

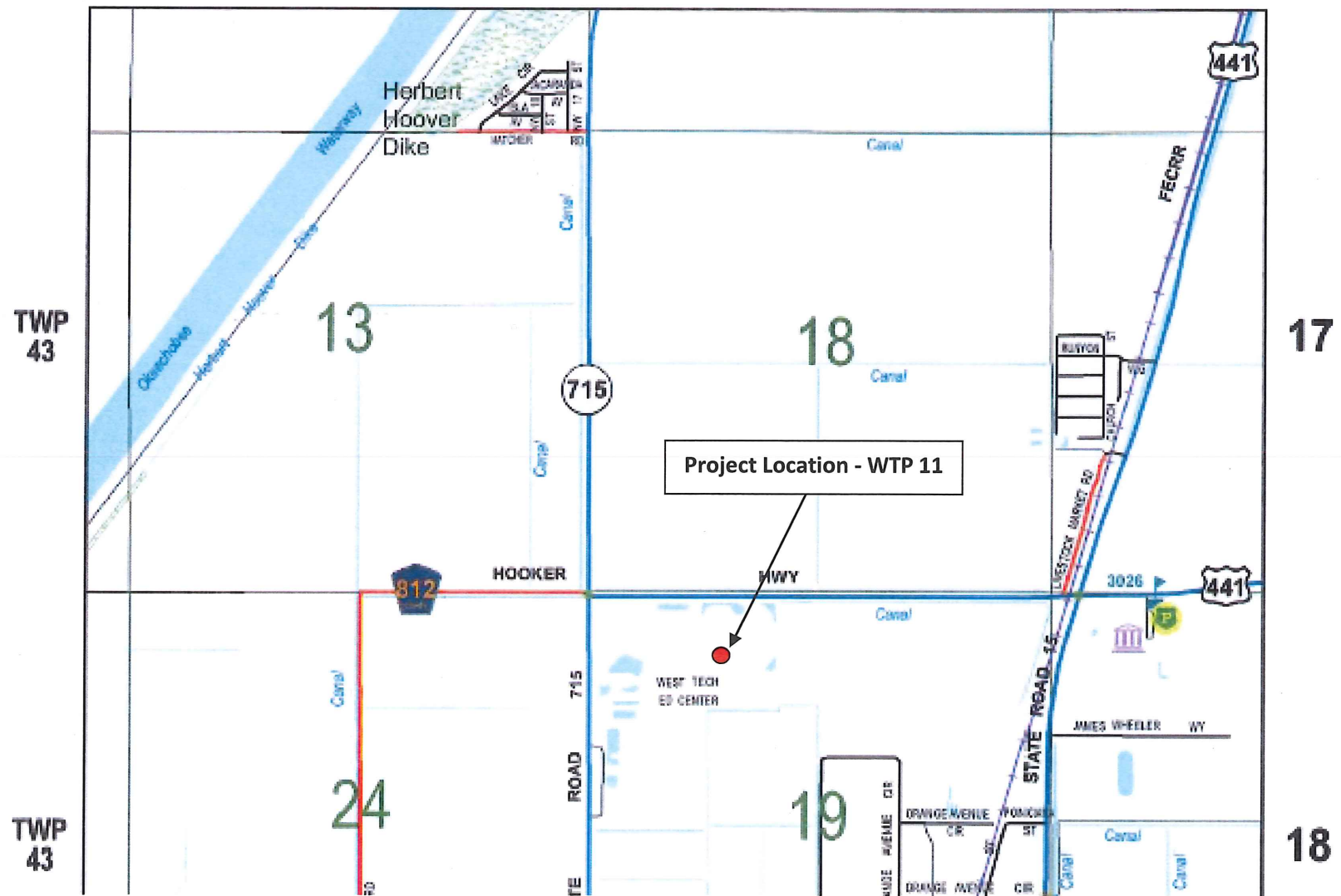
ATTACHMENT 1
Location Map

Page 151

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See pg 143

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WORK AUTHORIZATION NO. 07

Palm Beach County Water Utilities Department
Optimization and Improvements Design-Build Contract

Project No.: WUD 16-058

District: 6

Budget Line Item No.: 4011-721-W026-6541

Project Title: Water Treatment Plant No. 11 – Phase II WTP Improvements

THIS AUTHORIZATION # 07 to the Contract for Optimization and Improvements Design-Build Services dated March 10, 2015 (R 2015-0315), by and between Palm Beach County and the Design-Build Entity identified herein, is for the Design/Build Services of this Work Authorization. The Design-Build Entity provides for 75% SBE participation overall. This Work Authorization includes 96.88 % overall participation. The cumulative proposed SBE participation, including this authorization is 96.63 % overall. Additional authorizations will be utilized to meet or exceed the stated overall participation goal.

1. Design-Build Entity: Globaltech, Inc.
2. Address: 6001 Broken Sound Parkway NW, Suite 610, Boca Raton, FL 33487
3. Description of Services (Scope of Work) to be provided by the Design-Build Entity:

See **ATTACHMENT - A.**

4. Services completed by the Design-Build Entity to date:

See **ATTACHMENT - G.**

5. Design-Build Entity shall begin work promptly or deliver ordered materials within the following calendar days from the receipt of Building Permit and Notice to Proceed with construction:

Substantial Completion 455 Calendar Days

Final Construction Completion 515 Calendar Days

Liquidated damages will apply as follows:

\$ 500 per day past substantial completion date.

\$ 250 per day past final completion date.

(For Liquidated Damages Rates see **ATTACHMENT - B**)

6. The compensation to be paid to the Design-Build Entity for providing the requested services in accordance with the Guaranteed Maximum Price is \$ 1,965,625.00. The Guaranteed Maximum Price includes a Not to Exceed fee of \$5,000.00 for site survey and \$10,000.00 for FRP tank inspection.

7. EXCEPT AS HEREBY AMENDED, CHANGED OR MODIFIED, all other terms, conditions and obligations of the Contract dated March 10, 2015 remain in full force and effect.

Project No.: WUD 16-058

Project Title: Water Treatment Plant No. 11 – Phase II WTP Improvements

IN WITNESS WHEREOF, this Authorization is accepted, subject to the terms, conditions and obligations of the aforementioned Contract.

PALM BEACH COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA

Sharon R. Bock, Clerk & Comptroller,
Palm Beach County

Palm Beach County,
Board of County Commissioners

ATTEST:

Signed: _____

Signed: _____

Mary Lou Berger, Mayor

Typed Name: _____
Deputy Clerk

Date

JW

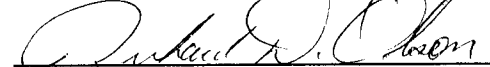
Approved as to Form and Legal
Sufficiency

Signed: _____

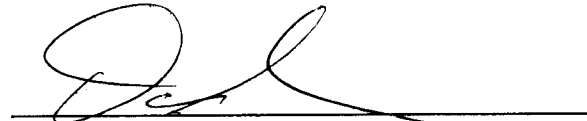
Typed Name: _____
County Attorney

CONTRACTOR: Globaltech, Inc.

ATTEST:



Witness



(Signature)

Richard D. Olson, P.E. / Proposal Manager
(Name and Title)

David A. Schuman, P.E. / Secretary
(Name and Title)

(CORPORATE SEAL)

August 15, 2016
Date

LIST OF ATTACHMENTS

WORK AUTHORIZATION NO. 07

**Palm Beach County Water Utilities Department
Optimization and Improvements Design-Build Contract**

ATTACHMENT - A	Scope of Work & Compensation
ATTACHMENT - B	Rate for Liquidated Damages
ATTACHMENT - C	Public Construction Bond
ATTACHMENT - D	Form of Guarantee
ATTACHMENT - E	Work Authorization Schedule of Bid Items
ATTACHMENT - F	SBE Schedule 1 & Schedule 2
ATTACHMENT - G	Authorization Status Report - Summary & Status of Authorizations
ATTACHMENT - H	Authorization Status Report - Summary of SBE/Minority Business Tracking
ATTACHMENT - I	Location Map
ATTACHMENT - J	Design-Build Criteria Report
ATTACHMENT - K	Vendor Quotes

ATTACHMENT A

WORK AUTHORIZATION NO. 7

Palm Beach County Water Utilities Department

Optimization and Improvements Design-Build Contract

SCOPE OF WORK FOR

WTP No. 11 – Phase II WTP Improvements
Project No. WUD 16-058

INTRODUCTION

Palm Beach County (County) entered into an agreement entitled Optimization and Improvements Design-Build Contract Project No. WUD 14-071 (CONTRACT) with Globaltech, Inc. (Design-Build Entity) to provide design-build services for various general activities on the Optimization and Improvements Design-Build Contract dated March 10, 2015, (R 2015-0315). This Work Authorization will be performed under that CONTRACT.

This Work Authorization encompasses providing services related to the following tasks at WTP No. 11:

- Replacement of existing deep injection well (DIW) surge tank including inlet/outlet valve and pipeline, and instrumentation.
 - Replacement of sight gauge, level transmitter, and pressure transmitter on DIW Annulus tank.
 - Installation of degasifier cleaning system which includes a trailer-mounted portable diesel pump, degasifier modifications, permanent and temporary cleaning pipping, and drainage piping.
 - Automation of ammonia system with three new ammonia feeders with flow meters, supply piping, and accessories.
 - Replacement of existing 1% sodium hypochlorite manual dosing system with an automated 12.5% sodium hypochlorite system consisting of four pumps, three flow meters, and new double contained feed piping.
 - Removal of unlined ductile iron pipe at the permeate flow meter vault which shall include reconfiguring the piping from a below grade vault to an above grade pipe.
 - Replacement of existing 4" ductile iron pipe discharge pipe of process plant lift station included supports and valves. Pipe shall be replaced with 316SS and HDPE pipe. The existing buried isolation valve is to be replaced. Replacement valves and support to be constructed of 316 SS.
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- Replacement of existing clearwell hatch covers (frames to remain) and removal of existing internal access ladders.
- Installation of two Hach Ultraturb turbidity meters at clearwell to monitor turbidity on each side of clearwell.
- Replacement of for ductile iron overflows hatches with PVC elbows with bug screens.
- Installation of a backup clearwell level sensor in the pump section of the clearwell.

SCOPE OF SERVICES

Design-Build Entity shall perform the Scope of Services described in the ***Design-Build Criteria for WTP 11 Phase II WTP Improvements*** (PBCWUD, July 21, 2016) and as described herein:

The below scope of work represents the overall modifications needed to achieve the improvements as described in the Design-Build Criteria.

The proposed work to be performed by the Design-Build Entity generally includes furnishing all labor, equipment, materials, tools, supervision, and services required to design, construct, test, and startup the proposed work is generally described as follows:

Task 1 – Administrative and Engineering Services

1. Meet with the County to review project scope.
 2. Conduct utility locates using ground penetration radar and electromagnetic technologies.
 3. Develop subcontracts with electrical engineers, utility locator, electrical contractor and other entities as may be required.
 4. Prepare a preliminary (60%) design and 90% design.
 5. Submit five (5) half-size copies of the 60% design to the County. Meet with the County to review the design.
 6. Incorporate the County comments from 60% design and proceed to 90% and final design stages in accordance with the PBCWUD Water Utilities Minimum Design and Construction Standards, Engineering Design-Manual and security requirement.
 7. Submit five (5) half-size copies of the 90% designs to the County. Meet with the County to review the design and incorporate into 100% design.
 8. Submit FDEP/Palm Beach County Health Department and building department permit applications for applicable portion of project.
 9. Prepare detailed construction schedule to include as a minimum; engineering and permitting services, site mobilization, detailed construction activities, scheduled shutdowns and durations, equipment/material delivery times, testing, startup and commissioning.
 10. Prepare submittals (or confirmation of compliance with County design standards), administer and track submittal process.
 11. Schedule meetings, inspections, and testing with County staff.
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12. Provide Engineer's site visits during construction to confirm construction is being performed in conformance with the Design Drawings and Specifications.
13. Prepare Record Drawings, Operation and Maintenance Manuals, and closeout permits.

Task 2 – Construction Services

1. Replacement of DIW surge tank:
 - a. Furnish and install a new 6,000 gallon horizontal surge tank to replace existing steel tank. The new tank shall be equipped a replaceable rubber bladder, differential pressure (DP) transmitter, safety pressure relief valve, pressure gauge, and fill port with ball valve. Concentrate will be contained inside the rubber bladder to limit corrosion of the tank. Interior of tank shall have an epoxy lining. A spare bladder will not be provided as long term storage may damage spare bladder. The existing surge tank is to be disposed of by the Design-Build Entity.
 - b. The 12" buried inlet/outlet valve is to be removed and replaced with a 12" 316 SS butterfly valve on the inlet/outlet of the surge tank. The inlet/outlet line from buried valve to tank shall be replaced with PVC pipe matching the existing pipe's pressure rating.
 - c. DP transmitter shall be connected to plant SCADA for remote monitoring, data recording, and alarm functions. Modifications to existing PLC programming (by Design-Build Entity) and HMI screens (by County) shall be made to incorporate the new monitoring system. New monitoring system shall be different than existing monitoring system and shall not have local readouts for level and pressure. Local readout on DP transmitter is to be provided.
 - d. Surge tank shall be installed on new concrete cradles. Structural engineer shall evaluate cradles and anchors to meet the most recent building code.
 - e. Existing air-line will be connected to the new tank. Existing air-line will be modified to add a solenoid valve and pressure regulator off the common manifold that is shared by the DIW Annulus tank.

2. Replacement of instrumentation on DIW Annulus tank.
 - a. Furnish and install a new stainless steel level sight gauge with magnetic flags to replace existing clear PVC sight gauge. New sight gauge will also be equipped with continuous monitor level sensor.
 - b. Furnish and install a new pressure transmitter to replace existing pressure transmitter.
 - c. To install new instruments, the Annulus tank will be isolated and drained. The Annulus fluid will be collected and then reused to fill tank after the instruments are installed. Three (3) new ½" 316 SS ball valves with threaded end will be furnished and installed for the sight gauge and pressure transmitter.
 - d. Pressure transmitter and continuous level indicator shall be connected to plant SCADA for remote monitoring and alarm functions. It is assumed that the existing SCADA communication and programming are functioning and will not require modification to provide a working system.
 - e. Existing air-line will be modified to add a solenoid valve and pressure regulator off the common manifold that is shared by the DIW surge tank.

3. Installation of a degasifier cleaning system.
 - a. Furnish one (1) diesel powered engine-driven portable pump capable of delivering 1,700 gpm. The pump shall be furnished on a trailer with throttle to allow for speed control. The portable pump is assumed to be located on the south side of the degasifier clearwell where it is to be connected to the degasifier via a combination of permanent and temporary/removable suction and discharge piping.
 - b. Modify each of the two degasifiers as follow for the cleaning system:
 - i. Modify each degasifier sump to add one (1) 10" flanged drain/pump suction connection/nozzle
 - ii. Modify each degasifier sump to add one (1) 1" flanged ports complete with 1" PVC ball valve and blank flange and for the addition of cleaning chemicals
 - iii. Remove and replace existing 4" diameter packing cleaning header and nozzle in each degasifier by installing new 8" cleaning header and nozzle. Install 8" PVC pipe and new support clips for the new 8" pipe that is to be routed from cleaning header to top of clearwell.
 - c. Install permanent 10" FRP drain/pump suction piping and 8" FRP pump discharge piping from degasifiers to north side of clearwell. Piping shall have removable spool pieces to allow for isolation between degasifiers and for walkway access when cleaning system is not in use. Suction and discharge piping shall have two (2) 8" and two (2) 10" butterfly isolation valves with geared manual actuator and handwheel to isolate the degasifiers. Piping supports for the cleaning piping shall be provided.
 - d. A valve connection station shall be installed at ground level on the north side of the clearwell. The valve station will provide a connection point for the portable diesel pump and the degasifier cleaning piping. The piping station shall be located on a new 12-ft x 12-ft x 4-inch concrete slab where the diesel pump can be placed. The valve station will be equipped with four (4) 6" butterfly isolation valves with geared manual actuator and handwheel to be able to isolate flow and redirect spent cleaning solution to drain to the plant lift station.
 - e. A 6" PVC drain line shall be installed from valve connection station to the plant lift station. The plant lift station shall be cored to install the drain line connection.
 - f. Miscellaneous hose connection shall be provided to attach the portable diesel pump to the valve connection station.
4. Automation of Ammonia System.
 - a. Remove the two (2) existing ammoniators and associated controls and pipework. The removal of the existing ammoniators shall be coordinated to provide minimal impact to plant operations.
 - b. Replace the two existing ammoniators with three (3) new ammoniator units.
 - i. Each ammoniator unit shall have a new mass flow controller / flow meters to feed ammonia proportionally to flow and residual trimming. Mass flow controller/flow meter shall provide local indication of gas flow and dose rate.
 - ii. The ability to manually control the ammoniators locally shall be provided by isolation valves and visual rotameter.
 - iii. The three (3) ammoniators shall be arranged so as to provide (2) duty and

- one (1) common swing/standby.
 - iv. The new ammoniators will be connected to the existing ammoniator discharge piping that feeds each side of the clearwell.
 - v. The new ammoniators will be installed within the existing ammoniator building and will be fed from the existing bulk ammonia storage tank.
 - vi. Each ammoniator will be installed to include a dedicated secondary feed regulator and filter prior to the unit and a varea-meter after the unit. Each ammoniator shall be capable of delivering between 0 and 110 pounds per day (ppd).
 - vii. Each ammoniator unit will each have a solenoid valve and drip leg heater.
 - viii. Provide necessary connections to the existing electrical power and control systems.
 - c. Replace the existing supply line from the bulk ammonia tank to the ammoniators.
 - i. The new supply line will be ½" 316 SS tubing and will be braced using pipe supports.
 - ii. Supply line be equipped with a pressure relief valve, low pressure switch, two new regulators (1 + 1 inline spare), two strainers, and isolation ball valves. These items shall be placed on a mounting board and the exterior of the ammonia building.
 - iii. Supply line shall be provided with a valve and tee for the ability to purge the system with nitrogen. A nitrogen purge will be performed by the Design-Build Entity prior to commissioning the ammoniators. PBC WUD will be responsible for providing nitrogen cylinder for future purges.
 - d. Provide programming of the plant PLC for automatic control of the ammoniator(s) using flow proportioning control. The plant PLC will calculate the required ammonia dose rate to each clearwell side based on a flow rate from the degasifier flow meter for the corresponding clearwell side. The plant PLC will send a dose rate signal to the ammoniators and the gas flow control valve shall respond to achieve that set point. In addition, the ammoniators will receive a free ammonia signal from the ammonia analyzer located on the pipeline between the clearwell transfer pumps and the ground storage tanks. The free ammonia signal will be used to trim the ammonia dose rate to zero (0) mg/L. Ammonia feed system will be automated for spare to be started from HMI and PLC and be paced/trimmed based on injection point selected on HMI. Valving for injection point for spare shall be manual. HMI screen revision shall be performed by County.
5. Replacement of 1% sodium hypochlorite manual dosing system with 12.5% sodium hypochlorite automatic dosing system.
- a. Remove the two existing hypochlorite pumps, piping, and controls. The removal of the existing hypochlorite pumps shall be coordinated to provide minimal impact to plant operations.
 - b. Install four new progressive cavity pumps as manufactured by Seepex Inc. in the membrane process building where the on-site generation (OSG) chlorine system was previously located.
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- i. The pumps are to be provided on two pump skids with two pumps on each skid. Each skid shall have a calibration column and pressure relief valve.
 - ii. Each skid will have a duty and standby pump dedicated to each side of the clearwell. If needed, one of the standby pumps would be used for the high service pump (HSP) injection point. Each pump shall be capable of delivering a chlorine dose between 0 and 7.5 mg/L of chlorine to a flow rate of up to 6.0 mgd, or be capable of delivering a chlorine dose between 0 and 3 mg/L to a finished water flow rate of up to 20 mgd.
 - iii. Plasmatic degassing 1/2-inch valves shall be mounted on each feed line for the three injection points at the high point from the discharge of the pump skid.
 - iv. Provide programming of the plant PLC.
 - 1) The duty/standby to each side of the clearwell will be "normal" operation with manual valves set for this operation. If the control system sees a duty pump failure (and alarm), it would automatically call for the standby pump to operate. In automatic control of the clearwell sodium hypochlorite pumps, the pump would provide feed rate using flow proportioning control and chlorine residual trimming. Control of the clearwell dosing pumps shall be will via plant operations staff entering a chlorine residual set point into the plant control system and the plant PLC will calculate the required dose based on the measured flow to each side of the clearwell as measured by the flow meters located on the degasifier risers.
 - 2) In the event the control system detects free ammonia above a set point at the WTP point of entry, the control system would alarm notifying the operations staff and the operations staff would either decide to intervene manually. This intervention would be a manual process by choosing one of the standby clearwell pumps to dose to the HSPs then open/close the manual discharge valves on the discharge to the hypochlorite pumps to allow the chosen clearwell standby pump to dose to the HSPs and then placing the selected pump into free ammonia trim dose mode within the control system. In this instance there will only be one common duty pump to each side of the clearwell and these discharge valves would need to be opened/closed to allow the common standby to function "Free Ammonia Trim" mode. The control system would then dose hypo to the HSPs to drive free ammonia towards zero or a set point. There will be a point when free chlorine is detected or the hypo dose reaches zero then the HSP dosing pump should stop. If this is achieved the operator will need to decide to place the system back into "normal" operations mode.
- c. Install three magnetic flow meters to monitor flow for each injection point. Flow meter will be use to alarm and shut down pump for no flow conditions and feedback for flow pacing of dosage.
 - d. The existing sodium hypochlorite 2" PVC supply line from the bulk tanks to the

previous OSG chlorine system shall be utilized. The existing 2" supply line will be extended from the existing pumps over to the new pumps. Two ½" PVC Plasmatic Degassing valve with ½" PVC vented ball valves shall be placed on two known high spots on the supply line, one at bulk containment area and one inside the membrane process area where the supply line enters the building.

- e. Install new above grade and buried discharge piping with the appropriate secondary containment between the chlorine dosing pumps and injection points. Three (3) 3" PVC or HDPE lines will be used as containment piping/sleeve between the membrane building to each of the three injection points. In each sleeve, two (2) ½" OD PFA/PTFE tubing shall be routed. Five (5) pull boxes will be utilized so that tubing can be replaced in the future if needed without having to dig the site.
 - f. Demolish existing OSG vent piping from interior of membrane building to bulk storage area. Piping penetrating membrane building shall be capped on inside and outside. Remove associated blowers, exhaust stack, piping, piping supports and control panels at bulk storage area. Terminate associated electrical associated with blowers. Grind back anchors. Coating in bulk storage containment basin to be repaired by others.
6. Installation of Bulk Sodium Hypochlorite Tank.
- a. The existing 10,000 gallon sodium hypochlorite dilution tank (middle tank bay) used for the production of one (1) percent sodium is to be removed. Furnish and install a new 10,000 gallon fiberglass sodium hypochlorite storage tank and associated piping, appurtenances and instrumentation.
 - i. Tank shall be cylindrical, atmosphere pressure and temperature rated, designed for the intended specific gravity and intended use. Sodium hypochlorite tank shall be designed for minimum 0.8% and a maximum 15.0% sodium hypochlorite concentration with a pH between 12.5 and 13.
 - ii. Tank including anchors and tie-downs shall be designed to withstand wind loads of 186 MPH (exposure C); shall comply with seismic loads: 2012 IBC/ASCE 71-0 Ss=0.049g SI=0.025G; shall comply with Design Code: ASTM D3299.
 - iii. All materials that are metal (brackets, bolts, vent screens, etc) shall be 316 Stainless Steel (SS).
 - iv. Tanks shall have 316 SS lifting lugs. There shall be a minimum of three lugs on the tank. The lugs shall be located at the top of the tank, 120 degrees apart. Lugs shall be designed to carry the load of the tank with a safety factor of 2 applied. A 316 SS tailing lug may be placed on the bottom of the side shell.
 - v. Provide level monitoring for sodium hypochlorite tank through the use of ultrasonic level transmitter. Provide flanged outlet on the top of the sodium hypochlorite tanks and install ultrasonic level transmitter. Each tank shall have mounting brackets for electrical conduit.
 - vi. Provide floor mount access ladder with walk-through cage with return. Ladder and safety cage shall meeting or exceeding all OSHA requirements. Ladder and safety cage shall be constructed of fiberglass with safety rail system for use with safety harness. FRP cage systems to be pigmented OSHA safety yellow with ultraviolet (UV) inhibitor additives.
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- vii. Provide OSHA tank hazard labels identifying chemicals.
 - viii. Provide tank FRP encapsulated nameplate indicating tank construction parameters.
 - ix. Conduct hydrostatic leak test with tank full (to invert of overflow pipe) of clean water. Allow water to stand 24 hours to verify no leakage.
- b. Provide felt or neoprene pads under tanks as recommended by the tank manufacturer.
 - c. Provide flexible pipe connections at tank and at tanks containment wall to provide for thermal expansion, contraction and/or settlement.
 - d. Provide any necessary improvements to existing leveling pads as the new tanks may have additional anchors and for the removal of existing anchors.
7. Sodium Hypochlorite Containment Area Coating
- a. Furnish and install a protective coating system to the interior surface of the existing sodium hypochlorite secondary containment area. The coating will be applied to all interior concrete surfaces including the top of the containment area walls. The protective coating system shall be suitable for the proposed application and provide long-term protection to the concrete containment structure. The selected product shall be color coded per PBCWUD guidelines.
 - b. Replace all sodium hypochlorite piping inside the containment area up to the double containment including fill piping, outlet piping and overflow piping except for the dilution system and associated water piping which shall remain. Paint exposed sodium hypochlorite pipe yellow including fill piping, outlet piping and overflow piping. Use schedule 80 PVC piping and mount new piping approximately 6" above the containment floor with FRP unistrut and 316 SS bolts to facilitate future recoating of the containment. Supports shall be properly spaced to prevent visible sagging of piping. Provide manifold valves to isolate piping for leak repair without having to shut down the entire system.
 - c. Independent inspection of surface preparation, primer, intermediate and final coatings shall be made by a National Association of Coating Engineers (NACE) certified coatings inspector. Written reports of these inspections shall be submitted to PBCWUD. Coating work shall not be permitted to proceed without written approval from the independent NACE inspector stating that the prerequisite preparation and/or application work has been successfully completed.
 - d. Existing water softener and two (2) blowers including equipment pads, appurtenances, piping, controls, instrumentation and electrical equipment shall be demolished.
 - e. If the Containment Coating under the existing tanks is damaged, repair shall be by a Work Supplement.
8. Removal of unlined ductile iron pipe and venturi flow meter at the common permeate flow meter vault with above ground piping. The removal of the pipe and venture flow meter coordinated to provide minimal impact to plant operations.
- a. Preassemble above ground piping that replace below ground piping. Piping shall be 24-inch 316 SS, Schedule 10 with two Dresser style coupling to allow
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- for dismantling the pipe in the future, and two (2) 3-inch port with stainless steel blind flanges for future chemical addition.
- b. Replace unlined ductile iron sections and venturi flow meter.
 - i. Remove sections of vault needed to facilitate removal of pipe.
 - ii. Excavate around vault and provide dewatering to allow for work to be conducted below grade.
 - iii. Cut HDPE pipe and remove unwanted ductile iron pipe sections with venturi flow meter.
 - iv. Fuse two (2) 24" HDPE elbows with flange end with electrofusion couplings on two ends of the pipe. Backup electrofusion coupling and fusing machine shall be available on hand during installation.
 - v. Swab or spray new piping with chlorine.
 - vi. Connect HDPE elbows to preassemble above ground piping.
 - c. Demolish existing control wiring and conduits for venturi flow meter.
 - d. Provide wooden border with 57 rock around above ground assembly. Install four 4-inch pipe bollards at each corner of border.
 - e. Repair road and sod disturbed grassy areas.
9. Replacement of 4" DIP discharge piping for plant site lift station
- a. Saw cut and remove concrete around ductile iron pipe
 - b. Replace 4" DIP piping with 4" HDPE piping.
 - c. Remove existing 4" buried isolation valve and connect to new 4" HDPE pipe.
 - d. Replace three (3) 4" isolation valve with three (3) 4" 316 SS resilient seated flanged gate valves.
 - e. Replace two (2) 4" check valve with two (2) 4" 316 SS swing check valve with weight and level.
 - f. Install 2" Air Release Valve (H-TEC 986-01) with 2" 316 SST ball valve.
 - g. Install 2-1/2" pressure gauge with 316 SS diaphragm, and 1/2" 316 SST ball valve.
 - h. Repair concrete pad.
10. Replacement of clearwell hatches and removal of interior ladders.
- a. Remove clearwell hatches and replace with in kind replacement. Frames to remain.
 - b. Remove interior aluminum ladders. Grind anchors to concrete and coat area with NSF approved coating.
11. Installation of two turbidity meters for each clearwell section.
- a. Install two Hach turbidity meters on stand next to northwest corner of clearwell. Locate on stand with sun shield if there is no room available on clearwell wall.
 - b. Modify piping of sample pump for each clearwell section. Reconfigure piping so that the existing filter on each sample pump is on the discharge side of pump. Insert tee upstream of filters and route new 1/2" PE tubing from sample pumps to each new turbidity meter.
 - c. Provide power to turbidity meter and connect to plant SCADA system. Add to plant historian. County shall make revision to HMI screens.
12. Replace clearwell overflow hatches.
- a. Remove three (3) ductile iron overflow flap valves and one (1) ductile iron elbow.
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- b. Install PVC flange with pipe cut at 60 degree with bug screen on each of the four overflow locations. Coat interior of existing core for overflow.
 - c. Clean iron staining from clearwell wall.
13. Installation of backup clearwell ultrasonic level transmitter.
 - a. Core drill 6" hole in top of clearwell in south west corner in pump section.
 - b. Install Hydromanger level sensor and transmitter.
 - c. Provide power to level transmitter and connect to plant SCADA system.
 - d. Modify PLC programming for level transmitter control and back up for transfer pumps. Add to plant historian. County shall make revision to HMI screens.
14. Electrical:
 - a. Furnish and install new conduit and wire for new instruments. Provide surge protection and grounding.
 - b. Furnish and install digital and analog I/O required for system functionality. Connect new signals to signals to RIO-9.
 - c. PLC programming.
15. Restore site to existing conditions.
16. Provide O&M manuals supplied with new equipment.

