-in connections to existing reclaimed watermain and to the existing irrigation pump station at Crane Creek.

Consultant will review contractor furnished record drawing information and operation and maintenance manuals (O&M) as required under the certification of completion. Consultant will review the record drawings and note substantial deviations on the certification form.

Consultant will booster pump station into operation (FDEP Form 62-555.900(9)). Record drawing information will be provided by the contractors and included with the certification package. Four (4) hard copies and one electronic copy in pdf and Word format will be furnished to IRCU.

TIME SCHEDULE

Consultant will complete these tasks in a timely and mutually agreed upon schedule. It is anticipated that the following task schedule will be provided:

TASK 1 – SURVEY	45 days from NTP
TASK 2 – PREPARE DESIGN DWGS AND SPECS	100 Days after survey
TASK 3 – ELECTRICAL DESIGN	120 Days after survey
TASK 4 – PERMITTING	60 Days after Task 3
TASK 5A – BIDDING	60 Days after Task 4
TASK 5B – CONSTRUCTION PHASE SERVICES	210 Days after Task 5A

FEE SCHEDULE

We will provide these services in accordance with our Continuing Services Contract Agreement for Professional Services dated November 4th, 2014, with Indian River County.

The Consultant will provide professional services for Task 1 through Task 5 on a lump sum fee basis as follows:

Task No.	Task	Task Fee
Task 1	Survey	\$ 4,964
Task 2	Prepare Design Dwgs & Specs	\$ 32,174
Task 3	Electrical Design	\$ 23,621
Task 4	Permitting	\$ 7,851
Task 5	Construction Phase Services	\$ 43,612
	Total Lump Sum Fee =	\$112,222

ADDITIONAL SERVICES

The following services are not included in the Scope of Services for this project, but may be required depending on circumstances that may arise during the execution of this project. Additional services include, but may not be limited to the following:

- Additional coordination and responses to FDEP or other agencies (ACOE, IRFWCD)
- Site plan approval process with IRCU
- Tank condition inspection and assessment

ASSUMPTIONS

- No property acquisition included. It is assumed the pump station will fit on Indian River County owned land.