Permits and Fees

It shall be the Design-Build Entity's responsibility to secure all permits required to complete the work under this contract, except permits obtained by the County. The Design-Build Entity shall be responsible for all inspections and requirements to close-out the completed permits. The County shall pay all permit fees. The Design-Build Entity shall be responsible for all Business tax fees for work within the county or Municipalities.

SALVAGED MATERIALS

1. Scrap metal to be placed in the County's salvage dumpster (except for existing DIW surge tank)
2. Non-metal waste such as concrete, PVC, fiberglass etc., to be hauled and legally disposed by Design-Build Entity.

ASSUMPTIONS

1. A Not-to-Exceed fee of \$5,000.00 has been reserved to conduct the site survey. Should the subcontracted services be performed for a fee less than \$5,000.00, the unused portion will be returned to the County.
 2. A Not-to-Exceed fee of \$10,000 has been included in the Work Authorization to address a potential inspection of the FRP tank. Should the services not be performed, the unused portion will be returned to the County.
 3. No permit changes to Deep Injection Well UIC permit is assumed to be made by the Design-Build Entity. Should permit changes be required or needed to the UIC permit, they will be made by the County or by others.
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4. The site is assumed to have been demucked and compacted based on the original construction at the site. No pilings were assumed to be required. No soil boring(s) will be performed for this work.
5. County will make available all existing record drawings and surveys as may be required to coordinate and complete this scope of services.
6. County will make available construction photographs of associated areas as may be required to coordinate and complete this scope of services.
7. County will review all submittals and provide comments within one calendar week and notify Design-Build Entity of status.
8. Liquidated damages may be assessed at a rate of \$500 per day up to Substantial completion and \$250 per day from Substantial Completion until Final Completion (consistent with a Moderately Important Project as outlined in **Attachment B**).
9. COUNTY shall provide:
 - IP Addresses where required
 - Programming of SCADA screens.

COMPENSATION

Compensation for this Work Authorization shall not exceed the Guaranteed Maximum Price of **\$1,965,625.00** in accordance with the unit prices established in the Contract for construction services dated March 10, 2015, as approved by the Board of County Commissioners. Guaranteed Maximum Price includes \$5,000.00 Not to Exceed fee for site survey and \$10,000.00 Not to Exceed fee for FRP tank inspection.

SBE/M-WBE PARTICIPATION

As described in the Contract (R 2015-0315), SBE/M-WBE participation is included in ATTACHMENT F under this Authorization. The attached Schedule 1 defines the SBE/M-WBE applied to this Authorization/Contract and Schedule 2 establishes the SBE/M-WBE contribution from each subcontractor (Letter of Intent to perform as an SBE/M-WBE).

ATTACHMENT – C

Public Construction Bond



NHC

NIELSON, ROSENHAUS & ASSOCIATES

A NIELSON HOOVER GROUP COMPANY

SMART, UNCOMPROMISING, TIMELY, EFFECTIVE. NIELSON, HOOVER & COMPANY, INC. SURETY SOLUTIONS THAT MAKE A DIFFERENCE.

August 15, 2016

Globaltech, Inc.
6001 Broken Sound Pkwy, Suite 610
Boca Raton, FL 33487

RE: Palm Beach County, as Obligee
Project: Water Treatment Plant No. 11 - Phase II WTP Improvements (WUD 16-058)
Bond No. SU1135645

Dear Ladies and Gentlemen:

Please supply us with the following information for the above captioned final bond:

Executed Contract with Date: X

This letter is also giving Globaltech, Inc. as Principal and/ or Palm Beach County, as Obligee, the authority to complete these bonds by dating the Form of Guarantee with the contract date, execution and Power of Attorney dates. **The contract date MAY BE THE SAME date as the execution of the bond or PRIOR to the execution date of the bonds.**

We will forward this information onto your surety company upon our receipt. Please return as soon as possible.

Thank you for your cooperation.

Sincerely,

Brett Rosenhaus,
FL Resident Agent

8401 Lake Worth Road
Suite 2-231
Lake Worth, FL 33467
P: 561.713.1453
F: 561.713.1455
www.nielsonbonds.com

ATTACHMENT - C

PUBLIC CONSTRUCTION BOND

BOND NUMBER: SU1135645

BOND AMOUNT: \$1,965,625.00

CONTRACT AMOUNT: \$1,965,625.00

CONTRACTOR'S NAME: Globaltech, Inc.

CONTRACTOR'S ADDRESS: 6001 Broken Sound Parkway NW
Suite 610
Boca Raton, FL 33487

CONTRACTOR'S PHONE: (561) 997-6433

SURETY COMPANY: Arch Insurance Company

SURETY'S ADDRESS: 300 Plaza Three
Jersey City, NJ 07311
201-743-4000

OWNER'S NAME: Palm Beach County

OWNER'S ADDRESS: 8100 Forest Hill Boulevard
West Palm Beach, FL 33413

OWNER'S PHONE: (561) 493-6000

DESCRIPTION OF WORK: Miscellaneous improvements at WTP 11 as outlined in PBCWUD contract no. WUD 16-058.

COUNTY'S PROJECT No: WUD 16-058, WA-07

PROJECT LOCATION: PBCWUD Water Treatment Plant No. 11 (WTP 11), 39700 Hooker Highway, Belle Glade, FL 33430-5934, PCN 00-37-43-19-00-000-3060.

LEGAL DESCRIPTION: PCN 00-37-43-19-00-000-3060

PUBLIC CONSTRUCTION BOND

This Bond is issued in favor of the County conditioned on the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS: that Contractor and Surety, are held and firmly bound unto

Palm Beach County Board of County Commissioners
301 N. Olive Avenue
West Palm Beach, Florida 33401

as Obligee, herein called County, for the use and benefit of claimant as herein below defined, in the amount of

Dollars \$1,965,625.00

One million nine hundred sixty five thousand six hundred twenty five dollars and zero cents.

for the payment whereof Principal and Surety bind themselves, their heirs, personal representatives, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Principal has by written agreement dated _____, 20____, entered into a contract with the County for:

Project Name: Water Treatment Plant No. 11 – Phase II WTP Improvements
Project No.: WUD 16-058
Project Description: Miscellaneous improvements at WTP 11 as outlined in PBCWUD contract no. WUD 16-058.
Project Location: PBCWUD Water Treatment Plant No. 11 (WTP 11), 39700 Hooker Highway, Belle Glade, FL 33430-5934, PCN 00-37-43-19-00-000-3060.

in accordance with Design Criteria Drawings and Specifications prepared by:

Name of Design Firm: Globaltech, Inc.
Location of Firm: 6001 Broken Sound Parkway NW, Ste. 610, Boca Raton, FL 33487
Phone: (561) 997-6433
Fax: (561) 997-5811

which contract is by reference made a part hereof in its entirety, and is hereinafter referred to as the Contract.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, 20____, between Principal and County for the design and construction of WUD 16-058, the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05, Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays County all losses, damages (including liquidated damages), expenses, costs, and attorneys'

fees, including appellate proceedings, that County sustains because of a default by Principal under the contract; and

4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.
5. Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond and Surety waives notice of such changes.
6. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of construction liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against the bond.
7. Principal and Surety expressly acknowledge that any and all provisions relating to consequential, delay and liquidated damages contained in the contract are expressly covered by and made a part of this Performance, Labor and Material Payment Bond. Principal and Surety acknowledge that any such provisions lie within their obligations and within the policy coverage's and limitations of this instrument.
8. Section 255.05, Florida Statutes, as amended, together with all notice and time provisions contained therein, is incorporated herein, by reference, in its entirety. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes. This instrument regardless of its form, shall be construed and deemed a statutory bond issued in accordance with Section 255.05, Florida Statutes.
9. Any action brought under this instrument shall be brought in the state court of competent jurisdiction in Palm Beach County, Florida and not elsewhere.

Rebecca Thomas
Witness
Rebecca Thomas
Print name

Jackie Haynes
Witness
Jackie Haynes
Print name

Globaltech, Inc.
Principal (Seal)
Bernard P. Gandy
Print name
Bernard P. Gandy, President
Title

Arch Insurance Company
Surety (Seal)
Brett Rosen
Print name
Brett Rosenhaus, Attorney-in-Fact
Title

ATTACHMENT – D

Form of Guarantee

ATTACHMENT - D

FORM OF GUARANTEE

GUARANTEE FOR GLOBALTECH INC. (CONTRACTOR) AND ARCH INSURANCE COMPANY (SURETY)

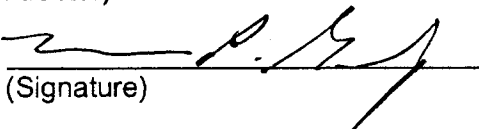
We the undersigned hereby guarantee that the **Water Treatment Plant No. 11 – Phase II WTP Improvements, WUD 16-058, WA-07**. Palm Beach County, Florida, which we have constructed and bonded, has been done in accordance with the plans and specifications; that the work constructed will fulfill the requirements of the guaranties included in the Contract Documents. We agree to repair or replace any or all of our work, together with any work of others which may be damaged in so doing, that may prove to be defective in the workmanship or materials within a period of one year from the date of Substantial Completion of all of the above named work by the County of Palm Beach, State of Florida, without any expense whatsoever to said County of Palm Beach, ordinary wear and tear and unusual abuse or neglect excepted by the County. When correction work is started, it shall be carried through to completion.

In the event of our failure to acknowledge notice, and commence corrections of defective work within five (5) calendar days after being notified in writing by the Board of County Commissioners, Palm Beach County, Florida, we, collectively or separately, do hereby authorize Palm Beach County to proceed to have said defects repaired and made good at our expense and we will honor and pay the costs and charges therefore upon demand.

DATED: _____
(notice of completion filing date)


SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY

Globaltech, Inc. _____ (Seal)
(Contractor)

By: 
(Signature)

Bernard P. Gandy
(Printed Name)

Arch Insurance Company _____ (Seal)
(Surety)

By: 
(Signature)

Brett Rosenhaus, Attorney-in-Fact
(Printed Name)

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON BLUE BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Mortgage, Note, Loan, Letter of Credit, Bank Deposit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:

That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

- Arthur Lawrence Colley of Charlotte, NC
- Brett Rosenhaus of Lake Worth, FL
- Charles D. Nielson, Charles J. Nielson and David R. Hoover of Miami Lakes, FL (EACH)
- F. Danny Gann, Edward T. Ward and Audria R. Ward of Atlanta, GA (EACH)
- John R. Neu and Kevin Wojtowicz of St. Petersburg, FL (EACH)
- Laura D. Mosholder of Orlando, FL

its true and lawful Attorney(s) in Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed:

Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding Ninety Million Dollars (\$90,000,000.00)

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on September 15, 2011, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on September 15, 2011:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on September 15, 2011, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company.

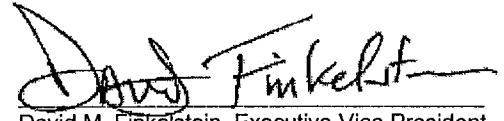
In Testimony Whereof, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this 8th day of January, 2016.

Attested and Certified

Arch Insurance Company


Patrick K. Nails, Secretary

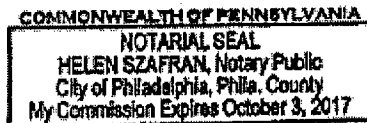




David M. Finkelstein, Executive Vice President

STATE OF PENNSYLVANIA SS

COUNTY OF PHILADELPHIA SS

I, Helen Szafran, a Notary Public, do hereby certify that Patrick K. Nails and David M. Finkelstein personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.




Helen Szafran, Notary Public
My commission expires 10/03/2017

CERTIFICATION

I, Patrick K. Nails, Secretary of the Arch Insurance Company, do hereby certify that the attached Power of Attorney dated January 8, 2016 on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said David M. Finkelstein, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this _____ day of _____, 20_____.


Patrick K. Nails, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:

Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102



ATTACHMENT - E

Work Authorization Schedule of Bid Items



Takeoff Worksheet

08/17/16

**PBC Water Utilities Department
162002 PBC WTP 11 Phase 2 Impr.**

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price	
1 General Conditions									
Temporary Facilities		LOT							
Container Rental		EA	12	200.00	2,400.00	6.00	1.1500	2,925.60	
Sanitary		MONTH	12	120.00	1,440.00	6.00	1.1500	1,755.36	
Job Site Office Supplies		LOT	1	500.00	500.00	6.00	1.1500	609.50	
Waste Hauling		LOT	8	600.00	4,800.00	6.00	1.1500	5,851.20	
General Conditions									
Submittal Labor		HR	40	71.08	2,843.20		1.2992	3,693.89	
O&M		HR	40	71.08	2,843.20		1.2992	3,693.89	
Progress Meeting		HR	100	87.79	8,779.00		1.2992	11,405.68	
Scheduling Labor		HR	120	71.08	8,529.60		1.2992	11,081.66	
Construction PM		HR	320	71.08	22,745.60		1.2992	29,551.08	
Construction Superintendent		HR	500	62.13	31,065.00		1.2992	40,359.65	
Purchasing & Subcontracts		HR	120	71.08	8,529.60		1.2992	11,081.66	
Safety		HR	20	71.08	1,421.60		1.2992	1,846.94	
Safety Equipment		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50	
Building Permits Application & Coordination		HR	20	71.08	1,421.60		1.2992	1,846.94	
Office Admin		HR	60	38.89	2,333.40		1.2992	3,031.55	
					Bid Item Totals:	101,151.80			130,563.10
2 Sitework									
Mobilization		LOT							
Construction PM		HR	8	71.08	568.64		1.2992	738.78	
Construction Superintendent		HR	8	62.13	497.04		1.2992	645.75	
3 man Crew		CR-D	2	962.88	1,925.76		1.2992	2,501.95	
Locates	Ground Hound	DAY	2	1,800.00	3,600.00		1.1000	3,960.00	
Survey (NOT TO EXCEED FEE)		LOT	1	5,000.00	5,000.00		1.1000	5,500.00	

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
Restoration								
Stone/Fill		LOT	1	4,000.00	4,000.00	6.00	1.1500	4,876.00
Seed & Sod		LOT	1	5,000.00	5,000.00	6.00	1.1500	6,095.00
Asphalt		LOT	1	4,000.00	4,000.00	6.00	1.1500	4,876.00
Installation (4-Man Crew)		CR-D	6	1,166.16	6,996.96		1.2992	9,090.45
Startup Crew (3-Man Crew)		CR-D	6	962.88	5,777.28		1.2992	7,505.84
Puch Out Crew (3-Man Crew)		CR-D	3	962.88	2,888.64		1.2992	3,752.92
Demobilization								
Construction PM		HR	8	71.08	568.64		1.2992	738.78
Construction Superintendent		HR	8	62.13	497.04		1.2992	,645.75
3 man Crew		CR-D	2	962.88	1,925.76		1.2992	2,501.95
Bid Item Totals:					43,245.76			53,429.17
3 Concrete								
Cleaning Pump								
Pump Pad								
Form & Materials		LOT	1	2,500.00	2,500.00	6.00	1.1500	3,047.50
Cast In Place Concrete		CY	7	180.00	1,260.00	6.00	1.1500	1,535.94
Concrete Pump		EA	1	700.00	700.00	6.00	1.1500	853.30
3 man Crew		CR-D	2	962.88	1,925.76		1.2992	2,501.95
Surge Tank Cradle Mods								
Form & Materials		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50
Cast In Place Concrete		CY	4	180.00	720.00	6.00	1.1500	877.68
Concrete Pump		LOT	1	700.00	700.00	6.00	1.1500	853.30
Installation (4 Man Crew)		CR-D	5	1,166.16	5,830.80		1.2992	7,575.38
Flowmeter Vault Pad								
Form & Materials		LOT	1	500.00	500.00	6.00	1.1500	609.50

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
Cast In Place Concrete		YD	4	180.00	720.00	6.00	1.1500	877.68
Concrete Pump		LOT	1	700.00	700.00	6.00	1.1500	853.30
Installation (3 Man Crew)		CR-D	3	962.88	2,888.64		1.2992	3,752.92
Lift Station Pad								
Form & Materials		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Cast In Place Concrete		YD	6	180.00	1,080.00	6.00	1.1500	1,316.52
Concrete Pump		LOT	1	700.00	700.00	6.00	1.1500	853.30
Installation (3 Man Crew)		CR-D	3	962.88	2,888.64		1.2992	3,752.92
Grout		LOT	1	500.00	500.00	6.00	1.1500	609.50
Installation (3 man Crew)		CR-D	2	962.88	1,925.76		1.2992	2,501.95
Testing Services		LOT	1	2,500.00	2,500.00		1.1000	2,750.00
Chlorine Containment Pad Prep								
Concrete Cutting		LOT	2	1,200.00	2,400.00		1.1000	2,640.00
Prep Concrete / Patch Holes (3-Man Crew)		CR-D	2	962.88	1,925.76		1.2992	2,501.95
Grout		LOT	1	500.00	500.00	6.00	1.1500	609.50
Sump Grating		EA	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Bid Item Totals:					36,365.36			45,140.59
5 Misc Metals								
SS Unistrut		LOT	10	120.00	1,200.00	6.00	1.1500	1,462.80
SS Unistrut Hardware		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50
SS Unistrut Pipe Clamp		LOT	1	2,000.00	2,000.00	6.00	1.1500	2,438.00
Misc Metals & Fasteners		LOT	1	3,000.00	3,000.00	6.00	1.1500	3,657.00
FRP Unistrut		LOT	8	120.00	960.00	6.00	1.1500	1,170.24
FRP Unistrut Hardware		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
FRP Unistrut Pipe Clamp		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Installation (3-Man Crew)		CR-D	3	962.88	2,888.64		1.2992	3,752.92
Bid Item Totals:					13,548.64			16,747.46

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
9 Finishes								
Coatings (Walls, PVC & Fiberglass Piping)		LOT	1	4,000.00	4,000.00	6.00	1.1500	4,876.00
Installation (3 man Crew)		CR-D	10	962.88	9,628.80		1.2992	12,509.74
Signage		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50
Installation (3 man Crew)		CR-D	1	962.88	962.88		1.2992	1,250.97
Chlorine Containment								
Chemical Coating	Coastal Construction	LOT	1	19,096.00	19,096.00	6.00	1.1500	23,278.02
Misc Application Material		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Sandblasting & Pressure Wash (3-Man Crew)		CR-D	4	962.88	3,851.52		1.2992	5,003.89
Installation (3-Man Crew)		CR-D	3	962.88	2,888.64		1.2992	3,752.92
Coating Inspection	Corrosion Probe	LOT	1	7,500.00	7,500.00		1.1000	8,250.00
					Bid Item Totals:	50,427.84		61,969.04
13 I & C								
Sunshade, Surge Protector & Accessories		EA	4	1,400.00	5,600.00	6.00	1.1500	6,826.40
PLC Programming	Hillers	LOT	1	39,261.60	39,261.60		1.1000	43,187.76
I&C	CC Controls	LOT	1	12,800.00	12,800.00	6.00	1.1500	15,603.20
					Bid Item Totals:	57,661.60		65,617.36
15 Mechanical								
Replacement of DIW Surge Tank		LOT						
Remove Existing Tank & Instrumentation (4 Man C		CR-D	2	1,166.16	2,332.32		1.2992	3,030.15
Crane - 60 Ton		Hr	8	180.00	1,440.00	6.00	1.1500	1,755.36
Tank Disposal (3 man Crew)		CR-D	1	962.88	962.88		1.2992	1,250.97
New Surge Tank with DP Meter	Charlatte America	LOT	1	99,687.00	99,687.00	6.00	1.1500	121,518.45
SCH 80 PVC Pipe & Fittings		LOT	1	800.00	800.00	6.00	1.1500	975.20
Tank Install (4 Man Crew)		CR-D	2	1,166.16	2,332.32		1.2992	3,030.15
Install Instruments (3 Man Crew)		CR-D	1	962.88	962.88		1.2992	1,250.97
Crane - 60 Ton		Hr	8	180.00	1,440.00	6.00	1.1500	1,755.36

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
Replace 12" Valve & piping 12" Pipe, Fittings and Valve	McDade	LOT	1	4,007.54	4,007.54	6.00	1.1500	4,885.19
Demo Existing Valve & Piping (4 Man Crew)		CR-D	2	1,166.16	2,332.32		1.2992	3,030.15
Installation (4 Man Crew)		CR-D	2	1,166.16	2,332.32		1.2992	3,030.15
Replace 3" Drain valve and piping 3" SS Ball Valve and Fittings		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Solenoid Valve & Pressure Regulator		LOT	1	2,000.00	2,000.00	6.00	1.1500	2,438.00
Installation (3 man Crew)		CR-D	2	962.88	1,925.76		1.2992	2,501.95
DIW Annulus Tank								
Level Transmitter/Gauge		EA	1	3,464.00	3,464.00	6.00	1.1500	4,222.62
SS Fittings & Ball Valves		LOT	1	600.00	600.00	6.00	1.1500	731.40
Temporary Tank & Accessories		LOT	1	2,000.00	2,000.00	6.00	1.1500	2,438.00
Solenoid Valve & Pressure Regulator		LOT	1	2,000.00	2,000.00	6.00	1.1500	2,438.00
Drain Baracor Tank (4 Man Crew)		CR-D	1	1,166.16	1,166.16		1.2992	1,515.08
Refill Baracor Tank (4 Man Crew)		CR-D	1	1,166.16	1,166.16		1.2992	1,515.08
Remove Level and Pressure Gauges (3 man Crew)		CR-D	1	962.88	962.88		1.2992	1,250.97
Installation (3 man Crew)		CR-D	2	962.88	1,925.76		1.2992	2,501.95
Degasifier Cleaning System								
Diesel Powered Engine Driven Portable Pump on a Klein Pump		EA	1	49,718.34	49,718.34	6.00	1.1500	60,606.66
Install Pump (4 Man Crew)		CR-D	1	1,166.16	1,166.16		1.2992	1,515.08
Fuel (First Time Fill & Testing)		GAL	200	4.00	800.00	6.00	1.1500	975.20
FRP Pipe & Fittings	McDade	LOT	1	81,495.29	81,495.29	6.00	1.1500	99,342.76
10" PVC BFV		EA	2	1,995.00	3,990.00	6.00	1.1500	4,863.81
8" PVC BFV		EA	3	1,502.00	4,506.00	6.00	1.1500	5,492.81
6" PVC BFV		EA	3	899.00	2,697.00	6.00	1.1500	3,287.64
PVC Check Valve		EA	1	1,995.00	1,995.00	6.00	1.1500	2,431.91
SCH 80 PVC Pipe & Fittings		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Install Piping & Supports (4 Man Crew)		CR-D	20	1,166.16	23,323.20		1.2992	30,301.50
Degasifier Modifications (JAWS)	JAWS	LOT	1	36,697.20	36,697.20		1.1000	40,366.92

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
Automation of Ammonia System								
Demo Existing System (3 man Crew)		CR-D	5	962.88	4,814.40		1.2992	6,254.87
New Ammoniators (3 Units)	Trinova	LOT	1	100,119.13	100,119.13	6.00	1.1500	122,045.22
1/2" SS Tubing, pressure relief valve and Fittings		LOT	1	3,000.00	3,000.00	6.00	1.1500	3,657.00
SCH 80 PVC/CPVC Pipe & Ftgs		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Installation (3 man Crew)		CR-D	7	962.88	6,740.16		1.2992	8,756.82
Sodium Hypochlorite Manual Dosing System								
Chlorine Pump Skid	Hudson	EA	2	22,001.00	44,002.00	6.00	1.1500	53,638.44
Mag Flowmeter	Hudson	EA	3	6,855.00	20,565.00	6.00	1.1500	25,068.74
Start up/Testing		LOT	1	2,500.00	2,500.00	6.00	1.1500	3,047.50
Pump Supports		EA	2	1,500.00	3,000.00	6.00	1.1500	3,657.00
SCH 80 PVC Pipe & Fittings		LOT	1	3,500.00	3,500.00	6.00	1.1500	4,266.50
Pressure Sustaining Valve		EA	4	1,000.00	4,000.00	6.00	1.1500	4,876.00
PVC Ball Valves		LOT	1	2,000.00	2,000.00	6.00	1.1500	2,438.00
Demo Existing System(4 Man Crew)		CR-D	3	1,166.16	3,498.48		1.2992	4,545.23
Install New Pump & Piping (4 Man Crew)		CR-D	8	1,166.16	9,329.28		1.2992	12,120.60
Floor Coatings		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50
Misc Application Material		LOT	1	200.00	200.00	6.00	1.1500	243.80
Coating Install (3 man Crew)		CR-D	2	962.88	1,925.76		1.2992	2,501.95
Precast Pull Box	Oldcastle	EA	3	3,939.00	11,817.00	6.00	1.1500	14,404.92
Install Precast pull Box (4 Man Crew)		CR-D	6	1,166.16	6,996.96		1.2992	9,090.45
Non Metallic Enclosure		EA	3	700.00	2,100.00	6.00	1.1500	2,559.90
HDPE Pipe	McDade	LF	1400	3.50	4,900.00	6.00	1.1500	5,973.10
HDPE Fittings		LOT	1	500.00	500.00	6.00	1.1500	609.50
PTFE Tubing	McDade	LF	2800	9.00	25,200.00	6.00	1.1500	30,718.80
Tubing Fittings		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
PVC Check Valve		LOT	3	500.00	1,500.00	6.00	1.1500	1,828.50
Saddle & Corp Stop		LOT	1	400.00	400.00	6.00	1.1500	487.60
PVC Pipe, Fittings & Valve		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50
Installation (4 Man Crew)		CR-D	15	1,166.16	17,492.40		1.2992	22,726.13

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
Demo OSG Piping (4 Man Crew)		CR-D	4	1,166.16	4,664.64		1.2992	6,060.30
SCH 80 PVC/CPVC Pipe & Ftgs		LOT	1	500.00	500.00	6.00	1.1500	609.50
Replace 24"Ductile Iron Pipe & Flow Meter with H Concrete Cutting (4 Man Crew)		CR-D	5	1,614.24	8,071.20		1.2992	10,486.10
SS Pipe & Ftgs	McDade	LOT	1	49,527.00	49,527.00	6.00	1.1500	60,373.41
Temporary Pipe Support Systems		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
Pipe Bollards		EA	4	400.00	1,600.00	6.00	1.1500	1,950.40
Stone/Fill		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50
HDPE Pipe & Fusion	HDPE, Inc.	LOT	1	16,048.12	16,048.12	6.00	1.1500	19,562.66
Excavate & Prep Area (4 Man Crew)		CR-D	10	1,614.24	16,142.40		1.2992	20,972.21
Install HDPE Underground Piping (5 Man Crew)		CR-D	2	1,614.24	3,228.48		1.2992	4,194.44
Install Above Ground SS Piping (5 Man Crew)		CR-D	2	1,614.24	3,228.48		1.2992	4,194.44
Core drill existing Vault Footing (3 Man Crew)		CR-D	1	962.88	962.88		1.2992	1,250.97
Crane - 40 Ton		Hr	8	150.00	1,200.00	6.00	1.1500	1,462.80
Replacement of 4" DIP Discharge Piping for Plant L SS Pipe, Fittings, Valves and Supports	McDade	LOT	1	20,170.73	20,170.73	6.00	1.1500	24,588.12
HDPE Fusion		LOT	1	2,400.00	2,400.00		1.1000	2,640.00
Concrete Cutting and Removal (4 Man Crew)		CR-D	1	1,166.16	1,166.16		1.2992	1,515.08
Remove 4" Underground DI Piping (4 Man Crew)		CR-D	2	1,166.16	2,332.32		1.2992	3,030.15
Replace 4" DI Aboveground Piping with SS (4 Man		CR-D	5	1,166.16	5,830.80		1.2992	7,575.38
Replacement of Clearwell Hatches and Removal of New Clearwell Hatches		EA	4	2,000.00	8,000.00	6.00	1.1500	9,752.00
Installation (3 man Crew)		CR-D	4	962.88	3,851.52		1.2992	5,003.89
Remove Interior Aluminum Ladders (4 Man Crew)		CR-D	2	1,166.16	2,332.32		1.2992	3,030.15
Coatings		LOT	1	500.00	500.00	6.00	1.1500	609.50
Misc Application Material		LOT	1	200.00	200.00	6.00	1.1500	243.80
Installation of Two Turbidity Meters for Clearwell Turbidity Meters for Clearwell	Hach	EA	2	3,183.66	6,367.32	6.00	1.1500	7,761.76

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
SS Tube, Fittings & Valves		LOT	1	1,500.00	1,500.00	6.00	1.1500	1,828.50
Turbidity Rack		LOT	1	2,000.00	2,000.00	6.00	1.1500	2,438.00
Installation		CR-D	4	962.88	3,851.52		1.2992	5,003.89
12" DI Overflow Hatches Replacement								
12" PVC 90 & Bug Screen		EA	4	1,000.00	4,000.00	6.00	1.1500	4,876.00
Installation (3 Man Crew)		CR-D	2	962.88	1,925.76		1.2992	2,501.95
Ultrasonic Level Transmitter		EA	1	2,174.78	2,174.78	6.00	1.1500	2,651.06
SCH 80 PVC/CPVC Pipe & Ftgs		LOT	1	500.00	500.00	6.00	1.1500	609.50
Installation (3 Man Crew)		CR-D	1	962.88	962.88		1.2992	1,250.97
Concrete Core		LOT	1	500.00	500.00	6.00	1.1500	609.50
Chlorine Tank								
Demo Existing Equipment (3 man Crew)		CR-D	4	962.88	3,851.52		1.2992	5,003.89
Temporary Tank Setup (3 man Crew)		CR-D	4	962.88	3,851.52		1.2992	5,003.89
FRP Tank	Justin Tanks	EA	1	40,977.00	40,977.00	6.00	1.1500	49,950.96
FRP Tank Inspection (NOT TO EXCEED FEE)		LOT	1	10,000.00	10,000.00		1.0000	10,000.00
Ultrasonic Level Transmitter		EA	1	2,174.78	2,174.78	6.00	1.1500	2,651.06
Sure-Site Level Gauge	Gems	EA	1	7,823.00	7,823.00	6.00	1.1500	9,536.24
SCH 80 PVC Pipe & Fittings		LOT	1	4,000.00	4,000.00	6.00	1.1500	4,876.00
Flange Kits & Misc Materials		LOT	1	1,000.00	1,000.00	6.00	1.1500	1,219.00
2" PVC Ball Valve		EA	10	207.00	2,070.00	6.00	1.1500	2,523.33
2" Wye Strainer		EA	2	211.00	422.00	6.00	1.1500	514.42
Tank & Piping Install (4-Man Crew)		CR-D	10	1,166.16	11,661.60		1.2992	15,150.75
Bid Item Totals:					895,399.79			1,098,412.48
16 Electrical								
Electrical Sub		LOT	1	44,500.00	44,500.00		1.1000	48,950.00
Bid Item Totals:					44,500.00			48,950.00

Takeoff Worksheet

08/17/16

Continued...

Description	Quote/Vendor	Unit	Quantity	Cost	Ext. Cost	Tax (%)	Markup*	Ext. Price
18 Rental Equipment								
10,000lb Traversing Fork Lift	Neff Rental	MO	7	4,850.00	33,950.00	6.00	1.1500	41,385.05
Backhoe w/ forks	Neff Rental	MO	9	2,400.00	21,600.00	6.00	1.1500	26,330.40
Excavator	Neff Rental	LOT	4	4,800.00	19,200.00	6.00	1.1500	23,404.80
Art. Manlift	Neff Rental	MO	2	5,000.00	10,000.00	6.00	1.1500	12,190.00
Scissor Lift		Month	2	625.00	1,250.00	6.00	1.1500	1,523.75
Light Plant		MO	1	885.00	885.00	6.00	1.1500	1,078.82
Dewatering		LOT	1	12,000.00	12,000.00	6.00	1.1500	14,628.00
Trench Box/Shoring		LOT	1	10,000.00	10,000.00	6.00	1.1500	12,190.00
Sand Blasting (Chlorine Containment Area)		LOT	1	2,000.00	2,000.00	6.00	1.1500	2,438.00
Pressure Washer		WEEK	1	575.00	575.00	6.00	1.1500	700.93
Equipment Fuel		GAL	5000	4.00	20,000.00	6.00	1.1500	24,380.00
Misc Tools		LOT	1	6,000.00	6,000.00	6.00	1.1500	7,314.00
					Bid Item Totals:	137,460.00		167,563.75
50 Engineering/Record Drawing								
Engineering		LOT	1	229,073.69	229,073.69		1.0000	229,073.69
					Bid Item Totals:	229,073.69		229,073.69
60 Bonds, Insurance, & Certifications								
Bonds & Certifications		LOT	1	32,468.31	32,468.31		1.1500	37,338.56
Builders Risk Insurance		LOT	1	9,408.52	9,408.52		1.1500	10,819.80
					Bid Item Totals:	41,876.83		48,158.36
					Grand Totals:	1,650,711.31		1,965,625.00

Note: CR-D=8Hrs

*Contract Markups Per Master Agreement:

Materials = 1.15, Subcontractors = 1.1, Labor at Burden = 1.2992

ATTACHMENT - E
WA-7: WTP 11 - Phase II WTP Improvements
Engineering Fee Summary

Task	Task Description	E6	E5	E4	E3	T4	OS	Total Labor	*Sub-Consultant Services	Sub-Consultant
		\$77.33	\$65.24	\$57.37	\$42.97	\$41.28	\$35.43			
1	Project Coordination / Set up									
	Project Coordination / Set up	16	8	4			8			
	Meet w/ staff to review project/collect info	8		8						
	Electrical/I&C	4			8		2		\$ 929.88	HEE
	Prepare design/construction schedule	2			6					
	Subtotal Task 1	30	8	12	14	0	10	\$ 4,486.14	\$ 929.88	
2	PBCHD Permitting									
	Prepare Construction Application	4					2			
	Prepare & Submit TM for application	24			4	30	2			
	Subtotal Task 2	28	0	0	4	30	4	\$ 3,717.24	\$ -	
3	60% Design									
	Project Mangement/Coordination	12					8			
	Mechanical Design (26 sheets)	90		40	12	234	2			
	Electrical/I&C Design (21 Sheets)	2			12	4	1		\$ 10,377.92	HEE
	Equipment Selection	12		8			2			
	Review meeting and address comments	12		8						
	Update schedule				4					
	Prepare construction estimate			8	6					
	Subtotal Task 3	128	0	64	34	238	13	\$ 25,316.13	\$ 10,377.92	
4	90% Design									
	Project Mangement/Coordination	8					8			
	Structural Design	1					1		\$ 4,720.00	WGI
	Mechanical Design	44		24	8	104	2			
	Electrical/I&C Design	2			8	4	1		\$ 8,357.44	HEE
	Equipment Selection	4		8			2			
	Update construction estimate			6	2					
	Review meeting and address comments	8		8						
	Subtotal Task 4	67	0	46	18	108	14	\$ 13,547.85	\$ 13,077.44	
5	100% Design									
	Project Mangement/Coordination	2		4			4			
	Mechanical Design	16		8		39	2			
	Electrical/I&C Design	1			6	4	1		\$ 2,284.52	HEE
	Equipment Selection	2		4			4			
	Update schedule			2	2					
	Update construction estimate			4						
	QC/QA	4	4							
	Subtotal Task 5	25	4	22	8	43	11	\$ 5,964.88	\$ 2,284.52	
6	Services During Construction (SDC)									
	Project Mangement/Coordination	16					8			
	Site Visits	24			12					
	Submittals	20			10		2			
	Electrical/I&C	2			12		1		\$ 11,032.28	HEE
	Record Drawings	20				30	2		\$ 929.88	HEE
	Permit Closeout	8			6		2			
	Subtotal Task 6	90	0	0	40	30	15	\$ 10,448.35	\$ 11,962.16	
	Labor Hours	368	12	144	118	449	67			
	Labor Costs	\$28,457.44	\$782.88	\$8,261.28	\$5,070.46	\$18,534.72	\$2,373.81	\$63,480.59		
	Labor Multiplier	3.00	3.00	3.00	3.00	3.00	3.00	3.00		
	Labor Total	\$85,372.32	\$2,348.64	\$24,783.84	\$15,211.38	\$55,604.16	\$7,121.43	\$190,441.77		
	Subconsultants									
	HEE							\$33,911.92		
	WGI							\$ 4,720.00		
	Subconsultant Total								\$ 38,631.92	
	TOTAL ENGINEERING FEE									\$229,073.69

Subconsultants: Hillers Electrical Engineering (HEE), Wantman Group Inc (WGI)

ATTACHMENT - F

SBE Schedule 1 & Schedule 2

ATTACHMENT - F

SCHEDULE 1

LIST OF PROPOSED SBE-M/WBE PRIME/SUBCONTRACTORS

PROJECT NAME: Water Treatment Plant No. 11 - Phase II Improvements

PROJECT No: WUD 16-058

NAME OF PRIME BIDDER Globaltech, Inc.

ADDRESS: 6001 Broken Sound Parkway NW, Suite 610

CONTACT PERSON: Bernard P. Gandy, President

PHONE NO.: 561-997-6433 FAX NO.: 561-997-5811

BID OPENING DATE: N/A

DEPARTMENT: N/A

PLEASE IDENTIFY ALL APPLICABLE CATEGORIES

Name, Address and Telephone Number of Minority Contractor	(Check one or both Categories)		Dollar Amount				
	Minority Business	Small Business	Black	Hispanic	Women	Caucasian	Other (Please Specify)
Globaltech, Inc., (561) 997-6433 6001 Broken Sound Parkway NW, Suite 610, Boca Raton, FL 33487	<input type="checkbox"/>	<input checked="" type="checkbox"/>	\$ -	\$ -	\$ -	\$ 1,783,134.28	\$ -
Powerline of South Florida, Inc. 711 Commerce Way, Suite #6 Jupiter, FL 33458 (561) 575-4270	<input type="checkbox"/>	<input checked="" type="checkbox"/>	\$ -	\$ -	\$ -	\$ 44,500.00	\$ -
Hillers Electrical Engineers, Inc. 23257 State Road 7, Suite 100 Boca Raon, 33428 (561) 451-9165	<input type="checkbox"/>	<input checked="" type="checkbox"/>	\$ -	\$ 73,173.52	\$ -	\$ -	\$ -
Ground Hound Detection Services, Inc. 2930 NW Commerce Park Dr. #1 Boynton Bch., FL 33426 (561) 737-9800	<input type="checkbox"/>	<input checked="" type="checkbox"/>	\$ -	\$ -	\$ -	\$ 3,600.00	\$ -
	<input type="checkbox"/>	<input type="checkbox"/>	\$ -	\$ -	\$ -		\$ -
PRIME CONTRACTOR TO COMPLETE:	<input type="checkbox"/>	<input type="checkbox"/>	\$ -	\$ 73,173.52	\$ -	\$ 1,831,234.28	\$ -

BID PRICE: \$ 1,965,625.00

Total Value of SBE Participation: \$ 1,904,407.80

- NOTE:
1. The amount listed on this form for a Subcontractor must be supported by price or percentage included on Schedule 2 or a proposal from each Subcontractor listed in order to be counted toward goal attainment.
 2. Firms may be certified by Palm Beach County as an SBE and/or an M/WBE. If firms are certified as both an SBE and M/WBE, please indicate the dollar amount under the appropriate category.
 3. M/WBE information is being collected for tracking purposes only.

ATTACHMENT - F

SCHEDULE 2

LETTER OF INTENT TO PERFORM AS AN SBE OR M/WBE SUBCONTRACTOR

PROJECT NO. WUD 16-058

PROJECT NAME Water Treatment Plant No. 11
Phase II WTP Improvements

TO: Globaltech, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a(n) – (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise _____

Black _____ Hispanic _____ Women _____ Caucasian Other (Please Specify) _____

Date of Palm Beach County Certification: November 24, 2015

The undersigned is prepared to perform the following described work in connection with the above project
(Specify in detail, particular work items or parts thereof to be performed):

Line Item/Lot No.	Item Description	Qty / Units	Unit Price	Total Price
1	Engineering	1	N/A	\$ 179,993.42
2	Services During Construction	1	N/A	\$ 10,448.35
3	Mechanical Construction	1	N/A	\$ 1,534,534.15
4	Allowance (FRP Tank Insp.)	1	N/A	\$ 10,000.00
5	Bonds & Certifications	1	N/A	\$ 48,158.36

at the following price:

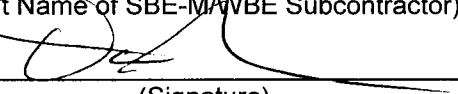
\$ 1,783,134.28 (one million seven hundred eighty-three thousand one hundred thirty-four dollars and twenty-eight cents) (Subcontractor's quote)

and will enter into a formal agreement for work with you conditioned upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this subcontract to a non-certified SBE subcontractor, the amount of any such subcontract must be stated: NONE.

The undersigned subcontractor understands that the provision of this form to prime bidder does not prevent subcontractor from providing quotations to other bidders

Globaltech, Inc.
(Print Name of SBE-M/WBE Subcontractor)

By: 
(Signature)

David A. Schuman P.E. / Secretary
(Print name/title of person executing on behalf of SBE-M/WBE Subcontractor)

Date: August 15, 2016

ATTACHMENT - F

SCHEDULE 2

LETTER OF INTENT TO PERFORM AS AN SBE OR M/WBE SUBCONTRACTOR

PROJECT NO. WUD 16-058

PROJECT NAME Water Treatment Plant No. 11 – Phase II WTP Improvements

TO: Globaltech, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a(n) – (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise _____

Black _____ Hispanic Women _____ Caucasian _____ Other (Please Specify) _____

Date of Palm Beach County Certification: October 17, 2015

The undersigned is prepared to perform the following described work in connection with the above project
(Specify in detail, particular work items or parts thereof to be performed):

Line Item/Lot No.	Item Description	Qty / Units	Unit Price	Total Price
1	Engineering	1	N/A	\$ 21,949.76
2	Services During Construction	1	N/A	\$ 11,962.18
3	PLC Programming	1	N/A	\$ 39,261.60

at the following price:

\$73,173.52 (Seventy three thousand one hundred seventy-three dollars and fifty-two cents)
(Subcontractor's quote)

and will enter into a formal agreement for work with you conditioned upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this subcontract to a non-certified SBE subcontractor, the amount of any such subcontract must be stated: NONE.

The undersigned subcontractor understands that the provision of this form to prime bidder does not prevent subcontractor from providing quotations to other bidders

Hillers Electrical Engineering, Inc.
(Print Name of SBE-M/WBE Subcontractor)

By: [Signature]
(Signature)

Paul Hillers, P.E. / President
(Print name/title of person executing on behalf of SBE-M/WBE Subcontractor)

Date: August 5, 2016

ATTACHMENT - F

SCHEDULE 2

LETTER OF INTENT TO PERFORM AS AN SBE OR M/WBE SUBCONTRACTOR

PROJECT NO. WUD 16-058

PROJECT NAME Water Treatment Plant No. 11 – Phase II WTP Improvements

TO: Globaltech, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a(n) – (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise _____

Black _____ Hispanic _____ Women _____ Caucasian Other (Please Specify) _____

Date of Palm Beach County Certification: August 18, 2014

The undersigned is prepared to perform the following described work in connection with the above project (Specify in detail, particular work items or parts thereof to be performed):

Line Item/Lot No.	Item Description	Qty / Units	Unit Price	Total Price
1	Utility Location Services	1	N/A	3,600.00

at the following price:

\$ 3,600.00 (Three thousand six hundred dollars and no cents)
(Subcontractor's quote)

and will enter into a formal agreement for work with you conditioned upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this subcontract to a non-certified SBE subcontractor, the amount of any such subcontract must be stated: NONE.

The undersigned subcontractor understands that the provision of this form to prime bidder does not prevent subcontractor from providing quotations to other bidders

Ground Hound Detection Services, Inc.
(Print Name of SBE-M/WBE Subcontractor)

By: [Signature]
(Signature)

Sean Halsey
(Print name/title of person executing on behalf of SBE-M/WBE Subcontractor)

Date: August 5, 2016

ATTACHMENT - F

SCHEDULE 2

LETTER OF INTENT TO PERFORM AS AN SBE OR M/WBE SUBCONTRACTOR

PROJECT NO. WUD 16-058

PROJECT NAME - Water Treatment Plant No. 11 - Phase II WTP Improvements

TO: _____
Globaltech, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a(n) – (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise _____

Black _____ Hispanic _____ Women _____ Caucasian Other (Please Specify) _____

Date of Palm Beach County Certification: August 6, 2014

The undersigned is prepared to perform the following described work in connection with the above project
(Specify in detail, particular work items or parts thereof to be performed):

Line Item/Lot No.	Item Description	Qty / Units	Unit Price	Total Price
1	Electrical Subcontracting	1	N/A	\$ 44,500.00

at the following price:

\$ 44,500.00 (Forty-four thousand five hundred dollars and no cents)
(Subcontractor's quote)

and will enter into a formal agreement for work with you conditioned upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this subcontract to a non-certified SBE subcontractor, the amount of any such subcontract must be stated: NONE.

The undersigned subcontractor understands that the provision of this form to prime bidder does not prevent subcontractor from providing quotations to other bidders

Powerline of South Florida, Inc.
(Print Name of SBE-M/WBE Subcontractor)

By: _____
(Signature)

Tomas Laessig / Vice President
(Print name/title of person executing on behalf of SBE-M/WBE Subcontractor)

Date: August 5, 2016

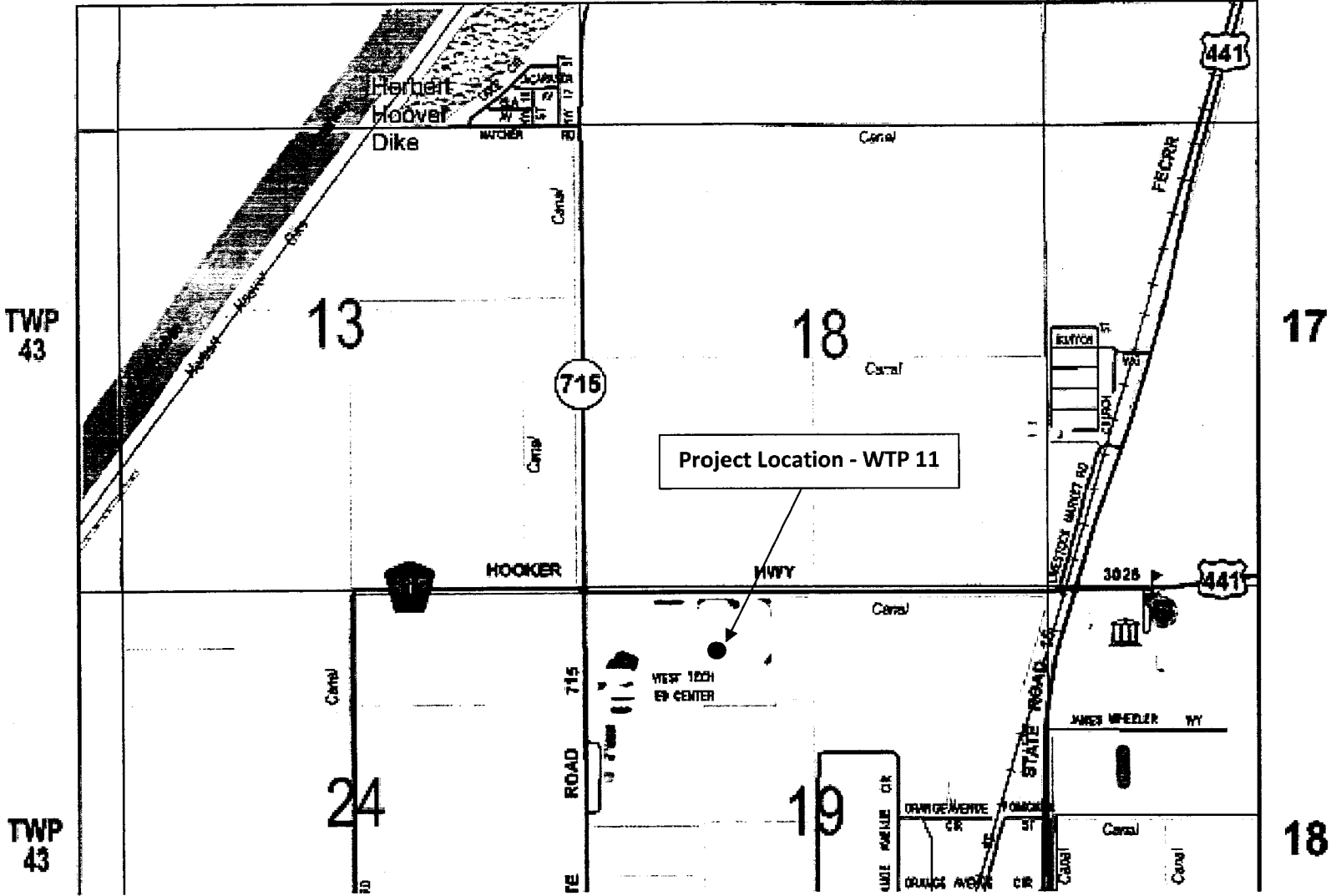
ATTACHMENT - H

AUTHORIZATION STATUS REPORT OPTIMIZATION AND IMPROVEMENTS DESIGN-BUILD CONTRACT

SUMMARY of SBE / M/WBE TRACKING

WUD 16-058 WTP No. 11 Phase II WTP Improvements

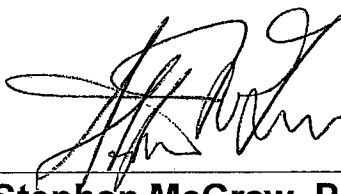
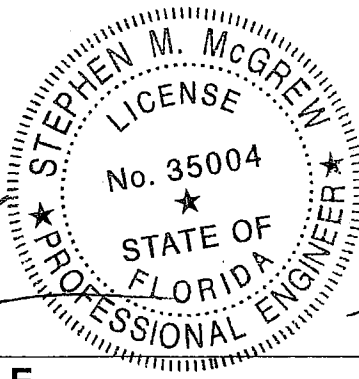
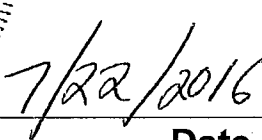
	Total
Current Proposal	
Value of Consultant Service Authorization	\$0.00
Value of Work Authorization	\$1,965,625.00
Value of CSA and WA	\$1,965,625.00
Value of SBE Minority Letter of Intent	\$1,904,407.80
Actual Percentages	96.88%
Signed / Approved Authorizations	
Total Value of Approved Consultant Service Authorization	\$0.00
Total Value of Approved Work Authorization	\$4,773,516.28
Total Value of CSAs and WAs	\$4,773,516.28
Total Value of SBE Signed Subcontracts	\$4,607,907.28
Actual Percentages	96.53%
Signed Authorizations Plus Current Proposal	
Total Value of Approved CSAs Plus Current CSA Proposal	\$0.00
Total Value of Approved WAs Plus Current WA Proposal	\$6,739,141.28
Total Value of Approved and Proposed CSAs and WAs	\$6,739,141.28
Total Value of SBE Subcontracts and Letters of Intent	\$6,512,315.08
Actual Percentages	96.63%
GOAL	75%



ATTACHMENT - J

Design – Build Criteria Report

**Design Build Criteria
Water Treatment Plant No. 11
Phase II WTP Improvements
GL01 – Project No. WUD 16-058**

**Stephen McGrew, P.E.,
Palm Beach County Water Utilities
8100 Forest Hill Blvd.
West Palm Beach, FL 33413**

Date

**Design-Build Criteria
Water Treatment Plant No. 11
Phase II WTP Improvements
Project No. WUD 16-058**

PART 1 GENERAL REQUIREMENTS

1.1 Overview Information:

- 1.1.1. Location: Water Treatment Plant No. 11 (WTP 11), 39700 Hooker Highway, Belle Glade, FL 33430-5934, PCN 00-37-43-19-00-000-3060.
- 1.1.2. Survey information concerning the site: Owner will provide recent survey from WTP 11 Master Record Drawings (WUD 14-102). Refer to Section 1.5 Site elevations, Lines, and Grades for Design-Build Entity requirements.
- 1.1.3. Interior space requirements: This project is related to equipment in existing buildings.
- 1.1.4. Material quality standards: Adhere to current version of Palm Beach County Water Utility Department (PBCWUD) Minimum Design Standards and Approved Material List.
- 1.1.5. Schematic layouts: none
- 1.1.6. Cost or budget estimates: \$1,900,000.
- 1.1.7. Design and construction milestones:
 - 1.1.7.1. 60% Design Completion 120 days after receipt of executed Work Authorization and notice to proceed with design. Procurement of large lead time equipment shall start after 60% design.
 - 1.1.7.2. 100% Design Completion 180 days after receipt of executed Work Authorization and notice to proceed with design.
 - 1.1.7.3. Substantial Construction Completion 455 Calendar Days after receipt of executed Work Authorization and notice to proceed with construction.

- 1.1.7.4. Final Construction Completion 60 Calendar Days after Substantial Construction Completion.
- 1.1.7.5. Liquidated damages for design and construction will apply as follows:
 - 1) \$500 per day past substantial completion date.
 - 2) \$250 per day past final completion date.
- 1.1.8. The following items must be complete (at a minimum) to achieve substantial completion:
 - 1.1.8.1. Existing systems in place and operating as intended.
 - 1.1.8.2. Commissioning and Testing of all new equipment completed.
 - 1.1.8.3. O&M Manuals have been delivered to the Owner and equipment training is completed.
 - 1.1.8.4. PLC programming work complete (PBC WUD will perform HMI SCADA screens on IFIX).
 - 1.1.8.5. Release of applicable permits required to operate the facility.
- 1.1.9. Site development requirements: Not Applicable.
- 1.1.10. Provisions for utilities: Refer to Sections 1.3 Utilities and 1.7 Underground Utilities for Design-Build Entity requirements.
- 1.1.11. Storm water retention and disposal: Provide siltation barriers for all existing storm drainage catch basins impacted by construction activities.
- 1.1.12. Parking requirements: Only current Palm Beach County security badge holders can park inside the plant gate. Do not disrupt traffic flow for chemical deliveries. Project material deliveries shall be between 7:00 AM to 3:00 PM Monday through Friday excluding public holidays.
- 1.1.13. Staging Area: Staging areas will be along the roadway at WTP11. The staging area may be shared with other construction contractors performing work for the Owner at this facility.
- 1.1.14. Coordination: Design-Build Entity will need to coordinate its work activities with the Owner and other construction contractors performing work activities at this facility.
- 1.1.15. A shutdown plan, developed in conjunction with the OWNER must be prepared by the Design-Build Entity for any planned plant or process shutdowns shall be submitted to the Owner for review and approval at least 30 days prior to commencing any of these work activities.

1.1.16. Reference Documents: The following documents shall be used to develop signed and sealed Construction Documents.

- 1.1.14.1. Palm Beach County Water Utility Department (PBCWUD) General Electrical Design Requirements
- 1.1.14.2. Palm Beach County Water Utility Department (PBCWUD) Minimum Design Standards
- 1.1.14.3. Palm Beach County Water Utility Department (PBCWUD) Approved Materials List

1.2 Summary of Work

1.2.1 The proposed work to be performed by the Design-Build Entity generally includes furnishing and installing materials, labor, equipment and expertise including all necessary tools, supervision, and services required to design, permit, purchase, demolish, construct, train, test, and startup the proposed work to: furnish and install a degasifier cleaning system on the existing two (2) degasifier towers complete with temporary piping and portable pump, furnish and install deep inject well surge tank to replace the existing surge tank, furnish and install a replacement fiberglass 10,000 gallon bulk sodium hypochlorite storage tank, furnish and install protective coating on interior of sodium hypochlorite storage containment area, furnish and install instrumentation and automate air filling of annulus tank, furnish and install above grade ductile iron pipe and valves at plant process lift station, furnish and install new access hatches (excluding frames) at clearwell, furnish and install two (2) turbidity meters on either side of the clearwell and a redundant ultrasonic level sensor in the clearwell common pump bay, furnish and install new clearwell overflows (excluding wall pipe), furnish and install process piping around existing permeate flow meter, furnish and install automated ammonia dosing system to replace the existing ammonia dosing system, furnish and install automated twelve and one half percent (12.5%) sodium hypochlorite dosing system to replace the existing one (1%) sodium hypochlorite dosing system. The Design-Build Criteria for the proposed work to be performed is further described below.

1.3 Design-Build Criteria

The following design criteria shall be used:

1.3.1. Degasifier Cleaning System

- a. The Design-Build Entity shall furnish and install, commission, start-up and place into service a cleaning system for the existing two (2)

degasifiers, complete and operable. Cleaning of the two degasifiers is required multiple times throughout the year and the existing infrastructure is incapable of providing adequate flow to effectively clean each of the two degasifiers. The cleaning system shall be appropriately sized provide a water flow rate during cleaning operations of no less than 15 gpm per square foot of degasifier cross sectional area equating to a flow rate of 1,700 gpm. The degasifier bottom section shall be used as the cleaning solution storage tank and pump suction tank, as the cleaning operation requires recirculation of solution for 6 to 24 hours depending on the type and quantity of fouling material to be cleaned. Piping currently in place for cleaning is to be replaced with eight inch piping in order to handle the recommended cleaning flow rates. This will include a new penetration through each degasifier wall to allow the cleaning solution to enter the degasifier distribution trough downstream of the degasifier isolation valve. The eight inch pipe shall extend the length of the degasifiers and terminate at the base. A new ten inch penetration and piping is to be installed in the degasifier wall near the bottom of the unit (sump) to act as the cleaning pump suction. An internal suction assembly complete with anti-vortex device is required to provide the ability to drain the degasifier sumps adequately during the cleaning operations.

- b. The Design-Build Entity shall provide, but not limited to, the following:
 - i. Modify each degasifier sump to add one (1) 10" flanged drain/pump suction connection/nozzle complete with 10" PVC butterfly isolation valve with geared manual actual with handwheel and blank flange,
 - ii. Modify each degasifier sump to add two (2) 1" flanged ports complete with 1" CPVC ball valves and blank flanges and for the addition of cleaning chemicals,
 - iii. Modify each existing 4" diameter packing cleaning header by installing 8" piping and nozzle to replace the existing 4" nozzle. Install 8" PVC pipe and new support clips for the new 8" pipe. Install 8" PVC butterfly isolation valve with geared manual actuator and handwheel, approximately 18 inches above clearwell top slab for the cleaning solution discharge.
 - iv. Furnish one (1) diesel powered engine-driven portable pump capable of delivering 1,700 gpm. The pump shall be furnished with a local control panel to allow speed control. Operationally, the pump would be moved into position on ground level near the clearwell on the same side of the degasifier that is to be cleaned. The portable pump will be

- connected to the degasifier by temporary/removable suction and discharge piping.
- v. Provide temporary suction and discharge piping sections to connect the portable pump to the new 8" discharge and 10' suction connections at the degasifiers.
 - vi. Furnish and install piping supports as required.
- c. FRP pipe shall be machine-made, filament-wound, reinforced thermosetting resin pressure pipe in accordance with ASTM D 2996 – Filament-Wound "Fiber Glass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe, or centrifugally cast epoxy pipe with high strength glass fabrics with glass fibers in both directions according to ASTM D 2997 – Centrifugally Cast Reinforced Thermosetting Resin Pipe. The pipe shall have a minimum pressure rating of 150 psi at 125 degrees F for exposed service. The pipes shall have a corrosion resistant external coating and liner, suitable for exposed service conditions. The pipes shall be suitable for exposure to sunlight and low and high pH cleaning solutions. The Design Build Entity is responsible for determining the composition of the anticipated cleaning solutions and designing the FRP pipe accordingly. Color of the pipe shall match the existing degasifiers.
- d. Plastic butterfly valves shall be solid thermoplastic butterfly valves and be of the lined body design and achieve a bubble-tight seal with only the liner and disc as wetted parts. Butterfly valves for steady-state water working pressures and steady-state differential pressure up to 150 psi and shall conform to AWWA C504. The disc, lining and body shall be made of the materials compatible for the indicated service. The stem shall be constructed of stainless steel. Plastic butterfly valves shall be flanged to mate with ANSI B 16.5, class 150 wafer or lug style complete with 316 SS nuts, bolts and washers.
- e. Plastic ball valves shall be solid thermoplastic ball valves and be of the lined body design and achieve a bubble-tight seal. The ball, lining and body shall be made of the materials compatible for the indicated service. The stem shall be reinforced with metal. Plastic ball valves shall have true union ends or flanged to mate with ANSI B 16.5, class 150 flanges complete with 316 SS nuts, bolts and washers. The valves shall be suitable for a maximum working pressure of 150 psi at 73 degrees F for CPVC and PVC.

1.3.2. Deep Injection Well Surge Tank

- a. The Design-Build Entity shall demolish and dispose of the existing deep injection well surge tank and shall furnish all labor, equipment,

materials, tools, supplies, fittings, and appurtenances required for the fabrication, support, installation, anchorage, hook-up, and testing of a hydro-pneumatic surge tank. This shall include a welded steel hydro pneumatic surge tank with internal bladder, and all appurtenant work, as specified herein.

b. The deep injection well hydro-pneumatic surge tank is in need of replacement. The existing tank was constructed of steel and had an interior Potapox coating, which is failing. Due to the corrosive nature of the reverse osmosis concentrate stored in this tank and incompatibility with the Potapox coating, failure has resulted in damage to the steel tank. The Design-Build Entity shall demolish and dispose of the existing hydro-pneumatic tank at WTP11 and furnish and install a new hydro-pneumatic tank for the same duty as the existing tank. The new hydro-pneumatic tank shall have a minimum design life of 20 years. Internal and exterior coatings shall be factory applied. The hydro-pneumatic tank shall be provided with integral supports that shall be designed to meet or exceed the latest Florida Building Code wind design requirements. Foundations for the new hydro-pneumatic tank shall be the responsibility of the Design-Build Entity. The Design-Build Entity shall also be responsible for making necessary process piping, electrical and instrumentation connections to the new hydro-pneumatic tank. Lightning protection shall be designed and installed as necessary.

c. Reference Standard Specifications and Codes

ANSI/AWWA D100	Welded Steel Tanks for Water Storage.
API 620	Recommended Rules for Design and Construction of Large Welded, Low-Pressure Storage Tanks.
SME Section	VIII Boiler and Pressure Vessel Code.
ASTM A 36	Specification for Structural Steel.
ASTM A 131	Specification for Structural Steel for Ships.
NFPA 30	Flammable and Combustible Liquids Code.
SSPC-SP 5	White Metal Blast Cleaning.
SSPC-SP 6	Commercial Blast Cleaning.
UBC	Uniform Building Code, International Conference of Building Officials

- d. Certification:
- i. Certification of Material: Manufacturer shall certify that material of the tank is in accordance with the requirements of ASME Code Section VIII.
 - ii. Certification of Welding Procedures and the Welders and Welding Operators for Shop and Field Welding: The qualification records of the welding procedures, and the welders and welding operators utilized for construction of the tank shall be certified by the manufacturer or CONTRACTOR/SUPPLIER and shall be accessible to the inspectors and Engineer.
- e. Final Test Report: At the conclusion of the combined hydrostatic and pneumatic tests, manufacturer shall submit a complete test report which includes summaries of methods of testing, level of water in the tank, and setting of test pressure.
- f. Quality Assurance:
- i. Tanks shall be manufactured by a firm with a minimum of 10 years experience and having been regularly engaged in the design, manufacture, and installation of vessels of similar type and under loading conditions typical of transient pressure and flow in municipal water and wastewater applications. Code stamp is required for the tanks. The manufacturer shall be certified to use the BPV Code stamp.
 - ii. The manufacturer shall provide quality assurance services as required by this Design Build criteria. In the event a conflict between this Design Build criteria and ASME Code, the provisions herein govern as long as the ASME Code is not violated.
 - iii. Inspections shall be carried out by authorized inspectors regularly employed by an ASME-accredited authorized agency.
 - iv. Weld joints shall be radiographed in accordance with the requirements of ASME.
 - v. Examination procedures, acceptance standards, repair requirements of radiographic welds, and competence of examiners shall be in accordance with the requirements of ASME Code Section VIII
 - vi. Vessel manufacturer shall make records of certified welding procedures, qualifications of welders, and welding operators

available to the inspector during manufacture of vessels Testing and Treatment of Materials: Materials used in constructing the tank shall be tested and treated in accordance with the requirements of the BPV Code, Section VIII.

- vii. Welded joints shall be tested in accordance with the requirements of ASME Code Section VIII.
- g. The manufacturer shall furnish to the OWNER, the manufacturer's written guarantees that the equipment will meet the published data and this Design Build criteria. The manufacturer shall also furnish the manufacturer's warranties as published in its literature and as specified. Performance of the surge protection systems shall be verified by field testing. In the event that the test results show the surge control equipment fails to comply with the design criteria, the tank shall be upgraded or reconstructed by the Design-Build Entity at no additional cost to the OWNER. The manufacturer shall warrant the specified items for a period of 1 year following the date of final acceptance by the OWNER.
- h. The surge tank shall be constructed of welded steel and have 316 stainless steel nameplates and code stamps.
- i. All surge tank openings 4-inches and greater in nominal diameter shall be reinforced as required by ASME Code.
- j. Surge tank shell joints shall have complete joint penetration and fusion, and shall be welded from both sides. Before the second side is welded the joint shall be arc-gouged to sound metal.
- k. The surge tank shall be a vertical cylindrical tank with seamless ellipsoidal or torispherical ends of the same dimensions as the existing surge tank. The surge tank shall have legs suitable for supporting the vessel and anchoring to the foundation. Access openings shall be flanged, and, unless otherwise specified, have nominal dimensions of at least 24-inches in diameter.
- l. After fabrication, the surge tank shall be tested in accordance with the reference standards.
- m. Anchorage System: A surge tank anchorage system shall be provided as designed by the tank manufacturer and shall be anchored into concrete foundations using methods designed to transfer the full ultimate strength of anchor bolts to the concrete foundation. Anchor system shall be designed to meet the wind loading criteria contained herein.

- n. Pressure Rating: Unless otherwise specified, all unfired pressure tanks shall be fabricated in accordance with the ASME code for unfired pressure vessels, for a pressure rating of at least 50 percent above the maximum allowable surge pressure.
- o. Coatings: All shell attachments for pipe supports, tank gauges, instruments, anode supports, electrical connections, and other items shall be welded to the tank shell before application of the tank coating. Interior surfaces of the surge tank shall be sandblasted per SSPC-SP-5 (White Metal Blast Cleaning) and factory-coated with a 10-mil (dry film thickness) coating of NSF 61 certified epoxy coating such as Plastite 9133 or equal. The coating shall be applied in 2 or more coats. The tank exterior shall be factory coated with a uniform 10-mil dry film thickness of polyurethane with not less than 2 coats. The coating and application procedures shall meet the manufacturer's written requirements. Field repairs of the factory coating shall be performed in accordance to the tank manufacturer's instructions using the same factory coating material.
- p. Bladder – Reverse-Osmosis Concentrate Service: The bladder shall be mounted to the bottom of the tank with additional support from the inside top of the tank and shall be constructed from a butyl rubber. Reverse-osmosis concentrate shall be contained within the bladder and shall not be in contact with the interior of the vessel shell. The bladder shall be manufactured by the vessel manufacturer and shall be made to the same dimensions as the vessel interior.
- q. The design shop fabrication and inspection shall comply with Section VIII of the ASME Boiler and Pressure Vessel Code for Unfired Pressure Vessels. The design pressure of the vessel shall be at least 1.5 times the maximum allowable surge pressure. The tank shall be provided with support structures and bearing plates, to be bolted to the existing concrete slab.
- r. Tank Safety-Relief Valve: Safety-relief valve shall comply with the AMSE Boiler and Pressure Vessel Code. Valves shall have a pressure rating suitable for the maximum surge pressure. Valves shall have bottom inlet and side outlet piped full size to 6-inches above the floor. Inlet shall have incorporated a calibrated spring set to allow the valve to open at the required pressure. Valve shall be sized to vent 250 gpm with a backpressure of 14.5 psi. Valve shall be provided with the balanced bellows and shall be trimmed for reverse-osmosis concentrate. Valve shall be Spence Figure 800 series or equal. The valve shall be set to relieve pressure as specified.

- s. Tank Differential Pressure Transmitter: A differential pressure transmitter shall be provided for remote monitoring of the tank level. The differential pressure transmitter shall be model 3051L with integral 2" mounting flange and capillary tubing for connection to the air accessory manifold on top of the vessel as manufactured by Rosemount or approved equal.
- t. Tank Piping System: Provide a ½ inch diameter threaded connection, gas charging valve and pressure gauge at the top of the tank.
- u. Air Pre-Charging: The Design-Build Entity or qualified manufacturer's representative shall fully pre-charge the surge tank bladder when the tank is empty with compressed air in accordance with the manufacturer's instructions prior to testing the system, and shall make the necessary final adjustments in pressure prior to acceptance by the OWNER.
- v. Full startup testing of the unit shall demonstrate functionality of the surge control system and instrumentation. This testing shall be witnessed by the OWNER. The field inspection shall include a hydrostatic test of at least eight (8) hours at the design pressure. The test shall be observed by the OWNER.

1.3.3. Permeate Flow Meter Piping

- a. The Design-Build Entity shall demolish and dispose of the existing unlined ductile iron pipe and the existing permeate flow meter and furnish and install, commission, start-up and place into service new above grade 316 stainless steel piping, complete and operable. The existing flow meter vault shall be cut down three (3) feet below grade and filled in with appropriate fill. Holes will be cut into the base of the existing flow meter vault to allow for free drainage.
- b. The replacement piping will be installed above ground complete with one (1) 1-inch port for future permeate acidification, provision for the future installation of a static mixer, pipe supports and a reinforced concrete slab on grade. The Design-Build Entity shall be responsible for foundations, pipe supports, electrical and instrumentation connections to existing systems. Replacement piping shall be Schedule 10, 316 stainless steel pipe for above ground and SDR11 HDPE IPS pipe for below ground.
- c. Stainless Steel Pipe and Fittings:

- i. Stainless steel pipe shall be in accordance with ASTM A 312 – Seamless and Welded Austenitic Stainless Steel Pipe, Type 316, seamless, Schedule 40, with screwed fittings for sizes up to and including 2-1/2 inches and welded fittings or flanged fittings for sizes 3-inches and larger. Stainless steel pipe 12-inches in diameter and larger shall be in accordance with ASTM A 409 – Welded Large Diameter Austenitic Steel Pipe for Corrosive or High-Temperature Service, or A 778 – Welded, Unannealed Austenitic Stainless Steel Tubular Products, Type 316, with welded or flanged joints. Pipe and fittings shall be acid pickled and passivated after manufacturer
- ii. Stainless steel pipe for sizes 2-1/2 inches and smaller shall have screwed ends with NPT threads made up with Teflon tape. Stainless steel pipe 3-inches and larger shall have welded joints with socket welding fittings, butt-welding fittings, or socket welding flanges. Stainless steel flanges shall have stainless steel bolts and nuts.
- iii. Threaded Fittings: Forged stainless steel fittings conforming to ASME B 16.11 – Forged Fittings, Socket-Welding and Threaded, Type 316.
- iv. Socket-Welding Fittings: Forged stainless steel fittings conforming to ASME B 16.11, Type 316.
- v. Butt-Welding Fittings: Wrought stainless steel butt-welding fittings conforming to ASTM A 403 – Wrought Austenitic Stainless Steel Piping Fittings, and ASME B 16.9 – Factory-Made Wrought Steel Butt-Welding Fittings, Type 316.
- vi. Grooved Fittings: Wrought stainless steel grooved fittings conforming to ASTM A 403 and ASME B 16.9, with grooving conforming to AWWA C606 – Grooved and Shouldered Joints, Type 316.
 - i. Flanged Fittings: Type 316 stainless steel flanged fittings and flanges conforming to ASME B 16.5 – Pipe Flanges and Flanged Fittings.

1.3.4. Automation of Ammonia Dosing System

- a. The Design-Build Entity shall demolish existing ammonia dosing and metering system and furnish and install, commission, start-up and place into service new automated ammonia anhydrous ammonia metering and dosing system, complete and operable.

- b. As part of the Degasifier and Clearwell Improvement project the ammonia feed was split into two feed lines one for each half of the clearwell with rotometers and manual valves adjacent to each other to balance the ammonia feed to each side of the clearwell. In order to increase the operational efficiency and improve water quality by controlling free ammonia in the finished water it is proposed to replace the two (2) existing ammoniators and associated controls and pipework with three (3) new SLAMf Series Elastomer Sealed Thermal Mass Flow Controller & Meter ammoniators as manufactured by Brooks Instruments. The three (3) ammoniators shall be arranged so as to provide (2) duty and one (1) common swing/standby. The duty units capable of dosing independently to each side of the clearwell and the swing/standby able to dose to either side of the existing clearwell. The new ammoniators will be installed within the existing ammoniator building and will be fed from the existing bulk ammonia storage tank and feed line. Each ammoniator will be installed to include a dedicated secondary feed regulator and filter prior to the unit and a varea-meter after the unit. The new ammoniators will be installed utilizing the existing feed and discharge piping. The Design-Build Entity will be responsible for making necessary connections to the existing electrical power and control systems. In addition, connections to the existing plant drains where necessary will be the responsibility of the Design-Build Entity. Each ammoniator shall be capable of delivering between 0 and 110 pounds per day (ppd).
- c. The automatic control of the ammoniator(s) shall be achieved via the plant PLC using flow proportioning control. The plant PLC will calculate the required ammonia dose rate to each clearwell side based on a flow rate from the degasifier riser flow meter for the corresponding clearwell side. The plant PLC will send a dose rate signal to the ammoniators and the gas flow control valve shall respond to achieve that set point. In addition, the ammoniators will receive a free ammonia signal from the ammonia analyzer located on the pipeline between the clearwell transfer pumps and the ground storage tanks. The free ammonia signal will be used to trim the ammonia dose rate to zero (0) mg/L. Provision shall be made for local indication of the following parameters: gas valve position percent open, gas flow, dose rate and flow alarm setting. The ability to manually control the ammoniators locally will also be required. The ammoniators shall switch between manual and automatic flow proportional control mode with no appreciable gas flow variation.
- d. An ammonia gas manifold shall be equipped with a pressure relief valve, drip leg, and a high-level dry contact pressure switch. The

pressure switch setpoint shall be determined by the manufacturers of the ammoniation equipment. A high-pressure condition in excess of the setpoint pressure shall trigger a local audible alarm. Local acknowledgement of alarm condition shall be required.

- e. Provision shall be made within ammonia metering and dosing system for a nitrogen purge system. The nitrogen purge system shall be designed to allow purging of the ammonia metering and dosing system with nitrogen to rid the system of moisture. A nitrogen purge will be performed by the Design-Build Entity prior to commissioning the ammoniators.
- f. Surfaces of all parts which may at any time come in contact with ammonia gas shall be constructed of materials which are resistant to ammonia. Materials containing copper, brass, zinc or any alloys containing the above shall not be used where contact with ammonia gas may occur. All installation, cleaning, and testing shall be per the recommendation of applicable ANSI, ASTM, Compressed Gas Association, and Code of Federal Regulations Standards
- d. Stainless Steel Pipe and Fittings:
 - i. Stainless steel pipe shall be in accordance with ASTM A 312 – Seamless and Welded Austenitic Stainless Steel Pipe, Type 316, seamless, Schedule 40, with screwed fittings for sizes up to and including 2-1/2 inches and welded fittings or flanged fittings for sizes 3-inches and larger. Stainless steel pipe 12-inches in diameter and larger shall be in accordance with ASTM A 409 – Welded Large Diameter Austenitic Steel Pipe for Corrosive or High-Temperature Service, or A 778 – Welded, Unannealed Austenitic Stainless Steel Tubular Products, Type 316, with welded or flanged joints. Pipe and fittings shall be acid pickled and passivated after manufacturer
 - ii. Stainless steel pipe for sizes 2-1/2 inches and smaller shall have screwed ends with NPT threads made up with Teflon tape. Stainless steel pipe 3-inches and larger shall have welded joints with socket welding fittings, butt-welding fittings, or socket welding flanges. Stainless steel flanges shall have stainless steel bolts and nuts.
 - iii. Threaded Fittings: Forged stainless steel fittings conforming to ASME B 16.11 – Forged Fittings, Socket-Welding and Threaded, Type 316.

- iv. Socket-Welding Fittings: Forged stainless steel fittings conforming to ASME B 16.11, Type 316.
 - v. Butt-Welding Fittings: Wrought stainless steel butt-welding fittings conforming to ASTM A 403 – Wrought Austenitic Stainless Steel Piping Fittings, and ASME B 16.9 – Factory-Made Wrought Steel Butt-Welding Fittings, Type 316.
 - vi. Grooved Fittings: Wrought stainless steel grooved fittings conforming to ASTM A 403 and ASME B 16.9, with grooving conforming to AWWA C606 – Grooved and Shouldered Joints, Type 316.
 - vii. Flanged Fittings: Type 316 stainless steel flanged fittings and flanges conforming to ASME B 16.5 – Pipe Flanges and Flanged Fittings.
- g. Threaded joints shall be made up with compounds or tape especially recommended for ammonia service. Rubber hoses shall not be used in permanent installations.
 - h. Shut-off ball valves installed in ammonia pressure piping shall be three-piece or two-piece ball valves with minimum 300-lb rating with 316 stainless steel body, ball, stem, and trim, teflon seal for ammonia service with 1/4 turn open or closed operator with compression ends. All ball valves shall be as manufactured by Whitey Co., type C 60V, Neles - Jamesbury, type 2000 C; or equal.
 - i. Pressure relief valves shall be made from 316 stainless steel and shall be suitable for ammonia service. Pressure set points shall be field adjustable and determined by the supplier of the ammoniation equipment. Pressure relief valves shall be Whitey Co., CPA Series; or equal.
 - j. Manual vent relief valves shall be made from all 316 stainless steel with Teflon packing, and shall be suitable for ammonia service. Valves shall be angle pattern needle valves by Whitey, Co., Series 26 or equal.

1.3.5. Automation of Sodium Hypochlorite Dosing System

- a. The Design-Build Entity shall demolish existing 1 percent sodium hypochlorite dosing and metering system and furnish and install, commission, start-up and place into service new automated twelve

and one half percent metering and dosing system, complete and operable.

- b. As part of the Degasifier and Clearwell Improvement project the sodium hypochlorite feed was split into two dosing points, one for each half of the clearwell complete with rotometers and manual valves to balance the chlorine feed to each side of the clearwell. In order to increase the operational efficiency and improve the reliability and repeatability of the disinfection process it is proposed to replace the current one percent sodium hypochlorite solution batching and dosing system with a twelve and one half percent concentrated chlorine dosing system. The Design-Build entity will install new above grade and buried suction and discharge piping with the appropriate secondary containment between the chlorine dosing pumps, the bulk storage tanks and chlorine dosing application points. There are three (3) chlorine injection points throughout WTP11, one to each side of the clearwell which serves as the primary disinfection for WTP11. The third application point is on the suction to the high service pumps which will operate as trim dose of sodium hypochlorite to reduce free ammonia in the finished water existing WTP11.
- c. The clearwell chlorine dosing pumps will be arranged to provide an independent duty and standby dosing pump to each side of the clearwell. A total of four (4) new progressive cavity chlorine dosing pumps will be located within the membrane process building in the area of the onsite chlorine generation system and existing dilute chlorine dosing pumps. Each side of the clearwell shall have one (1) duty and one (1) standby sodium hypochlorite dosing pump capable of delivering a chlorine dose between 0 and 7.5 mg/L of chlorine to a flow rate of up to 6.0 mgd. Control of the clearwell dosing pumps will via plant operations staff entering a chlorine residual set point into the plant control system and the plant PLC will calculate the required dose based on the measured flow to each side of the clearwell as measured by the flow meters located on the degasifier risers. One of the remaining two standby dosing pumps will be capable of delivering a chlorine dose between 0 and 3 mg/L of chlorine to a flow rate no less than 10.0 mgd a trim dosing point on the suction of the high service pumps. The trim chlorine dosing pump will be flow paced from the master finished water flow meter(s) and trimmed based on the free ammonia as measured by the finished water panel.
- d. Equipment shall be from manufacturers with several years of experience in the manufacture and assembly of similar products, with a record of successful installations. Such manufacturers shall maintain a well established, authorized, local service agency with

sufficient spare parts and personnel to respond within 48 hours to any service calls.

- e. The Design Build Entity shall obtain written certification from the chemical dosing system manufacturer, addressed to the OWNER, stating that the equipment will efficiently and thoroughly perform the required functions in accordance with this Design Build criteria, that the materials are best suited for the chemicals handled, and that the manufacturer accepts joint responsibility with the Design Build Entity for coordination of equipment, including motors, variable speed drives, controls, and services required for proper installation and operation of the completely assembled and installed unit.
- f. The sodium hypochlorite metering and dosing pumps will be progressive cavity pumps as manufactured by Seepex Inc. installed on skid(s) with the required piping, calibration columns, pulsation dampeners (if required), pressure relief valves, isolation valves, splash guard(s), magnetic flow meters and Nema 4X 316 stainless steel control panels complete with variable speed drive. Materials of construction for the dosing pumps and associated equipment shall be compatible with the continuous dosing of 12.5% sodium hypochlorite solution. The dosing pumps shall be provided with dry-running protection device and stator tensioning device.
- g. A single manufacturer shall supply and be responsible for the compatible and successful operation of the various components of the sodium hypochlorite dosing system, it shall be understood to mean that the Design Build Entity shall provide only such equipment as the designated manufacturer will certify is suitable for use with its equipment and with the further understanding that this in no way constitutes a waiver of any indicated requirements.
- h. Corrosion Resistance: Materials used in the construction of the sodium hypochlorite dosing system, shall be resistant to corrosive attacks from continuous exposure to 12.5% sodium hypochlorite.
- i.
- j. Pressure Gauges: Chemical metering pump discharges shall be equipped with pressure gauges with diaphragm seals compatible with the intended service (12.5% sodium hypochlorite).
- k. Safety Equipment: Where required by Code, chemical unloading, storage, and feeding equipment shall be provided with the necessary safety devices and warning signs, clearly visible.

- I. Calibration Columns: Calibration Columns shall be a calibrated PVC gauge with vent. Design pressure shall be 150 PSI and constructed with flanged ends in the materials compatible with the intended service. The scale shall have direct reading in GPH without the need for calculations.
- m. Pulsation Dampeners (if required): Each metering pump system shall be furnished with corrosion resistant pulsation dampeners. The pulsation dampeners shall be of the diaphragm type and shall dampen flow a minimum of 95 percent. The size, type and materials of the pulsation dampeners shall be as selected by the Design Build Entity.
- n. Pressure Relief Valve: Each chemical metering pump shall be furnished with an external (external to the feed pump) corrosion-resistant pressure relief valve on the discharge of the chemical metering pump. The size, type and materials of construction shall be determined by the Design Build Entity. Set point shall be set at 90% of the lowest equipment pressure rating downstream of the dosing pumps.
- o. Injection Quill: Each chemical metering system shall be furnished with a corrosion-resistant injection quill at the high service pump station discharge point. The size, type and materials of construction shall be determined by the Design Build Entity. The injection quills shall be sized for the corresponding maximum pump flow rates and anticipated pressures.
- p. Backpressure Valves: Each chemical metering system shall be furnished with a corrosion-resistant backpressure valve at the high service pump station discharge point. The size, type and materials of construction shall be determined by the Design Build Entity. The backpressure valves shall be sized for the corresponding maximum pump flow rates.
- q. Chemical piping located outside containment areas shall be double contained piping.
 - i. Carrier pipe materials shall be suitable for the intended service (12.5% sodium hypochlorite) placed within secondary containment pipe. The carrier pipe shall be Purflon (PFA) or Teflon (PTFE) tubing of adequate diameter and pressure rating for the intended application.
 - ii. The secondary containment pipe shall contain all hazardous material(s) discharged from the carrier pipe for a period of time

equal to or longer than the maximum anticipated time sufficient to allow recovery of the discharged material. All secondary containment piping shall be such that it will contain 110% of the volume of the service pipe. Containment shall be drainable and air testable. Secondary containment pipe materials shall be suitable for the intended service (12.5% sodium hypochlorite).

- iii. Pull/junction boxes shall be located strategically along the double contained pipe route to facilitate; inspection of the carrier pipe, leak inspection and removal and replacement of the carrier pipe within the secondary containment pipe. The pull/junction boxes materials shall be suitable for the intended service (12.5% sodium hypochlorite) and have lids that are water tight to protect against the ingress of water. The secondary containment pipe and pull/junction boxes shall form a water-tight containment system. The pull/junction boxes shall have the appropriate structural integrity for the location and anticipated loading from personnel, vehicles and equipment.

1.3.6. Sodium Hypochlorite Storage Tank

- a. The Design-Build Entity shall demolish the existing 10,000 gallon sodium hypochlorite dilution tank (middle tank bay) used for the production of one (1) percent sodium and furnish and install a new 10,000 gallon fiberglass sodium hypochlorite storage tank and associated piping, appurtenances and instrumentation.
- b. An independent inspection shall be performed by the Design-Builder's authorized inspector on the tank during various stages of fabrication. The independent inspector shall have at least 5 years of experience in inspecting fiberglass tanks.
- c. Wherein this document designates "or equal" the Design-Builder shall prepare a recommendation for final determination by the Owner.
- d. Tank designs and drawings shall be signed and sealed by a Florida Professional Engineer for wind load calculations as per ASCE 7-10. Calculations shall include:
 - i. Tank shell/heads.
 - ii. Hold down lug analysis.
 - iii. Operating loads.
 - iv. Environmental loading such as wind/seismic.

- v. Lifting lug analysis.
 - vi. Anti-buoyancy design based upon containment wall height with tank empty using specific gravity for 12.5% sodium hypochlorite leak in containment.
- e. Tanks including anchors and tie-downs shall be designed to withstand wind loads of 186 MPH (exposure C); shall comply with seismic loads: 2012 IBC/ASCE 71-0 Ss=0.049g SI=0.025G; shall comply with Design Code: ASTM D3299.
- f. All materials that are metal (brackets, bolts, vent screens, etc) shall be 316 Stainless Steel (SS). The existing leveling pads may have minimal reinforcement and the Design-Builder shall be responsible to determine the embedment depth.
- g. Sodium Hypochlorite tanks shall comply with one or more of the FAC 62-555.320(3)(b)1 as indicated below:
- i. NSF International Standard 61 as adopted in Rule 62-555.335, F.A.C.;
 - ii. NSF International Standard 42, 44, 53, 55, 58, or 62 as adopted in Rule 62-555.335, F.A.C.;
 - iii. Section 6 of NSF International Standard 14 as adopted in Rule 62-555.335, F.A.C.; or
 - iv. The Food and Drug Administration's regulations for indirect food additives as contained in the April 1, 2002, revision of 21 CFR Parts 174 through 189, which are incorporated herein by reference.
- h. Tanks shall be cylindrical, atmosphere pressure and temperature rated, designed for the intended specific gravity and intended use. All Sodium hypochlorite tanks shall be designed for minimum 0.8% and a maximum 15.0% sodium hypochlorite concentration with a pH between 12.5 to 13. All tanks shall have 316 SS lifting lugs.
- i. Tanks shall have inlet and outlets orientated in the existing configurations except as approved by the Owner. The orientations of the electrical conduit, sight glass, overflow, ladder and manways shall be verified with the Owner prior to approval of the shop drawings with the intent to optimize safety when entering the containment area.
- j. Lifting Lugs
- i. Lifting lugs shall be 316 SS.
 - ii. There shall be a minimum of three lugs on the tank. The lugs shall be located at the top of the tank, 120 degrees apart. Lugs shall be designed to carry the load of the tank with a safety factor of 2 applied.

- iii. A 316 SS tailing lug may be placed on the bottom of the side shell.
- k. Valves shall be Spears Schedule 80 True Union Industrial Ball Valve with FKM gaskets, locking handle, socket weld ends and bleed hole to relieve gas pressure build-up or approved equal PVC true union ball valves with FKM or Viton o-rings. Tank drain valves shall be flanged.
- l. Provide flexible pipe connections at all tanks and at tanks containment wall to provide for thermal expansion, contraction and/or settlement.
- m. Provide OSHA tank hazard labels identifying chemicals.
- n. Provide Nameplate on all tanks to be FRP encapsulated and contain the following:
 - i. Fabricators name
 - ii. Capacity in gallons
 - iii. Design temperature
 - iv. Design specific gravity
 - v. pH
 - vi. Resin
 - vii. Tank identification No.
 - viii. Tank Name
 - ix. Date of Manufacture
 - x. Manufacturers name
 - xi. Surfacing veil
 - xii. Name of Design-Builder's independent inspector
 - xiii. Provide N
- o. Reference specifications, standards and codes. When 2 or more of the above regulations are applicable; the more stringent requirement shall be met.
 - i. ASTM C 581 Practice for Determining Chemical Resistance of Thermosetting Resins Used in Glass Fiber Reinforced Structures, Intended for Liquid Service
 - ii. ASTM D 638 Test Method for Tensile Properties of Plastics
 - iii. ASTM D 695 Test Method for Compressive Properties of Rigid Plastics

- iv. ASTM D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 - v. ASTM D 883 Definitions of Terms Relating to Plastics
 - vi. ASTM D 2563 Recommended Practice for Classifying Visual Defects in Glass-Reinforced Plastic Laminate Parts
 - vii. ASTM D 2583 Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
 - viii. ASTM D 2584 Test Method for Ignition Loss of Cured Reinforced Resins
 - ix. ASTM D 3299 Filament-Wound Glass Fiber Reinforced Thermoset Resin Chemical-Resistant Tanks
 - x. ASTM D 4097 Contact-Molded Glass-Fiber-Reinforced Thermoset Resin Chemical-Resistant Tanks
- p. Shop Drawings prior to fabrication: Include detailed and certified design calculations by a registered engineer, bill of materials listing components, resins, catalysts, promoters, ultraviolet light absorbers, agents, reinforcing materials, etc., with manufacturer's name, trade and identification marks. The laminate sequence used for tanks must either be attached to or included on drawings used by the fabricator's shop personnel.
- i. Dimensions including anchor bolt layouts.
 - ii. Nozzle schedule including size, mark, thickness, and rating.
 - iii. Details of clips and lugs for ladders, stairs, platforms, hold down lugs, pipe brackets, and anchor bolts as integral parts of the tank. Pipe supports shall be spaced maximum 5-feet on centers.
 - iv. Maximum design specific gravity.
 - v. Equipment weight, empty and filled.
 - vi. Specifications for supplied bolting, gaskets, and accessory items.
 - vii. Dimensioned general arrangement of tank and accessories (including Joint locations, knuckles, nozzle schedule, nozzle projections, orientations, and support).
 - viii. Operating/Design pressures and temperatures.
 - ix. Tank Capacity: measured to the bottom invert of overflow (top of straight shell when overflow not required) in gallons.

- x. Joint configuration details
- xi. Hold down and lifting lug details.
- xii. Wind and seismic anchorage calculations: quantity, sizing, and reaction loads.
- xiii. Fabricator's Quality Control Test Plan: A detailed listing of activities associated with the fabrication, inspection requirements, and testing of the tank
- xiv. Fabricator's tolerance drawing.
- xv. Tolerance on nominal internal diameter including out-of-roundness, shall be $\pm 1\%$.
- xvi. Tolerance on overall tank height shall not exceed $\pm 0.50"$.

q. Submittals Prior to Shipment

- i. Certified Design Calculations.
- ii. Certified for Fabrication Drawings.
- iii. Installation, operation, and handling instructions.
- iv. Test data reports indicating that the specimen/properties tested in accordance with the standard have been met.
- v. Performance affidavit signed by an officer (VP minimum) signifying vessel design and fabrication conforms to this specification in every way.

r. Shipping of Tanks:

- i. Before shipping, the tank shall be thoroughly cleaned inside and outside. Water free moisture, grease, marking compounds, mold release compound, dust, glass fibers, and all other foreign material shall be removed from the tank.
- ii. Tank shall be packed in a manner that provides for a safe and undamaged condition when transported to the Buyer.
- III. INTERNAL AND EXTERNAL PARTS AND PIPING SHALL BE SUITABLE SUPPORTED TO PREVENT DAMAGE DURING TRANSPORT.
- iv. Tanks shall be shipped on padded saddle or suitable skid.
- v. Flanges shall be covered prior to shipment.
- vi. All loose components shall be crated and marked with Job no.
- vii. Regardless of mode of transportation, firmly fasten and pad components to prevent shifting of load or flexing of components while in transit.

viii. Do not ship tank until Design-Builder has reviewed and approved the Fabricator's Design Report.

s. After Shipment:

i. Design-Builder shall be responsible to unload and store tanks in appropriate staging area until installation.

t. Tank Maximum Allowable Visual Defects (see attached Table 1):

Table 1		Maximum Allowable Visual Defects
Visual Defect	Corrosion Liner	Structural & Finish Layers
Air Bubbles - Bubbles trapped within, on or between plies. (.015" dia. Or larger). Not to be confused with froth.	None allowed between veil and anti-wicking barrier (test with pencil point). Max. 1/16" dia. 2 per square inch averaged over a 1 foot square area. In no case more than 4 per square inch.	Practically achievable but not larger than 1/4" dia. Total combined area of all air bubbles not to exceed 10 square inches per square yard for laminates up to 1/2" thick and increase proportionally for thicker laminates. In no case more than 4 bubbles per square inch.
Blisters - Rounded surface elevations resembling a human skin blister.	Max. 1/8" dia. Must not be breakable with a sharp point.	Max. 1/4" dia. Must not be breakable with a sharp point.
Burned Areas - Dark discoloration and distortion of the laminate from excessive curing temperature.	None allowed.	Never in more than one ply and not to exceed 16 square inches in any vessel. Discoloration only never delamination or decomposition.
Chips - Small pieces broken off an edge or surface of the laminate.	None Allowed.	1/8" dia. 1 per square yard. 1/16" deep.
Cracks - Fine cracks at or under the surface of the laminate.	None allowed.	25% of circumference only.
Crazing - Fine cracks at or under the surface of the laminate.	None allowed.	1" dia. 1 per square yard. 1/64" deep.
Delamination - Separation of the layers of material in a laminate.	None allowed.	None allowed.
Dry Spots - Area of surface where the reinforcement has not been wetted with resin. Not to be confused with glinting.	None allowed.	None allowed.
Edge Delamination - Separation of the	None allowed.	None allowed.

reinforcement layers at the edge of the laminate.		
Foreign Inclusions - Anything other than raw material components (visible with naked eye).	1" in size, 3 per square foot	1" in size, 3 per square foot
Pits - Small craters in the surface of the laminate.	1/16" dia. 2 per square yard. 1/32" deep.	1/8" dia. 4 per square yard. 1/16" deep.
Scratches - Shallow marks or grooves caused by mishandling the laminate.	None allowed.	1/32" deep. 6" long.
Wrinkles - Linear abrupt changes in surface plane due to overlap in reinforcing layer, irregular mold surface, or wrinkled release film resulting in a resin rich area that could be easily chipped. Waviness is allowed provided it does not result in resin rich area.	1/8" but must not decrease the laminate thickness below allowable.	N/A

u. Installation:

- i. Provide felt or neoprene pads under tanks as recommended by the tank manufacturer.
- ii. Provide any necessary improvements to existing leveling pads as the new tanks may have additional anchors and for the removal of existing anchors.
- iii. If the Containment Coating under the existing tanks is damaged it shall be repaired by the Design-Builder by a Work Supplement.
- iv. Replace all sodium hypochlorite piping inside the containment area up to the double containment including fill piping, outlet piping and overflow piping except for the dilution system and associated water piping which shall remain. Paint exposed sodium hypochlorite pipe yellow including fill piping, outlet piping and overflow piping. Use schedule 80 PVC piping and mount new piping approximately 6" above the containment floor with FRP unistrut and 316 SS bolts to facilitate future recoating of the containment. Supports shall be properly spaced to prevent visible sagging of piping. Provide manifold valves to isolate piping for leak repair without having to shut down the entire system.
- v. Design-Builder shall conduct hydrostatic leak test with tanks full (to invert of overflow pipe) of clean water. Allow water to stand 24 hours to verify no leakage.

v. Warranty

- i. Fully warrant all items furnished hereunder against defect in materials and/or workmanship for a period of **five (5) years** from date of delivery and acceptance by Palm Beach County, with exception of the 316 stainless steel (SS), nuts, bolts, and washers. Should any defect in materials or workmanship, excepting ordinary wear and tear, appear during the above stated warranty period repair or replace same at no cost to Palm Beach County.
- w. Qualifications of Tank Fabricator and Certification
 - i. Tank fabricator shall have either FRPI (Fiberglass Reinforced Plastic Institute) SP9000 Laminating Process Certification or ASME RTP-1 Certification.
 - ii. Design-Builder shall provide additional cost (Owners option) to certify sodium hypochlorite storage tanks are either FRPI or ASME RTP-1.

x. **TECHNICAL REQUIREMENTS**

i. **SODIUM HYPOCHLORITE STORAGE TANK**

1. **GENERAL CONSTRUCTION REQUIREMENTS**

- 2. Centrifugal casting of the Sodium Hypochlorite Tanks is not allowed.
- 3. The filament wound tanks shall be designed and fabricated in accordance with the ASTM Specification D3299-10 (Filament-wound glass-fiber reinforced thermoset resin chemical-resistant tanks) unless otherwise stated herein
- 4. A white pigmented exterior gel coating 5-10 mils with UV inhibitors shall be provided on all sodium hypochlorite storage tanks. The laminate comprising the structural (bottom, cylindrical shell, top head) shall consist of a corrosion-resistant barrier comprised of an inner surface, interior layer, and structural layer.
- 5. Tank bottom shall be integral with the bottom tank shell.
- 6. The lower seven (7) feet of the tank shell and bottom head shall be a combination of filament winding and hand layup or hand layup, with no bottom to shell joint or through bottom hole for mandrel support allowed. Chop spray may be substituted for hand layup in both integral laminating methods allowed.
- 7. No patched or repaired hole in the center of the tank bottom resulting from tooling or fixture support.

8. Combined minimum thickness of the inner surface and interior layer shall be 100 mils (0.100-inches) or greater.
9. Completed tanks shall be post cured with dry heat in accordance with the Derakane 411 or approved equal.
10. Any internal repairs or rework shall be completed prior to post curing.
11. If repairs are made following post cure, an additional post cure cycle will be required.
12. Bottom configuration shall be seamless integral flat with no bottom side-wall seam.
13. Top configuration shall be ASME dome top with 250 lb. loading on any 4" x 4" area.
- 14. SHALL INCLUDE LADDERS AND/OR HANDRAILS WITH SAFETY CAGE (SEE FITTINGS AND ACCESSORIES).**
15. Shall allow FRPI tanks with SP9000 Laminating Process Certification, SP9100 Laminate Certification or ASME RTP-1.

ii. **FIBERGLASS**

1. **Chopped strand mat shall be commercial grade Boron free ECR glass.**
2. All tanks reinforcement shall be woven roving and shall be in accordance with ASTM Specification.
3. The inner surface layer exposed to the corrosive environment shall be followed with an interior layer composed of resin and reinforced with only chopped glass-fiber strands applied to a minimum thickness of 86 mils (0.086-inches).
4. Glass content of the inner surface and interior layer combine shall be $27\% \pm 5\%$ by weight.
5. Subsequent reinforcement shall be continuous-strand roving needed to satisfy the design requirements. Glass content of this filament-wound structural layer shall be 50 to 80% by weight. Only those constructions evaluated for design properties shall be used.
6. Subsequent reinforcement shall be comprised of 1.5 oz/ft² chopped strand mat or equivalent weight of chopped roving and such additional number of alternating plies of 24 oz/yd² woven roving to a

thickness as required to meet the physical properties that are used for the design.

7. Each successive ply or pass of reinforcement shall be well rolled prior to the application of additional reinforcement.
8. Where woven rovings are used, chopped strand glass reinforcement shall be used as alternating and final layers.
9. All woven roving and chopped strand shall be overlapped.
10. Laps in subsequent layers shall be staggered at least 2.25 inches from laps in the preceding layer.

iii. **RESIN**

1. Resin used shall be Derakane 411 or approved equal that have been evaluated in a laminate test in accordance with ASTM C-581 in Sodium Hypochlorite service comparable to the intended service and recommended for this service by the resin manufacturer.
2. The Derakane 411 or approved equal resins shall not contain pigments, dyes, colorants or fillers.
3. The Derakane 411 or approved equal resins shall contain a thixotropic agent that does not interfere with visual inspection of laminate quality, may only be added for viscosity. But not to be used in the inner corrosion barrier, interior layers, interior secondary layers, and interior top coats.
4. The resin pastes used to fill crevices shall contain thixotropic agents. All areas shall be covered with a full corrosion-resistant barrier laminate.
5. The inner surface exposed to the chemical environment shall be a resin rich 20 mil (0.020-inch) thick layer.
6. Resins used in these layers shall be Derakane 411 or approved equal incorporating a BPO/DMA cure system as recommended by the manufacturer. No substitutes shall be allowed under this contract.
7. The degree of cure shall be such as to exhibit a Barcol hardness on the inner surface of at least 90% of the resin manufacturer's minimum specified hardness for the cured laminate.

8. Resins used in the structural layer shall be the same as the Derakane 411 or approved equal used in the inner surface and interior layers, except BPO/DMA cure system is not required. Generic types of resins or general purpose resins shall NOT be used.
9. All interior overlays of nozzles, man-ways and other internal accessories shall incorporate the BPO/DMA cured resin.

iv. **VEIL**

1. Inner corrosion barrier inner surface shall be reinforced with 2 ply C-Glass veil or approved equal.

v. **FITTINGS AND ACCESSORIES**

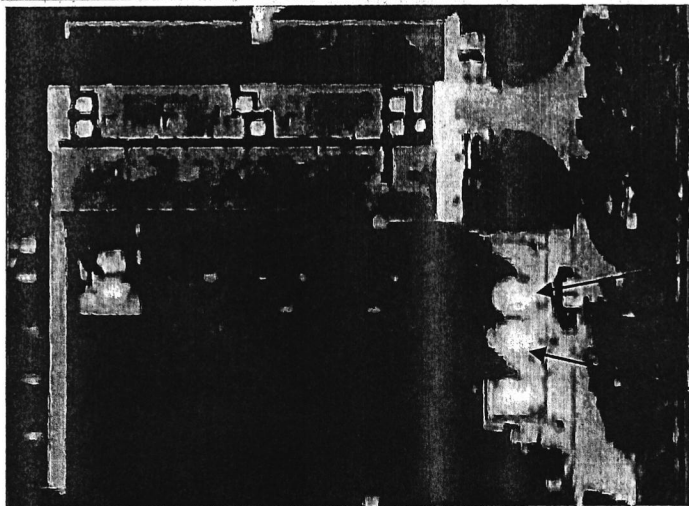
1. All tank outlets shall be flanged. Threaded fittings shall not be used in the Sodium Hypochlorite service. All flanged nozzles shall be of hand lay-up construction with the pipe stub molded integrally with **3/8" thick coned gusseted flanges**. Compression molded or cemented on flanges, are prohibited. **(No outsourcing of FRP components)**. The resin used for the inner surface and interior layer of flanged stubs shall be the BPO/DMA cured resin system.
2. Provide tank flanged inlet piping to top shell with brackets and connect to existing fill piping.
3. Provide tank flanged outlet (no internal elbow).
4. Provide magnetic flag indicator sight gauge (no glass) with top and bottom isolation valves at tank and support brackets.
5. Provide overflow pipe with supports adequately sized to prevent over pressurization during filling. Provide tee on top with riser and 180° elbow to vent with 316 SS insect screen. Provide elbow with support at bottom to prevent splashing into containment and to direct away from the tank pad.
6. Provide tank drain with valve and internal drain pipe with 90° bend to approximately 1"-2" from tank floor.
7. Provide adequate vent pipes with 180° elbow and 316 SS insect screen. Provide vents for forced air intake and exhaust to remove hydrogen gas.
8. Top and side manways.

- a. All closed top tanks shall be provided with a minimum 24 inch diameter flanged top man-way with hinged cover with securing bolts.
 - b. All tanks with a straight shell height greater than 12 feet shall be provided with a minimum 30 inch diameter flanged side man-way with bolted cover. Bolted man-ways shall be provided with 1/4 inch thick full-face Viton gaskets and 316 SS bolting. Man-way stub flange and cover shall be hand lay-up construction with the inner surface and interior layer using the BPO/DMA cured resin system.
9. Liquid Level Control System – Level control for sodium hypochlorite shall be through the use of ultrasonic level transducers. Provide flanged outlet on the top of the sodium hypochlorite tanks and install level transducers. Each tank shall have mounting brackets for electrical conduit.
10. Floor Mount Access Ladder with Walk-Through Cage with Return - meeting or exceeding all OSHA requirements, constructed of fiberglass. Provide aluminum ladder with safety rail system for use with safety harness. FRP cage systems to be pigmented OSHA safety yellow with ultraviolet (UV) inhibitor additives.

TANK LOCATIONS

Water Treatment Plant No. 11 39700 Hooker Highway Belle Glade, FL 33430 Mike Turbeville (561) 493-6175	1	10,000 Gallons match height and diameter of existing hypochlorite tanks
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WTP 11 Proposed Tank Locations



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Remove existing Sodium Hypochlorite dilution tank and Construct New 12.5% 10,000 gallon Sodium Hypochlorite Tank

Existing Sodium Hypochlorite to Remain

1.3.7. Sodium Hypochlorite Containment Area Coating

- a. The Design-Build Entity shall furnish and install a protective coating system to the interior surface of the existing sodium hypochlorite secondary containment area. The coating will be applied to all interior concrete surfaces including the top of the containment area walls. The protective coating system shall be suitable for the proposed application and provide long-term protection to the concrete containment structure. The selected product shall be color coded per PBCWUD guidelines.
- b. Independent inspection of surface preparation, primer, intermediate and final coatings shall be made by a National Association of Coating Engineers (NACE) certified coatings inspector. Written reports of these inspections shall be submitted to PBCWUD. Coating work shall not be permitted to proceed without written approval from the independent NACE inspector stating that the prerequisite preparation and/or application work has been successfully completed.
- c. The Design-Build Entity shall demolish the existing water softener and two (2) blowers including equipment pads, appurtenances, piping, controls, instrumentation and electrical equipment.

1.3.8. Process Lift Station Pipe Replacement

- a. The Design-Build Entity shall be responsible for replacement of the above ductile iron pipe and valves on the discharge to the process plant lift station including the section of buried piping to the existing buried isolation valve. The existing buried isolation valve will be replaced. Replacement piping shall be HDPE and replacement valves shall be plug valves with suitable materials of construction compatible for the proposed application. Piping and valves shall be with appropriately supported in accordance the manufacturers

guidelines. Existing piping and valves shall be demolished and properly disposed of by the Design-Build Entity.

1.3.9. Annulus Tank

- a. The Design-Build Entity shall replace the existing pressure transmitter and combination level sensor and site glass with like in accordance with "PBCWUD Minimum Design Standards" (PPM# WUD-0-43). The proposed combination level sensor and site gauge shall be replaced with non-contact flag type magnetic site glass.
- b. A new solenoid valve shall be installed on the existing compressed air feed line to the annulus tank. The valve will be controlled to maintain a pressure set point in annulus tank headspace. The pressure set point shall be entered into the HMI by plant operations staff.

1.3.10. Clearwell Improvements

- a. The Design-Build Entity shall be responsible for installing a two (2) turbidity meters on each side to the clearwell. The turbidity meters shall be gravity fed and therefore will need to be located adjacent to either side of the clearwell. The clearwell wall will be cored
- b. A redundant ultrasonic level sensor shall also be installed within the common pump bay of the clearwell. The new level sensor shall be located in the north west corner of the clearwell. The level sensor shall be in accordance with "PBCWUD Minimum Design Standards" (PPM# WUD-0-43). The operator will be able to select the which level sensor of the two installed level sensors is active. An alarm will be triggered if there is a preset differential between the levels being reported by each of the two level sensors.
- c. Four (4) new access hatches at the clearwell are to be replaced. Replacement shall include the covers, hinges with lift assist, slam lock latches, gaskets, fall protection grating system and hardware however, the existing hatch frames shall remain in place. In addition, the existing permanently installed ladders will be removed.
- d. Replace existing clearwell overflows with down turned 90-degree PVC bends and insect mesh.

1.3.11. The Design-Build Entity shall be responsible for programming of the plant PLC to accommodate the works described above including the development of additional HMI screens.

1.3.12. Wind Loading: System components shall be designed to meet or exceed the Florida Building Code (FBC) High Velocity Hurricane Zone (HVHZ) requirements supplemented by ASCE 7-05 wind loading requirements using a basic wind speed of 150 mph and importance factor of 1.15 and exposure C.

- 1.3.13. Location and routing of proposed equipment and facilities shall take into consideration the future facilities planned for WTP11. Infrastructure to be constructed by the Design-Build Entity shall not interfere with these future planned facilities.

1.4 Owner Furnished Equipment

- 1.4.1. None

1.5 Permits and Fees

It shall be the Design-Build Entity's responsibility to secure all permits required to complete the work under this contract. The Design-Build Entity shall be responsible for all inspections and requirements to close-out the completed permits. The Owner shall pay all permit fees. The Design-Build Entity shall be responsible for all Business tax fees for work within Palm Beach County or Municipalities. The Design-Build Entity shall notify the County of the permit fees and allow three (3) weeks for a check for the permit fee(s) to be issued to the Design-Build Entity.

1.6 Utility Services

The Design-Build Entity shall obtain the necessary utility services by making application for the services and paying such fees and charges required by the utility companies, including construction water meters, if required.

1.7 Tests

The Design-Build Entity shall pay for all required tests. Labor, equipment and consumables for tests and testing shall be the responsibility of the Design-Build Entity. Water required for pressure/leakage tests shall be furnished by the Owner.

1.8 Site elevations, Lines, and Grades

Where the dimensions and locations of existing pipe and utilities are of critical importance in the installation or connection of proposed work, the Design-Build Entity shall verify such dimensions and locations in the field prior to the fabrication of any materials or equipment, which is dependent on the correctness of such information. The Design-Build Entity shall employ a land surveyor registered in the State of Florida. The Design-Build Entity shall locate and protect survey control and reference points. The Design-Build Entity shall be responsible to establish elevations, lines, and levels, utilizing recognized engineering survey practices. The Design-Build Entity shall provide all labor, instruments and stakes, templates, and other materials necessary for marking and maintaining all lines and grades. The Design-Build Entity shall submit a copy of as-built drawings signed/sealed by the land surveyor that the elevations and locations of the work in Florida State plane coordinates are in conformance with the contract documents and will reference

geodetic datum NAD83. All elevations shall refer to North American Vertical Datum of 1988 (NAVD88) and include conversion from National Geodetic Vertical Datum of 1929 (NGVD29) as required.

1.9 Work Area

The Design-Build Entity shall confine his activities to the site(s) designated by Owner for the work or staging areas for materials storage. All debris, materials, pipe, and miscellaneous waste products from the proposed work shall be removed from the Project Site as soon as possible. They shall be disposed of in accordance with applicable federal, state, and local regulations. The Design-Build Entity shall be responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

The Design-Build Entity shall protect their work. When required to complete the work, the Design-Build Entity shall maintain of suitable lighting to maintain a safe working environment. Work performed outside of the established working hours requires the permission from the owner. The Design-Build Entity shall also comply with all laws or ordinances covering the protection of such work and the safety measures to be employed therein. The Design-Build Entity shall carry out his work so as not to deny access to private property. All utility access manholes, valves, and fire hydrants shall be kept accessible at all times. No trenches or holes near walkways, in roadways or road shoulders are to be left open during night hours without the permission of the Owner, and proper protection. The Design-Build Entity is responsible for the security of their work, equipment, and material at all times.

1.10 Underground Utilities

All water pipes, storm drains, force mains, gas or other pipe, telephone or power cables or conduits, and all other obstructions, whether or not shown, shall be temporarily removed from or supported across pipeline excavations. Before disconnecting any pipes or cables, the Design-Build Entity shall obtain permission from the Owner, or shall make suitable arrangements for their disconnection by the Owner. The Design-Build Entity shall be responsible for any damage to any such pipes, conduits or cables, and shall restore them to service promptly as soon as the work has progressed past the point involved. Approximate locations of known water, sanitary, drainage, power, and telephone installations along route of new pipelines or in vicinity of the work are shown on as-built drawings, but must be verified in the field by the Design-Build Entity. The Design-Build Entity shall uncover these pipes, ducts, cables, and other buried infrastructure, carefully, by hand, to verify location and depth of cover. Any discrepancies or differences found shall be brought to the attention of the Owner in order that necessary changes may be made. Where fences, walls, or other man made obstructions exist illegally in the public right-of-way, the Owner will have them removed upon adequate prior notice by the Design-Build Entity.

The Design-Build Entity shall notify "SUNSHINE STATE" at 1 (800)-432 4770 at least forty-eight (48) hours prior to performing any excavating activities. Evidence of such notice shall be furnished to the Owner prior to excavating. Design-Build Entity is responsible for all utility locates within the project site and will provide an independent locate service for all PBC WUD buried pipelines and electrical.

Design of all underground water, wastewater, and reclaimed water shall comply with the Palm Beach County Water Utilities Minimum Engineering Standards (latest edition), General Electrical Design Requirements, Palm Beach County Wellfield Protection Ordinance, Environmental Control Rule 1 (wastewater), Environmental Control Rule II (water), and applicable provisions of the Florida Administrative Code. Design submittal requirements shall be in accordance with the Palm Beach County Water Utilities Design Manual.

1.11 Maintenance of Operations

The Design-Build Entity's activities or any partial plant shutdowns shall minimize disruption to the treatment facilities and conveyance systems. The Design-Build Entity shall schedule and perform the proposed work in a manner such that the Owner can keep the existing treatment and conveyance facilities in continuous dependable operation. Operation of existing valves, gates and equipment shall be performed by Owner.

1.12 Plant Shutdowns

Owner shall approve all shutdowns. If, in the opinion of Owner, a shutdown is not required in order for the Design-Build Entity to perform the proposed work, the Design-Build Entity shall use alternative methods to accomplish the work. All shutdowns shall be coordinated with and scheduled at times suitable to Owner. Owner shall be provided a minimum of 14 calendar days notice of Design-Build Entity's need for any system or partial system shutdown. Additional notice may be required for certain shutdowns.

A shutdown work plan shall be prepared by the Design-Build Entity and submitted to the Owner for review 7 calendar days prior to the start of the shutdown event. The shutdown work plan shall include descriptions of the following at a minimum:

- Facilities to be shutdown,
- Duration of shutdown,
- Work to be conducted during shutdown (work sequence and activity descriptions),
- Special requirements and constraints (night work, temporary works, confined space etc.),
- Startup sequencing for facilities that have been shutdown.

1.13 Project Coordination

Design-Build Entity shall be solely responsible for coordination of all of the proposed work. He shall supervise, direct and cooperate fully with all sub-contractors, manufacturers, fabricators, suppliers, distributors, installers, testing agencies, and all others whose services, materials or equipment are required to ensure completion of the proposed work within the contract time.

Design-Build Entity shall cooperate with and coordinate his work with the work of any other contractor, utility service company, or Owner's employees performing additional work related to the project at the site. Design-Build Entity shall not be responsible for damage done by other contractors on site who are not under the Design-Build Entity's jurisdiction except where such loss or damage is caused by the negligence of Design-Build Entity. Design-Build Entity shall also coordinate his work with the work of others to assure compliance with schedules.

Design-Build Entity shall attend and participate in all project coordination or progress meetings and report on the progress of all work and compliance with schedules. The Design-Build Entity shall provide and maintain representative of his organization at the site at all time during performance of the work who may be reached at any time while work is in progress.

1.14 Project CPM Schedule

Design-Build Entity must prepare and maintain a project schedule using Primavera P6 software (P6) and the Critical Path Method (CPM) of scheduling. The following outlines the minimum schedule requirements. The schedule must be updated each month at a minimum and will be reviewed by the Owner to determine design and construction progress.

1.14.1 Design Schedules

The Design-Build Entity shall develop a detailed design schedule reflecting work elements at a package level by discipline. An estimate of the construction duration and staging be developed and linkages to other work packages will be clearly indicated. It will be updated at least monthly and at a minimum, milestones shall be depicted for:

- Notice-to-Proceed
- 60 percent submittal
- 90 percent submittal
- Issue for Construction submittal
- Each required permitting submittal

1.14.2 Construction Schedules

The basics of the construction schedule submittals are outlined below.

Baseline Requirement: The Construction Schedule shall use P6 and follow the Critical Path Method of scheduling, and shall reflect how the Design-Build Entity will build the project. The schedule shall show the duration of each activity so that the Project Manager can accurately monitor the progress of the work. Schedule activities must be consistent with work items listed in the Schedule of Values and be cost-loaded such that schedule updates provide an independent check on the amounts shown in the Design-Build Entity's monthly progress payment request.

Additionally, the schedule will address the logic of construction activities, including any work constraints due to:

- Operational or permit requirements
- Special requirements of the technical specifications
- Standard construction practices
- Safety of the work place
- Manpower loading and availability
- Key Resource or Materials quantity loading

Initial Construction Schedule Submittals: The Design-Build Entity shall be required to submit two schedule documents at the pre-construction conference. These are:

- The Plan of Operation for the initial 30-day period of the contract
- An initial draft of the P6 Baseline CPM schedule

The Project Managers for the Owner and the Design-Build Entity shall meet to review and discuss the 30-day plan of operation and Baseline CPM schedule shortly after submittal to the Owner's Project Manager. The Owner Project Manager's review and comment on the schedules will be limited to conformance with the sequencing and milestone requirements in the Contract Documents. The Design-Build Entity shall be required to make corrections to the schedules necessary to comply with the requirements and adjust the schedules to incorporate any missing information requested by the Owner's Project Manager. Key elements of the schedule reviews will include:

- Production rates for reasonableness
- Appropriate level of detail
- Satisfaction of contractual constraints
- Accurately reflecting submittals, procurements, training and start-up tasks
- Conforms with approved schedule of values
- Complies with industry scheduling practices
- Schedule risk and critical path discussion

The Plan of Operation depicts accomplishment of the Contractor early execution activities (e.g. mobilization, permit acquisition, submittals necessary for early material and equipment procurement, submittals necessary for long lead equipment procurement, CPM submittals, initial site work and other submittals and activities required in the first 30 days).

Construction Schedule: The P6 Baseline schedule will be included in all subsequent schedule updates and will be the basis for measuring progress and performance. Schedule updates and other reporting requirements will be detailed in the schedule specifications. The construction schedule will provide information on major construction milestones and allow for quantity tracking. Related interface activities pertinent to facilities start-up and commissioning will also be shown. The associated Schedule of Values will delineate information related to quantity unit rate reporting, labor wage rates, bulk materials pricing and other costing/pricing information as requested. Specific schedules (e.g., 90 days to Completion, 4-week look-ahead) shall be provided.

The Project Manager's review of the schedule is to ensure basic compliance with requirements and reasonableness of plan, and does not constitute an approval of the approach or direction relative to means and methods of construction.

The Contractor's Progress Schedule, at a minimum, shall identify significant interim milestones that relate to the Project's Summary Schedule, in addition to:

- Notice-to-Proceed
- Mobilization
- Substantial Completion
- Commissioning Startup and Performance Testing
- Final Completion

1.14.3 Schedule Updates

On a regular basis, and not less than monthly, summary schedules should be updated to track and monitor progress of activities, completion of contract deliverables, interim milestone achievement, start and completion dates, and other related aspects of scheduling. Additionally, any approved changes to the scope of work will be reflected in the schedules.

Progress is monitored by comparing monthly work accomplished against both the baseline plan, and the progress of work from the prior month. Starting with the first month of status updating, progress for all projects will be measured against the baseline for start and finish dates, scheduled

progress and cash flow, along with analysis for changes in logic and activities durations.

PART 2 ACCEPTANCE TEST REQUIREMENTS

The Design-Build Entity shall be responsible for coordinating and completing all commissioning activities including but not limited to the overall system startup and testing. The Design-Build Entity shall coordinate with the Owner and is responsible for providing all labor, equipment, and materials for conducting commissioning activities including but not limited to individual systems startup and testing.

2.1 Starting and Placing Equipment in Operation

Design-Build Entity shall initially start-up and place all installed equipment into successful operation according to manufacturer's written instructions and as instructed by manufacturer's field representative. Design-Build Entity shall provide all material, labor, tools, equipment, chemicals, lubricants, and expendables required to complete start-up. No system or subsystem shall be started up for continuous operation unless all components of that system or subsystem, including instrumentation, have been tested and proven to be operable as required for proposed work.

General system startup activities are anticipated to include but not be limited to cleaning; removing temporary protective coatings; flushing and replacing greases and lubricants as required by manufacturers; lubrication; checking shaft and coupling alignments and resetting where required; checking and setting motor, pump and other equipment rotation, safety interlocks, and belt tensions; checking and correcting if necessary leveling plates, grout, bearing plates, anchor bolts, fasteners and alignment of piping which may put stress on equipment; performing any adjustments; providing chemicals and lubricants and all other required operating fluids; providing fuel, electricity, water, filters; and, other expendables required for startup of equipment.

Owner shall provide sufficient personnel to assist Design-Build Entity in the start-up, but the prime responsibility for proper mechanical operation shall belong to Design-Build Entity. Manufacturer's representatives shall be present during initial start-up and operation. Owner shall assume responsibility for operation of the equipment upon completion of start-up and placing equipment in operation.

2.2 Minimum Start-Up Requirements

- 2.2.1. The Design-Build Entity shall perform the following engine generator pre-start up checklist in accordance with manufacturer guidelines: Generator set equipment installation/mounting, engine oil level, engine coolant system level, engine radiator shroud installation, day tank fuel level (if applicable), fuel system installation, mechanical and

electrical connections, battery installation, battery voltage, battery charger operations and installation, engine sensors and controls, all equipment interface interconnects, interface wiring with new main switchboard, remote annunciation/communication interface wiring, exhaust system installation and connections and all other fluids. Checklist is not limited to items listed above, others shall be performed as required by manufacturer.

- 2.2.2. The Design-Build Entity shall check each electrical control circuit to assure that operation complies with regulations and requirements of proposed work and to provide desired performance.
- 2.2.3. The Design-Build Entity shall inspect for cleanliness, and clean and remove all foreign materials, verify alignment, replace defective bearings and those, which run rough or noisy, and grease as necessary in accordance with manufacturer's recommendations.
- 2.2.4. After system has been placed in operation the Design-Build Entity shall clean strainers, drives, pockets, orifices, valve seats and headers in fluid system to assure freedom from foreign materials. He shall remove rust, scale and foreign materials from equipment and renew defaced surfaces. All visible leakage shall be repaired.
- 2.2.5. The Design-Build Entity shall vent gasses trapped in any part of systems and verify that liquids are drained from all parts of gas or air systems.
- 2.2.6. The Design-Build Entity shall adjust tension in V-belt drives, and adjust varipitch sheaves and drives for proper equipment speed, adjust drives for alignment of sheaves and V-belts, and clean and remove foreign materials before starting operation.
- 2.2.7. The Design-Build Entity shall check each motor for comparison to amperage nameplate value and correct conditions which produce excessive current flow and exist due to equipment malfunction.
- 2.2.8. The Design-Build Entity shall check glands and seals for cleanliness and adjustment before running pump; inspect shaft sleeves for scoring; inspect mechanical faces, chambers, and seal rings, and replace if defective; and verify that piping system is free of dirt and scale before circulating liquid through the pump.
- 2.2.9. The Design-Build Entity shall inspect both hand and automatic control valves, clean bonnets and stems; tighten packing glands to assure no leakage, but permit valve stems to operate without galling; replace packing on any valve that continues to leak; remove and repair bonnets that leak; and coat packing gland threads and valve stems with a surface preparation of "Moly-Cote"

or "Fel-Pro" after cleaning. The Design-Build Entity shall verify that control valve seats are free from foreign material and are properly positioned for intended service.

- 2.2.10. System start-up and operational testing procedures shall not be limited to those specified herein. Others shall be performed as required to prove that the system functions and performs as described and required by this Design-Build Criteria Package.

2.3. Equipment Startup and Performance Testing

- 2.3.1. The Design-Build Entity shall be responsible for performance testing during startup of all mechanical, electrical equipment and systems.
- 2.3.2. Provide a testing plan setting forth the sequence in which all testing work required for the proposed upgrades will be implemented.
- 2.3.3. Documentation of the results of all equipment and system tests shall be submitted to the Owner. Provide calibration tags for all Design-Build Entity furnished and installed equipment certifying the date of calibration.
- 2.3.4. The Design-Build Entity shall also be responsible for providing a Certificate Of Proper Installation (COPI) for equipment from the applicable equipment supplier/manufacturer. COPIs will be provided to the Owner or the Owner's Representative prior to commencing any commissioning, startup and testing activities. COPIs will be included in the O&M Manual.

2.4. Instruction of Operations and Maintenance Personnel

Training shall be provided prior to turning over the operation of the new generator, main switchboard and A/C units to the Owner. No system, unit process or any piece of equipment shall be started up for continuous operation without the approved operation and maintenance manuals being turned over to the Owner.

Design-Build Entity shall provide services of manufacturer's operation and maintenance training specialists to instruct Owner's personnel in recommended operation and maintenance procedures for products and equipment. Manufacturer's representative shall provide a combination of classroom and field training activities. All training shall be conducted at the site, unless otherwise stated in the Specifications. Owner reserves the right to videotape training sessions.

Training of Owner's personnel shall commence only after acceptable preliminary operation and maintenance data has been provided and, equipment has been started and placed into operation, equipment and system startup and performance testing has been completed. The Design-Build Entity shall provide written documentation and checklists outlining important training items, and provide spreadsheets needed to document new processes for input by operators.

PART 3 TECHNICAL REQUIREMENTS

3.1. Plant Site / Civil Requirements

The Design-Build Entity shall be responsible for becoming completely familiar with the site conditions in connection with developing the final site plan including all site investigations. If analysis of subsurface conditions, geotechnical conditions, and soil borings are required to complete the work, it shall be the responsibility of the Design-Build Entity to perform this work.

3.2 Demolitions and Equipment Removal (See Summary of Work)

Design-Build Entity shall be responsible for all labor, materials, equipment, and incidentals required for demolitions and pay for all disposal fees. Design-Build Entity shall not start removals without the permission of the Owner. At least 48 hours prior to commencement of any demolition activities, the Design-Build Entity shall advise the Owner, in writing, of the proposed schedule.

Design-Build Entity shall carry out operations so as to avoid interference with Owner's operations and work in the existing facilities. Design-Build Entity shall perform all demolition and removal work so as not to interfere with the use and safe passage to and from adjacent structures and shall prevent damage or injury to structures, occupants, and adjacent features, which might result from falling debris or other causes. Design-Build Entity shall erect and maintain barriers, lights, sidewalk sheds, and other necessary protective devices. The Design-Build Entity is responsible for repairing damage to the Owner's property or facilities, caused by the Design-Build Entity's activities.

Design-Build Entity shall not bring explosives on site or use explosives without written consent of authorities having jurisdiction. Design-Build Entity shall use water sprinkling, temporary enclosures, and other suitable methods for dust control within the lowest practical level in compliance with governing regulations.

Surfaces of walls, floors, ceilings, or other areas, which are exposed by any of the removals, and which will remain as architecturally finished surfaces shall be repaired and re-finished by Design-Build Entity with the same or matching materials as the existing adjacent surface. Adjacent structures, facilities, and

improvements impacted by dust, dirt, and debris caused by demolition operations shall be cleaned and returned to pre-construction conditions.

Where piping that is to be removed passes through existing walls, the piping shall be cut off and properly capped on each side of the wall. When underground piping is to be altered or removed, the remaining piping shall be properly capped. Abandoned underground piping may be left in place and grouted under major structures/roadways, unless it interferes with the work. Any changes to potable water piping work shall be made in conformance with all applicable codes and under the same requirements as other underground piping.

All materials and equipment removed from existing work shall become the property of Design-Build Entity, except for those which Owner has identified and marked for their use. All materials and equipment marked by the Owner for its use shall be carefully removed by Design-Build Entity so as not to be damaged, and shall be cleaned and stored in a protected location specified by the Owner. Design-Build Entity shall dispose of all demolition materials, equipment, debris, and all other items not marked by the Owner, off the work site and in conformance with all existing applicable laws and regulations. Upon completion of the work, all materials, equipment, waste, and debris of every sort shall be removed and premises shall be left, clean, neat, and orderly.

3.3 Trenching, Excavation and Backfill

The Design Build Entity will adhere to all OSHA and PBC regulations when performing all excavating activities, including but not limited to cabling system and generator pad. Written documentation shall be provided indicating compliance with Florida Trench Safety Act.

All remaining spoil piles shall be removed from site.

Design-Build Entity shall furnish all labor, materials, equipment and incidentals required to perform all excavating, backfilling and disposing of earth materials required for the purpose of constructing structures, conduits, pipelines, grading, and other facilities required to complete the work in every respect.

Design-Build Entity shall be solely responsible for designing, installing, operating and maintaining whatever system is required to satisfactorily accomplish all necessary sheeting, bracing, protection, underpinning and dewatering.

Design-Build Entity shall be responsible for all field test data and shall submit to Owner copies of all test reports from his testing laboratory.

Design-Build Entity shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. Design-Build Entity shall

obtain all necessary permits including but not limited to work in roads and rights of way. Design-Build Entity shall also obtain permits as required by local, state and federal agencies for discharging water from excavations.

The use of explosives will not be permitted.

Data on subsurface conditions will be made available by Owner for the convenience of Design-Build Entity. The reports are not intended as a representation or warranty of continuity of such conditions between soil borings. Owner will not be responsible for interpretations or conclusions drawn by Design-Build Entity. Additional test borings and other exploratory operations may be made by Design-Build Entity at no cost to Owner.

Drawings from existing records showing certain surface and underground structures adjacent to the work will be made available by Owner. It is not guaranteed to be correct or complete and is shown for the convenience of the Design-Build Entity. Design-Build Entity shall explore ahead of the required excavation to determine the exact location of all structures. They shall be supported and protected from damage by the Design-Build Entity. If they are broken or damaged, they shall be restored immediately by the Design-Build Entity at its expense.

Design-Build Entity shall locate existing underground utilities in the areas of work. If utilities are to remain in place, Design-Build Entity shall provide adequate means of protection during earthwork operations. If uncharted or incorrectly charted piping or other utilities are encountered during excavation, Design-Build Entity shall consult the Owner immediately for directions as to procedure. Design-Build Entity shall cooperate with Owner and utility companies in keeping respective services and facilities in operation. Design-Build Entity shall repair damaged utilities to the satisfaction of Owner.

Design-Build Entity shall not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by Owner and then only after acceptable temporary utility services have been provided.

3.4 Cast-In-Place Concrete

Where required for wall penetrations, pipe supports, and other repair or replacements required to complete the work, the Design-Build Entity shall be responsible for providing concrete consisting of portland cement, fine and coarse aggregate, water, and approved admixtures; then combined, mixed, transported, placed, finished and cured to accommodate the proposed work. All admixtures, curing compounds, and related products used in concrete or the curing and

repair of concrete, which can contact potable water, shall be certified as conforming to the requirements of ANSI/NSF 61 for contact with potable water when in the finished concrete.

3.5 Miscellaneous Metals

All metals shall be non-ferrous except of steel reinforcing and as approved by the Owner. All bolt, nuts and washers shall be 316 stainless steel and the nuts shall be coated to prevent galling. All anchor bolts shall be 316 stainless steel. Stanchions, pipe supports, equipment bases, braces, unistrut and straps shall be 316 stainless steel or aluminum. Dissimilar metal protection shall be provided through use of appropriate dielectric materials where required.

3.6 Painting and Coating

Design-Build Entity shall provide all labor, materials, tools, equipment, and incidentals as required to furnish and apply coating systems for surface preparation and coating of all new and existing interior and exterior surfaces identified as part of the work. Manufacturer's recommendations including surface preparation, cure times, application thickness, application method, applicability of selected paintings and coatings for their intended use shall be strictly followed. Items to be coated shall include but not be limited to walls, floors, piping, equipment, supports and other pertinent accessory items or area damaged by construction activity.

Owner's approval shall be required for all components of the surface preparation, selection of colors, and paint system application before the start of proposed work.

Color-coding of pipelines, valves, equipment and ducts shall comply with applicable standards of ANSI A13.1, ANSI Z535.1, and 40 CFR 1910.144. Finish coats of paint for pipelines and equipment shall be coded in basic colors. Colors shall be brilliant, distinctive shades matching safety and pipeline colors per ANSI Z535.1, Recommended Standards for Water Works; Recommended Standards for Wastewater Facilities, color specifications for safety colors and other primary colors.

Provide pipe labels with flow arrows at each change in direction, tees (all sides) and every 20 feet of straight run.

3.7 Valves and Piping Requirements

The Design-Build Entity is responsible for the final sizing and selection of all equipment, pipe, supports, and associated materials. The Design-Build Entity shall conform to the current version of the Palm Beach County Water Utilities Minimum Design Standards and Approved Materials List.

At a minimum, the following information shall be submitted to the Owner for review and approval prior to installation:

- Detailed drawings and manufacturer's data for valves, pipe, fittings, gaskets, harnessing, supports, bolt kits, couplings, and all other pertinent materials required to complete the work.;
- Certificates of compliance with applicable referenced standards and any provisions for valves, pipe, joints, fittings, coatings, linings; sleeves, gaskets, harnessing, and all other appurtenances;
- Field pressure testing;
- Flushing and disinfection plans; and
- Signed and sealed calculations for pipe support systems.

Materials shall be delivered to the site to ensure uninterrupted progress of the work. Pipe, fittings, valves and associated other materials shall be handled carefully with approved handling devices. Materials shall be stored on heavy wood blocking or platforms so they are not in contact with the ground. Delivered materials shall be inspected for cracked, gouged, chipped, dented or other damage to the packaging or materials. If such damage is found, damaged materials shall be rejected and immediately removed from the site. If in the process of manufacture, transportation, storage or handling, any valves, pipe, fittings, or associated other materials are damaged, such material shall be rejected and replaced at the Design-Build Entity's expense.

Pipe interiors shall be kept completely free from dirt and foreign matter. All pipe shall be installed in strict accordance with the manufacturer's instructions and recommendations. When pipe must be cut to fit in the field, the work shall be performed using tools and equipment specifically designed for cutting the pipe, so as to avoid damage to the pipe and to leave a smooth end. Improperly cut and/or fitted pipe will be rejected and replaced at the Design-Build Entity's expense.

The manufacturer's field representative shall certify the installations observed were satisfactorily completed and all installation crews were familiar with the proper methods and procedures for the pipeline installation.

3.8 Electrical Requirements

3.8.1. Basic Requirements

Design-Build Entity shall design and provide all labor, materials, equipment and incidentals to complete the electrical work. All systems shall be properly grounded. Exterior systems shall have lightning protection.

3.8.2. Codes

Material and equipment shall be installed in accordance with the current standards and recommendations of the National Electrical Code, the National Electrical Safety Code, and with local codes, which apply. Where discrepancies arise between codes, the most restrictive regulation shall apply.

3.8.3. Area Classifications

3.8.3.1. Wet Locations: The following areas shall be considered wet locations:

3.8.3.1.1. All outdoor areas.

3.8.3.1.2. All indoor areas below grade unless otherwise specified.

3.8.3.1.3. Materials, equipment and incidentals in areas identified as wet locations shall meet NEC and NEMA requirements for wet locations. Enclosures shall meet NEMA 4 requirements as a minimum. Conduits shall be terminated at enclosures with watertight, threaded hubs.

3.8.3.2. Corrosive Locations

All chemical storage and pumping areas or rooms. Materials, equipment and incidentals in areas identified as corrosive shall meet NEC and NEMA requirements for corrosive locations. Conduit systems shall be PVC coated aluminum and enclosures shall meet NEMA 4X requirements. Conduits shall be terminated at enclosures with watertight hubs. Independent supports shall be 316 stainless steel struts.

3.8.4. Electrical Equipment

All new electrical equipment shall be capable of operating successfully at full-rated load, without failure, with an ambient outside air temperature of 0 degrees F to 122 degrees F and an elevation of 400 feet (MSL). All electrical devices and equipment shall have ratings based on 75 degrees C terminations. All electrical equipment enclosures at a minimum shall meet NEMA 12 requirements.

3.8.5. Schematic Diagrams

Schematic diagrams shall be prepared by the Design-Build Entity to act as guidance in fulfilling the operational intent of the conceptual documents. It shall be the Design-Build Entity's responsibility to meet all safety and electrical codes, and to provide all equipment, appurtenances and specialty items required to provide for complete and operable systems. Review of control schemes submitted by Design-Build Entity shall not relieve Design-Build Entity

of their contractual responsibility to provide complete and successfully operating systems.

3.8.6. Raceway Systems

Design-Build Entity shall furnish and install conduit and fittings to form complete, coordinated and grounded raceway systems. Design-Build Entity shall provide for the proper installation of all conduits for each system.

- 3.8.6.1. PVC coated rigid aluminum conduit for exposed indoor conduit runs in non-corrosive areas and PVC coated rigid aluminum at all other sites.
- 3.8.6.2. PVC Schedule 80 for individual conduit runs direct buried in earth
- 3.8.6.3. Schedule 40 PVC for conduit runs embedded in or under structural concrete slabs or in concrete ductbanks (all sites).
- 3.8.6.4. PVC schedule 80 conduit for exposed indoor and outdoor runs in corrosive areas.
- 3.8.6.5. Flexible conduit for connections to motors and equipment.

3.8.7. Inspections, Testing and Adjustments

Accompany the normal installation tests with inspections to demonstrate to the satisfaction of the required jurisdictional authorities the following:

- 3.8.7.1. Connections: All circuits are properly connected in accordance with the drawings and applicable approved shop drawings.
- 3.8.7.2. Operation: All circuits and devices are operable.
- 3.8.7.3. Identification: All conductors are properly identified at each terminal.

Test each electrical circuit after permanent cables are in place to demonstrate that the circuit and connected equipment perform satisfactorily and that they are free from improper grounds and short circuits. Individually test 600-volt cables for insulation resistance between phases and from each phase to ground. Test after cables are installed and before they are put in service with a Megger whose rating is suitable for the tested circuit. Tests shall meet with the applicable specifications of ICEA S 66 524 and NEMA WC7 1971. The insulation resistance for any given conductor shall not be less than 1 megohm for 600 volt and less service. Any cable not meeting this value or which fails when tested under full load conditions shall be replaced with a new cable for the full length. Megger testing reports shall be submitted and included in O&M Manual.

Test shielded instrumentation cable shields with an ohmmeter for continuity along the full length of the cable and for shield continuity to ground. Connect

shielded instrumentation cables to a calibrated 4-20 milliamp DC signal transmitter and receiver. Test at 4, 12, and 20 milliamp transmitter settings.

Test the completed ground systems for continuity and for resistance to ground using an electrical ground resistance tester. Ground system resistance must be less than 5 ohms. Add up to two additional rods, spaced at 20 feet minimum from other electrodes, until resistance is less than 5 ohms.

Operate all starters, circuit breakers and associated equipment to demonstrate suitability and compliance with Specifications and reference standards, except for short circuit interrupting rating or other inherent design features covered by shop tests. Test all motors for direction of rotation and reverse connections if necessary. Check control circuits to determine that operation and sequence are correct and adjust limit switches, pressure switches, float switches, timers and other devices to give proper operation.

Generators shall be tested under load for 24 hours without failure or shutdown.

3.9 Instrumentation and Control Requirements

3.9.1. General

Design-Build Entity shall provide all labor, materials, equipment and incidentals as shown, specified and required to furnish, install, calibrate, test, start-up and place in satisfactory operation a complete and operating system for proposed work, including programming of the PLC, SCADA, and all required wire terminations. Tag number, equipment number, and description shall match the Owners numbering convention standards.

3.9.2. Calibration, Start-Up and Testing

Field verify the calibration and performance of each instrument prior to start-up of the associated equipment, and document on a separate sheet for each.

3.9.3. System Check-Out and Start-Up Responsibilities

Design-Build Entity shall retain the services of a single system supplier to supervise and/or perform check out and start up of all system components. As part of these services, the system supplier shall coordinate and include check-out and start-up for those equipment items not manufactured or provided by him. The services of an authorized manufacturer's representative to check the equipment installation and place the equipment in operation may be required. The manufacturer's representative shall be thoroughly knowledgeable about the installation, operation and maintenance of the equipment.

Check and approve the installation of all instrumentation and control system components and all cable and wiring connections between the various system components prior to placing the various processes and equipment into operation. Conduct a complete system checkout and adjustment, including calibration of all instruments, tuning of control loops, checking operation functions, and testing of final control actions. When there are future operational functions included in this work, they should be included in the system checkout. All problems encountered shall be promptly corrected to prevent any delays in start up of the various unit processes.

System supplier shall provide all test equipment necessary to perform the testing during system checkout and start up. Design-Build Entity and system supplier shall be responsible for initial operation of monitoring and control system and shall make any required changes, adjustment or replacements for operation, monitoring and control of the various processes and equipment necessary to perform the functions intended.

Design-Build Entity shall furnish to the Owner certified calibration reports for field instruments and panel mounted devices specified in this Section as soon as calibration is completed. Design-Build Entity shall furnish Owner an installation inspection report certifying that all equipment has been installed correctly and is operating properly. The report shall be signed by authorized representatives of both Design-Build Entity and the system supplier.

3.9.4. Instrumentation and Control System Field Test

Following the plant monitoring and control system checkout and initial operation, system supplier, under the supervision of the Design-Build Entity, shall perform a complete system test to verify that all equipment and programmed software is operating properly as a fully integrated system, and that the intended monitoring and control functions are fully implemented and operational. Any defects or problems found during the test shall be corrected by system supplier, and then retested to demonstrate proper operation. Following demonstration of all system functions, the plant monitoring and control system including field sensors/transducers and instruments, and telemetry system shall be running and fully operational for a continuous 72 hour period.

3.9.5. Control Panels and Enclosures

Control panels located inside control or electrical room areas shall be NEMA 12 rated unless differently noted on drawings. All others shall be stainless steel or non-metallic NEMA 4 except in corrosive areas, which shall be NEMA 4X. Provide panel ventilation or air conditioning if required by ambient conditions. Use pan type construction for doors. Door widths shall not exceed 36-inches. Exterior panel with displays shall face north. Exterior control panels shall be 316 stainless steel with powder coated white epoxy exterior finish.

3.9.6. Surge Protection

Surge protection shall be provided to protect all electronic instrumentation from surges propagating along the signal, telephone, and power supply lines. Locate the suppression device as close as possible to the load device. The protection systems shall be such that the protection level shall not interfere with normal operation, but shall be lower than the instrument surge withstand level, and be maintenance free and self-restoring. Instruments shall be housed in suitable metallic cases, properly grounded. Ground wires for all surge protectors shall be connected to a good earth ground and where practical each ground wire run individually and insulated from each other.

PART 4 SUBMITTALS

4.1 Design-Build Entity submittals shall include but not be limited to:

- 4.1.1. Utility Locate Plan
- 4.1.2. Demolition Plan
- 4.1.3. Biological Odor Control System
- 4.1.4. Shutdown Plan
- 4.1.5. Commission Plan for startup and testing activities
- 4.1.6. Tank Closure Report
- 4.1.7. 60% Drawings and Calculations
- 4.1.8. 90% Drawings and Calculations
- 4.1.9. Shop Drawings
- 4.1.10. O&M Manual
 - 4.1.10.1. Certificate of Proper Installation (COPI)
 - 4.1.10.2. Testing reports (e.g. megger testing)
- 4.1.11. Spare Parts and Tools
- 4.1.12. 90-day Operating Supplies
- 4.1.13. Schedules
 - 4.1.15.1. Baseline Schedule
 - 4.1.15.2. Initial 30-day Plan of Operation
 - 4.1.15.3. Four week Look Ahead Schedules
 - 4.1.15.4. Minimum monthly schedule updates
 - 4.1.15.5. Rotary Drum Installation Plan
 - 4.1.15.6. 90-days to Completion Schedule
- 4.1.14. Permits
- 4.1.15. Warranty

ATTACHMENT - K

Vendor Quotes



State Certificate # EC-13003753

Date: 1 Aug. 16

To: Globaltech, Inc.
1075 Broken Sound Pkwy NW
Suite 103
Boca Raton, FL 33487

Attention: Bruce Rahmani

We Purpose to provide a complete Electrical Installation per Plans and Specifications.
For PBCWUD WTP 11 Ph2

Electrical Plans E-1 – E-10 (with latest Revisions 27 Jul. 16)

This Proposal subject to renegotiation after (90 Day Period)

Purposed Base Amount: \$ 44,500.00
(Forty Four Thousand Five Hundred Dollars)

Thank you for the opportunity to provide this Proposal.

Sincerely

Thomas Laessig
President

711 Commerce Way Suite # 6 Jupiter, FL. 33458
Ph. 561-575-4270 Fax 561-575-4269 Email: PowerlineOfSouth@bellsouth.net

Energy Efficient Electric, Inc.
1600 Mercer Ave. Unit 6
West Palm Beach, FL. 33401
Phone (561) 655-7211 Fax (561) 655-9661
Mobile (561) 722-1381
E-Mail Address: rene@energyeff.com
State License #EC 0001096

August 3, 2016

**Electrical Scope of Work
PBC WTP 11 Phase 2 Improvements**

Quote # 31123

We are pleased to provide your firm with our scope and proposal for the necessary electrical work on the above referenced project. Our scope and proposal is based on preliminary drawings prepared by Hillers dated June 2016.

Included:

1. Demo shall consist of disconnecting existing electrical equipment for removal by GT.
2. Assist with the installation of the 24VDC power supply panels, LIT's, FIT's and supports furnished by GT.
3. Furnish and install conduit and wire as indicated on the drawings. Excavate and backfill to a rough grade. Final restoration by GT.
4. Furnish and install lightning protection and grounding around surge tank and Hypo tank as indicated on the drawings.

Excluded:

1. Permit fees.
2. Instruments, surge arrestors, aluminum ramps, air compressor control panel mods and pump skids.
3. Concrete and asphalt cutting and patching.
4. Concrete pads.

Lump Sum \$50,273

We appreciate the opportunity to quote your organization on this project. If you have any questions, please call me at the office.

Thank You Very Kindly,

Rene Viau

Vice President

Residential ----- Lighting Systems ----- Commercial ----- Industrial

C. R. Dunn, Inc.
Electrical Construction
1202 Pope Lane / Lake Worth, Fl. 33460
(561) 585 2155 / fax (561) 585 1233
EC 0001097

PROPOSAL

To: Globaltech
Attn: Joshy Joseph

Date: July 29, 2016

Project: WTP 11 Phase II

We submit the following proposal to you on a confidential basis, the information in this proposal is not to be shared with any other person without our written permission. Proposal pertains to the following plans and specifications.

Furnish and install conduit and wiring per drawings by Hillers Electrical Engineers.
Demo as required to existing equipment and wiring.
Install lightning protection and grounding for Hypochlorite tank and Surge tank
Furnish and install electrical duct bank, concrete, backfill and compaction.
Finished concrete and final restoration is by others.
Instrumentation is furnished and installed by others.
Mechanical work is not included.

Lump Sum	\$62,711.00
----------	-------------

This proposal is to remain confidential. This proposal is accepted by you in any of the following methods: A) Utilizing our prices And or value engineering ideas for any purpose, including but not limited to sharing or shopping our price or ideas with any other Person. B) Requesting us to proceed with any of the work for this project. C) Written acceptance of this proposal including letter of intent to enter into a contract.

Respectfully submitted

By: Charles G. Fitch



July 26, 2016

GlobalTech, Inc.
1075 Broken Sound Parkway NW
Suite 203
Boca Raton, Florida 33487

Attn: Troy Lyn [tlyn@globaltechdb.com]

RE: PBCWUD Water Treatment Plant (WTP) 11 Phase 2

Wantman Group, Inc., (WGI) is pleased to provide this scope of services and fee proposal to GLOBALTECH for Structural Engineering Services associated with The **Water Treatment Plant 11 Phase 2 Projects**. Structural services will include analysis of the existing surge tank, existing and proposed sodium hypo chloride tank supports and foundations. These foundations and supports will be analyzed using the current Florida Building Code 2014 (5th Edition) prescribed wind loads.

Our scope of services includes:

TASK 1

Initial Site Visit

\$1,260.00

An initial site visit will be made at the WTP 11 to review the condition of the existing tank foundations.

TASK 2

Foundation Analysis.

\$3,460.00

The supports and foundations of the existing surge tank, existing and proposed sodium hypo chloride tank will be analyzed for adequacy using the FBC 5th Edition prescribed wind loads. Anchor bolts will be sized for the proposed sodium hypo chloride tank. A memo of foundation adequacy will be issued to Global Tech for design documentation.

TOTAL

\$4,720.00

If you have any questions, please give me a call.
Respectfully,

WANTMAN GROUP, INC

Jeffrey Bergmann, P.E.
Senior Project Manager

S:\2016-Jobs_Proposals\PBCWUD WTP 11 Phase 2 GT01 Admin\Proposals\PBCWUD WTP-11 Phase2.docx



June 20, 2016

Serving the Water & Wastewater Plant Industry for over 25 Years, Please visit us at:
www.mcdadewaterworks.com

Globaltech
 Attn: Bruce Rahmani

Project: PBC WTP 11 Phase 2 Improvements
Bid Date: N/A
Addendum: N/A
ARRA - No

<u>QTY</u>	<u>DESCRIPTION</u>	<u>UNIT \$</u>	<u>EXT \$</u>
Degasifier Modifications			
6	8" FRP 90 Degree Bend Flanged	941.18 \$	5,647.06
1	8" x20' FL FRP spool	1,591.76 \$	1,591.76
2	8" FRP Flange	162.35 \$	324.71
3	8"x4' FL FRP spool	670.59 \$	2,011.76
2	8"x1' FL FRP spool	498.82 \$	997.65
3	8"x2' FL FRP spool	556.47 \$	1,669.41
1	8" x18' L FL FRP Spool	1,478.82 \$	1,478.82
2	8" FL TEE FRP	1,430.59 \$	2,861.18
2	8" 45 Degree Bend FRP	1,161.18 \$	2,322.35
2	8" x8' L FL FRP Spool	901.18 \$	1,802.35
2	8" x 6" FRP Flanged Reducer	784.71 \$	1,569.41
2	6" x 2' L FRP Flanged Spool	441.18 \$	882.35
2	6"x1' L FRP Flanged spool	396.47 \$	792.94
2	6" 90 Degree Flanged Bend FRP	611.76 \$	1,223.53
1	6" FL FRP Tee	1,083.53 \$	1,083.53
1	6" x 12' L Flanged FRP spool	885.88 \$	885.88
1	6" x 4' length Flanged FRP spool	529.41 \$	529.41
1	10" x6" FL FRP Reducer	1,042.35 \$	1,042.35
1	10" x 8" FL FRP Reducer	1,042.35 \$	1,042.35
2	10" x10" x 10" FL FRP Tee	2,398.82 \$	4,797.65
4	10" x 2' L FL FRP Spool	880.00 \$	3,520.00
2	10" x 1' L FL FRP Spool	808.24 \$	1,616.47
2	10" x 8' Flanged FRP spool	1,315.29 \$	2,630.59
6	10" 45 Degree Bend FL FRP	1,769.41 \$	10,616.47
1	10" x 10' L FL FRP Spool	1,461.18 \$	1,461.18
4	10" x 3' L FL FRP Spool	952.94 \$	3,811.76
2	10" Butterfly valve w Geared manual actuator/hand wheel	702.35 \$	1,404.71
3	8" Butterfly valve w Geared manual actuator/hand wheel	535.29 \$	1,605.88
3	6" Butterfly valve w Geared manual actuator/hand wheel	476.47 \$	1,429.41
1	6" check valve (Rubber Flapper w/ Position Indicator)	864.71 \$	864.71

16	6" FRP Flange accy set (316SS Finish Hex w/ Double Washer w/ 1/8" Full Face Epdm Gasket)	26.80	\$	428.80
26	8" FRP Flange accy set (316SS Finish Hex w/ Double Washer w/ 1/8" Full Face Epdm Gasket)	28.13	\$	731.25
26	10" FRP Flange accy set (316SS Finish Hex w/ Double Washer w/ 1/8" Full Face Epdm Gasket)	50.54	\$	1,313.98
6	8" Blind Flange	183.75	\$	1,102.50
6	10" Blind Flange	347.50	\$	2,085.00
4	Pipe Support for 6" FRP piping (316SS 53A w/ 51TBS, 6-00" to CL)	552.50	\$	2,210.00
10	Pipe Support for 8" FRP piping (316SS 53A w/ 51TBS, 6-00" to CL)	556.25	\$	5,562.50
14	Pipe Support for 10" FRP piping (316SS 53A w/ 51TBS, 6-00" to CL)	593.75	\$	8,312.50
100	6" PVC Pipe Sch 80	9.71	\$	971.43
2	6" 45 Degree Bend Sch 80 SXS	31.53	\$	63.06
10	6" Flange PVC Sch 80 Socket Van-Stone	20.01	\$	200.14
10	6" PVC Flange accy set (316SS Finish Hex w/ Double Washer w/ 1/8" Full Face Epdm Gasket) (4" long)	29.30	\$	293.00
Surge Tank Modifications				
1	12" SS Butterfly valve w handwheel	2,081.18	\$	2,081.18
5	12" Flange Accy set (316SS Finish Hex w/ Double Washer w/ 1/8" Full Face Epdm Gasket) (5" long)	81.54	\$	407.69
1	12" PVC 90 Degree Bend Sch 80 SXS	698.43	\$	698.43
20	12" PVC Pipe Sch 80	25.95	\$	519.00
4	12" PVC Flange Sch 80 Socket Van-Stone	75.31	\$	301.25
Flow Meter Vault Piping Modifications				
2	24" Flange accy set for HDPE/ SS 316 Flange connection (Bolts & Nuts)	931.43	\$	1,862.85
2	24" SS 316 Flange welded 90 Degree Bend	7,741.34	\$	15,482.68
1	24" x 10' Length SS 316 Flanged Spool W/ 2 tapping outlets (Outlet 1- 2" dia x 1' Length SS welded Flange) (Outlet 2- 3" dia x 1' Length SS welded Flange)	7,243.33	\$	7,243.33
1	2" SS 316 Blind Flange with accy set (316SS Finish Hex w/ 1/8" Full Face NSF EPDM Gasket) (Outlet 2- 3" dia x 1' Length SS welded Flange)	58.28	\$	58.28
1	3" SS 316 Blind Flange with accy set (316SS Finish Hex w/ 1/8" Full Face NSF EPDM Gasket)	69.29	\$	69.29
1	24" x 10' Length SS 316 Flanged spool with one 2" taping for the ARV	6,712.83	\$	6,712.83
1	SS 316 2" ARV assembly (ARI Comb ARV for Water - Plastic Body) (2 nipple, Ball Valve, and ARI D-040PT02 NSF)	864.43	\$	864.43
4	24" SS 316 Flange Accy Set (Bolts & Nut) (316SS Finish Hex w/ 1/8" Full Face NSF EPDM Gasket)	659.68	\$	2,638.70
6	SS 316 Pipe support for 24" SS Pipe (Adj Saddle Type 4'-0" to CL)	1,538.61	\$	9,231.66
1	24" x5' Length SS 316 Flange welded spool	5,362.96	\$	5,362.96
Chemical Containment HDPE				
1400	3" HDPE pipe (DR17) Black	3.50	\$	4,900.00
6	3" HDPE x 3" MNPT Male Adapter	49.39	\$	296.34
6	3" HDPE Couplings	35.55	\$	213.30

2800 1/2" OD FPA/PTFE pipe (Tubing PFA 450 HP 1/2" OD x 3/8" ID x 0.062 Wall) 9.00 \$ 25,200.00

TOTAL THIS BID ITEM - TAX NOT INCLUDED

\$170,935.98

Notes:

- 1. All Ductile Iron MJ Fitting Quoted C153 (Compact)
- 2. All Fitting and Valves Quoted Less Accessories
- 3. All Buried Ductile Iron Pipe and MJ Fitting Quoted Bituminous Coated
- 4. All Flange Pipe and Fitting Quoted Prime Coated
- 5. All Ductile Iron Pipe and Fitting Quoted Cement Lined
- 6. All Ductile Iron Fitting (MJ & Flange) Quoted Are Globally Sourced
- 7. At this time US Pipe and American are not producing fittings 24" and smaller. Fittings are only made by Fitting Manufactures and brands are blended when we ship projects based on availability at time of order.
- 10. All valve boxes quoted less extension stem unless noted otherwise.
- 11. Flange Accessories Set Prices are Firm for 14 Days from Bid Date, & Must Ship Within 28 Working Days from Bid Date.
- 13. Lead Time on the following valves are:
Butterfly Valve: 8-10 wks
Check Valve: 12-16 weeks
- 14. Pipe Supports - Do not include engineering calculations (ie. wind, seismic, etc). We can recommend someone who can provide this information if requested.
- 15. Line drawings are not included. If needed add \$800.00 per sheet.
- 16. Valve warranty for project is (2) years from date of shipment. Extended warranty can be pu for a additional 1% of the purchase price for each additional year warranty up to 3 year max date of shipment.

**** DISCLAIMER:**

McDade Waterworks, Inc. reserves the right to increase prices and/or change escalation terms at any time based on the potential of continued cost volatility.

Confidentiality. Both McDade and Customer agree that the terms of this quotation, including the attached are confidential and shall be held in strict confidence by both parties and may not be disclosed unless re Customer agrees not to post or publicly display the terms or the pricing. Customer also agrees that any c or negotiations regarding the attached pricing or any changes thereto (including but not limited to future p offerings) are also confidential and are pursuant to this provision of confidentiality.

The above quotation is **our** interpretation of the plans and specifications and should be reviewed by **you** firm for accuracy. Prices do not include valve boxes, ext stems, wrenches, start-up services, etc. unless specifically noted in our quotation. Prices are based on full freight allowed truckload shipments to the pr Additional materials ordered will be furnished on a case by case basis.

Terms: Net 30 Days
FOB: S/P - FFA to Jobsite (Based on Terms Above)

Please call should you have any questions or need any additional pricing.

Sincerely,

Wesley Bunn



Post Office Box 16039 - Tampa, FL 33687-6039

(813) 740-1144 - FAX (813) 627-9387

July 7, 2016

Serving the Water & Wastewater Plant Industry for over 25 Years, Please visit us at:
www.mcdadewaterworks.com

Globaltech
 Attn: Joshy Joseph

Project: Replacement of 4" DIP Discharge Piping (Plant Site Lift Station)

Bid Date: N/A

Addendum: N/A

ARRA or AIS - N/A

QTY	SIZE	DESCRIPTION	UNIT \$	EXT \$
2	06"	DI FLG 90 ELL (P401L)	\$212.36	\$424.73
1	02"	316SS THRD AIR RELEASE VALVE, H-TEC 986	\$3,277.65	\$3,277.65
2	01"	316SS THRD BALL VALVE	\$68.96	\$137.93
1	02"	316SS THRD BALL VALVE	\$139.24	\$139.24
2	04"	FLG CHECK VALVE W/ OSL&W (EPOXY COATED IRON BODY)	\$916.06	\$1,832.12
4	04"	FLG RW GATE VALVE(EPOXY COATED IRON BODY)	\$468.47	\$1,873.88
1	02"	IF REQUIRED: THRD AIR RELEASE VALVE, GREEN EPOXY COATED, H-TEC 986	\$2,053.75	
18	04"	FLG ACCY SET 316SS FINISH HEX W/ 1/8" FF SBR TORUSEAL GASKET	\$32.72	\$588.94
2	04"	FLG ACCY SET 316SS FINISH HEX W/ 1/8" FF SBR TORUSEAL GASKET	\$30.03	\$60.05
3	06"	FLG ACCY SET 316SS FINISH HEX W/ 1/8" FF SBR TORUSEAL GASKET	\$31.52	\$94.55
1		FREIGHT FOR HDPE	\$200.00	\$200.00
4	04"	HDPE DR 11 DIPS OD 90 ELL	\$55.23	\$220.93
60	04"	HDPE DR 11 PIPE DIPS OD (GREEN)	\$3.66	\$219.51
1	04"	HDPE FLG ADAPTER W/ 316SS BU RING	\$290.44	\$290.44
6	04" X 03'-00"	316SS ADJ SADDLE SUPPORT	\$379.63	\$2,277.75
6	01"	316SS 150# CAST THRD 90 ELL	\$3.31	\$19.89
1	04" X 08'-00"	316SS SCH 40 FAB SPOOL (SO FLG X 08'-00" X SO FLG)	\$626.53	\$626.53
2	04" X 10'-00"	316SS SCH 40 FAB SPOOL W/ 1 EA. 01" THREAD O LET (SO FLG X 10'-00" X SO FLG)	\$754.08	\$1,508.16
1	04" X 10'-00"	316SS SCH 40 FAB SPOOL W/ 1 EA. 02" THREAD O LET (SO FLG X 10'-00" X SO FLG)	\$754.08	\$754.08
3	04"	316SS SCH 40 FLG 90 ELL	\$478.04	\$1,434.12
2	04"	316SS SCH 40 FLG TEE	\$700.80	\$1,401.60
1	06"	316SS SCH 40 FLG X 90 ELL X 90 ELL X FLG (FOR VENT)	\$823.33	\$823.33
40	01"	316SS SCH 40 PIPE	\$3.86	\$154.50
1	04"	316SS SCH 40 THRD FLG	\$42.18	\$42.18
4	01" X 03"	316SS SCH 40 THRD NIPPLE	\$2.40	\$9.60
1	04"	316SS MIPT X MALE CAMLOCK	\$266.73	\$266.73
1	06"	SS Bug screen	\$25.00	\$25.00
2	01"	316SS PRESSURE GAUGE	\$366.82	\$733.65
2	01"	316SS PRESSURE GAUGE	\$366.82	\$733.65

<u>QTY</u>	<u>SIZE</u>	<u>DESCRIPTION</u>	<u>UNIT \$</u>	<u>EXT \$</u>
TOTAL THIS BID ITEM - TAX NOT INCLUDED				\$20,170.73
DUCTILE TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$424.73
VALVE TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$7,260.81
FAS TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$743.54
HDPE TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$930.88
STAINLESS TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$6,773.99
SUPPORT TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$2,277.75
MISC TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$1,759.03
GRAND TOTAL ALL BID ITEM - TAX NOT INCLUDED				\$20,170.73

Notes:

1. All Fitting and Valves Quoted Less Accessories
2. All Buried Ductile Iron Pipe and MJ Fitting Quoted Bituminous Coated
3. All Flange Pipe and Fitting Quoted Prime Coated
4. All Ductile Iron Pipe and Fitting Quoted Protecto 401 Lined
5. All Ductile Iron Fitting (MJ & Flange) Quoted Are Globally Sourced
6. At this time US Pipe and American are not producing fittings 24" and smaller. Fittings are only made by Fitting Manufactures and brands are blended when we ship projects based on availability at time of order.
7. Due to the volatile raw market All C-900 PVC, C-905 PVC, HDPE, SDR 35, Sch 80 PVC, Sch 40 PVC, Stainless Steel, Copper & Brass Pipe, Fittings, Valves, etc will/may need to be re-quoted at the time of purchase. Pricing Subject to Availability.
*** Stainless Steel prices are good till August 5, 2016
8. All valve boxes quoted less extension stem unless noted otherwise.
9. Flange Accessories Set Prices are Firm for 14 Days from Bid Date, & Must Ship Within 28 Working Days from Bid Date.
10. Stainless Steel Pipe Drawing are not Included in this Quotation. If Required Pipe Drawing, the Cost will be \$600.00
11. Pipe Supports - Do not include engineering calculations (ie. wind, seismic, etc). We can recommend someone who can provide this information if requested.

**** DISCLAIMER:**

McDade Waterworks, Inc. reserves the right to increase prices and/or change escalation terms at any time based on the potential of continued cost volatility.

Confidentiality. Both McDade and Customer agree that the terms of this quotation, including the attached pricing are confidential and shall be held in strict confidence by both parties and may not be disclosed unless required by law. Customer agrees not to post or publicly display the terms or the pricing. Customer also agrees that any discussions or negotiations regarding the attached pricing or any changes thereto (including but not limited to future pricing offerings) are also confidential and are pursuant to this provision of confidentiality.

The above quotation is our interpretation of the plans and specifications and should be reviewed by your firm for accuracy. Prices do not include valve boxes, ext stems, wrenches, start-up services, etc. unless specifically noted in our quotation. Prices are based on full freight allowed truckload shipments to the project. Additional materials ordered will be furnished on a case by case basis.

Terms: Net 30 Days
 FOB: S/P - FFA to Jobsite (Based on Terms Above)

Please call should you have any questions or need any additional pricing.

Sincerely,
 Wesley G. Bunn



HDPE Inc.
136 Kid Ellis Rd

Quotation

Date	Estimate #
6/16/2016	12609

Name / Address
Globaltech, Inc. 6001 Broken Sound Pkwy NW Ste 103 Boca Raton, FL 33487

Ship To
WEST PALM BEACH, FL

Terms	Offer Expires	Rep	Writer	FOB	Est. Lead Time
Net 30	6/30/2016	JRL	Tyler Kelly	Shipping Point	2 - 3 WEEKS ARO
Item	Description	Qty	U/M	UNIT PRICE	Total
F90D2400160473	24" DIPS DR11 PC128 PE3608/4710 3 SEG 90	2		897.60	1,795.20T
FAD2411	24" DIPS DR11 PE3608/4710 FLANGE ADAPTER	2	ea	578.64	1,157.28T
BRID2411	24" DIPS DR11 PC160 CONV DI BOLT RING	2	ea	197.68	395.36T
CPD2411	24" DIPS DR11 4710 HDPE CUT STOCK PIPE	20	ft	90.00	1,800.00T
Miscellaneous	24" DIPS DR11 EF COUPLING	2	ea	1,365.00	2,730.00T
	** ESTIMATING TECH AND EQUIPMENT FOR 2 10 HOUR DAYS TO WELD 24" DIPS MATERIAL **				
FTSTNT	FIELD TECH STRAIGHT TIME (NON-TAXABLE)	40	hr	65.00	2,600.00
FTOTNT	FIELD TECH OVERTIME (NON-TAXABLE)	12	hr	75.00	900.00
PERDIEM	PER DIEM - DAILY	2	day	35.00	70.00T
LODGING	LODGING PER NIGHT	2	day	120.00	240.00T
FMR1236DT	#1236 FUSION MACHINE RENTAL DAILY (W/ TECH):	3	day	850.00	2,550.00T
MOB/DEMOB	MOBILIZATION / DEMOBILIZATION	2		400.00	800.00T
EFRENTALDA...	ELECTROFUSION MACHINE RENTAL DAILY (W/ TECH):	2	day	150.00	300.00T
				Subtotal	\$15,337.84
				Sales Tax (6.0%)	\$710.28
				Total	\$16,048.12

Phone #	Fax #
863-607-4730	863-607-6022



TriNova-Florida
 Formerly AMJ
 4110 South Florida Ave, Suite 200
 Lakeland, FL 33813
 800-881-1487 Office | 863-687-0077 Fax
 FLSales@trinovainc.com

QUOTATION

Page: 1

Quotation For:

GLOBALTECH 13T Quotation#: 1601541
 6001 BROKEN SOUND PARKWAY NW Revision#: 1
 SUITE 610 Date: 07/22/16
 BOCA RATON FL 33487
 Ph: (561) 997-6433 Fx: (561) 997-5811 Prin Quote#:

Attn: TROY LYN E-Mail: TLYN@globaltechdb.com
 Ref: AMMONIA FEED SYSTEM, PALM BEACH COUNTY WTP#11

Please Address Order To:

TRINOVA FLORIDA, FORMERLY AMJ
 ** FLSALES@TRINOVAINC.COM **
 4110 SOUTH FLORIDA AVE, SUITE 200
 LAKELAND FL 33813

FOB: FACTORY SHIP POINT
 Delivery: 9-10 Weeks, ARO
 Salesman: DENNIS PARKER
 Validity: 30 DAYS
 Terms: NET 30 DAYS

AMJ Equipment is now part of the TriNova team. With our combined strengths, we can offer our customers a more complete line of products and services. If you need assistance, please contact us at 863-682-4500 or FLSALES@TRINOVAINC.COM.

Item	Qty	Part#/Description	Unit Price	Total Price
1	1	WPB#3 PRESSURE REDUCING STANCION SEVERN TRENT / CAPITAL CONTROLS WALL MOUNTED PRIMARY PRESSURE REDUCING STANCION (TO BE MOUNTED ON WALL NEAR AMMONIA TANK) SCOPE - SIZE (48"L X 34"T) QTY 1 COMPLETE WITH PRIMARY AND BACKUP PRESSURE REDUCING VALVES AND ACCESSORIES FOR OPERATION AND MAINTENANCE. INCLUDES 316 STAINLESS STEEL TUBING, TWO 316 STAINLESS STEEL WYE STRAINERS, TWO BLACK IRON PRESSURE REDUCING VALVES, 316 STAINLESS STEEL INLET AND OUTLET PRESSURE GAUGE ASSEMBLIES ON DIAPHRAGM SEALS, ONE PRESSURE RELIEF VALVE FACTORY SET AT 100 PSI ON THE OUTLET, BARKSDALE HI/LOW EXPLOSION PROOF PRESSURE SWITCH, PTFE TUBING WITH 316 STAINLESS STEEL BRAIDED HOSE ON INLET AND OUTLET OF THE PANEL THAT CONNECTS THE TANK TO THE PANEL AND THE PANEL TO THE SECONDARY PRESSURE REDUCING PANEL, ONE LOT OF 316 STAINLESS STEEL TUBING, VALVES AND FITTINGS PRE-ASSEMBLED AT OUR FACILITY AND SHIPPED COMPLETE TO THE SITE FOR INSTALLATION. PLEASE SEE THE ATTACHED DRAWING # 1 OF 3. ***** * ELECTRICAL/MECHANICAL INSTALLATION IS NOT INCLUDED * * * FREIGHT TO THE SITE IS INCLUDED IN PRICING * * * START-UP SERVICES ARE INCLUDED IN PRICING * *****	19,116.25	19,116.25
2	1	WPB#3 SECOND STAGE PRESSURE REDUCING PANEL SEVERN TRENT / CAPITOL CONTROLS STANCION MOUNTED (FREE STANDING) PVC SECOND STAGE PRESSURE REDUCING AND SHUT OFF PANEL TO BE MOUNTED ON THE BACK OF AMMONIA STANCION ASSEMBLY ***** CONTINUED ON PAGE 2 *****	25,266.25	25,266.25



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QUOTATION

Page: 2

Quotation#: 1601541
 Revision#: 1
 Date: 07/22/16

Item	Qty	Part#/Description	Unit Price	Total Price
		(1) PRE-ASSEMBLED PVC BACKPANEL STANCION (48"X72") SECONDARY AMMONIA PRESSURE REDUCING PANEL, INCLUDES OUTLETS FOR THREE FEED POINTS, THREE HEATED DRIP LEGS, THREE DUAL STAGE 316SS PRESSURE REGULATORS WITH DUAL GAUGES, INCLUDES ALL 316 SS TUBING, VALVES, FITTINGS, AND ACCESSORIES SHOWN ON DRAWING #3 OF 3.		
		***** * INCLUDES FLEX TUBING FROM OUTLET OF PIPING TO INLET* * OF AMMONIA FEED PANEL. * *****		
		***** * ELECTRICAL/MECHANICAL INSTALLATION IS NOT INCLUDED * * FREIGHT TO THE SITE IS INCLUDED IN PRICING * * START-UP AND TRAINING ARE INCLUDED IN PRICING * *****		
3	1	WPB#3 AMMONIA FEED PANEL STANCION MOUNTED AMMONIA FEED PANEL (TO BE MOUNTED ON THE FRONT OF THE PRESSURE REDUCING PANEL)	45,986.63	45,986.63
		(1) PRE-ASSEMBLED PVC STACION AMMONIA FEED CONTROL PANEL (48"x72") COMPLETE WITH THREE SIERRA MASS FLOW FLOWMETERS WITH INTEGRAL CONTROL VALVES. FLOWMETERS HAVE REMOTE CONTROLLER/TRANSMITTERS SERIES MAX TRACK 180 (0-120 PPD), 3 ST/CC ROTAMETER FLOW METERS (0 TO 120 PPD), THREE 4" 315 SS GAUGES WITH DIAPHRAGM SEALS. INCLUDES ALL 316 SS TUBING, VALVES, FITTINGS, AND ACCESSORIES SHOWN ON DRAWING #2 OF 3.		
		***** * INCLUDES FLEX TUBING FROM EXISTING PIPING TO OUTLET* * OF AMMONIA FEED PIPING. * *****		
		***** * ELECTRICAL/MECHANICAL INSTALLATION IS NOT INCLUDED * * FREIGHT TO THE SITE IS INCLUDED IN PRICING * * START-UP AND TRAINING ARE INCLUDED IN PRICING * *****		
4	10	SUBMITTALS SUBMITTALS FOR APPROVAL	95.00	950.00
5	10	MANUALS OPERATION AND MAINTENANCE MANUALS	115.00	1,150.00
6	1	FREIGHT ESTIMATED FREIGHT TO SITE	1,950.00	1,950.00

***** CONTINUED ON PAGE 3 *****



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QUOTATION

Page: 3

Quotation#: 1601541
Revision#: 1
Date: 07/22/16

Item	Qty	Part#/Description	Unit Price	Total Price
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7	3	ONSITE SERVICE ONSITE SERVICE FOR START-UP AND TRAINING (3-DAYS)	1,900.00	5,700.00
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Quote Total: 100,119.13

Did you know that our service team can Commission/Start-Up and Troubleshoot all of your instrumentation? We would be happy to provide pricing.
*** PLEASE SEND PO'S AND INQUIRIES TO: FLSALES@TRINOVAINC.COM ***

By: CHAD KLOFT for DENNIS PARKER



CORROSION PROBE, INC.

THE COMPLETE ENGINEERING APPROACH – FROM DETECTION TO CORRECTION

July 26, 2016

Via E-mail: tlyn@globaltechdb.com

Mr. Troy Lyn
Globaltech
6001 Broken Sound Parkway
Suite 610
Boca Raton, Florida 33487

Subject: Cost Proposal – FPUA – Belle Glades – Coatings Inspection Proposal

Dear Mr. Lyn,

Corrosion Probe, Inc. (CPI) is pleased to provide this proposal for the subject services. This proposal provides our proposed Scope of Services, Schedule, Qualifications and Costs to perform the work as described.

Scope of Services

CPI will provide the services below in two (2) phases; Initial Spec Review/Site Inspection & Coating Inspections.

Spec Review & Initial Site Inspection

CPI will conduct one (1) site visit to examine and familiarize themselves with the site and those items that may require specific action in the specification document. In addition, CPI will review the coating specification to ensure that the appropriate standards, procedures and precautions are properly addressed to ensure a successful contract.

CORROSION PROBE, INC.

Corporate Headquarters:

12 INDUSTRIAL PARK ROAD • P.O. BOX 178 • CENTERBROOK, CT 06409-0178

PHONE: (860) 767-4402 • FAX: (860) 767-4407 • www.cpiengineering.com

Regional Offices:

CALIFORNIA • DELAWARE • FLORIDA • GEORGIA • MAINE • MASSACHUSETTS • MISSOURI • NEW JERSEY • OHIO • PENNSYLVANIA • TEXAS • WASHINGTON • WISCONSIN

Inspection Services (Exterior Painting)

The Inspection Services will provide for four (4) site inspections during production work to ensure compliance with the project's specification. These will involve providing inspections at "Key Hold Points" in the Contractor's production. These inspections are intended to take no more than 6 hours per visit, two hours total travel and a maximum of 4 hours on-site. The schedule for these inspections will be determined as soon the initial project schedule is established with the selected contractor. A minimum 48 hours will be required to confirm the site inspection and that the expected work is still on schedule. These inspections are anticipated to occur at the following points/times during the production; following the surface preparation, application of the first coat, second coat, and final coat/final inspection (assuming a three-coat system).

Following each site inspection, CPI will issue a brief summary of the inspection, including the work inspected, testing conducted and their results and any non-conformance items that require attention prior to proceeding to the next stage or phase of work. The work conducted in this Phase will not include any consulting, design and or dispute resolution services. Should those services be required and or requested, they will charged at \$195.00/hour as an extra charge to the contract.

Project Schedule

Design Services	Agreed upon schedule after NTP
Inspection Services	Scheduled w/Contractor / 48 hours' Notice

Project Team

The Project Manager will be Kirk R. Shields, Principal Consultant.

Qualifications to Proposal

Any and all access will be provided by the Contractor or others, including scaffolding or ladders. See Standard Terms and Conditions attached.

Costs

CPI's cost to perform the scope of work as described herein is

Phase One (1) - \$1,500.00 (1 trip)

Phase Two (Inspection Services) - \$6,000.00 (\$1,500.00 per inspection x 4 trips)

Total Project Costs \$7,500.00 (5- Trips Total)

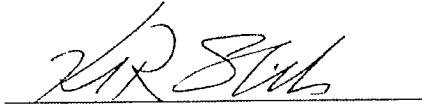
 \$6,000.00 (4 – Trips Total – Two coat system utilized)

This includes all labor and travel costs. Should the actual schedule result in the need for fewer trips or additional trips on site for CPI, or the results of any task indicate the need for a change in work scope or cost, CPI will first contact you to discuss our findings and obtain your approval to modify the statement of work and/or cost.

Globaltech
April 19, 2016
Page 3

We at CPI sincerely appreciate the opportunity to support Globaltech on this important project. This proposal is respectfully submitted for your review and consideration by,

The Staff of Corrosion Probe, Inc.

A handwritten signature in black ink, appearing to read "Kirk R. Shields", is written over a horizontal line.

Kirk R. Shields
Principal Consultant
shieldsk@cpengineering.com

cc: D. Righenzi – CPI

Attachment: CPI Standard Terms & Conditions



Be Right™

Quotation

Quote Number: 100114605v1
Use quote number at time of order to ensure that you receive prices quoted

Hach Company
PO Box 608
Loveland, CO 80539-0608
Phone: (800) 227-4224
Email: quotes@hach.com
Website: www.hach.com

Quote Date: 19-Oct-2015

Quote Expiration: 18-Dec-2015

GLOBAL TECH
SUITE 610
6001 BROKEN SOUND PKWY NW
BOCA RATON, FL 33487

Palm Beach County WTP 11 Belle Glade
PBC BELLE GLADE GUA WTP#11
39700 HOOKER HWY
BELLE GLADE, FL 33430

Name: Troy Lyn
Phone: 5619976433
Email: tlyn@globaltechdb.com

Customer Account Number: 40101923
Customer Quote Reference: Palm Beach County WTP 11 Belle Glade

Sales Contact: Chris Bunch Email: cbunch@hach.com Phone: 800-227-4224

PRICING QUOTATION

Line	Part Number	Description	Qty	Net Unit Price	Extended Price
1	LPV415.52.20002	db ULTRATURB SC, 5M CABLE & AUTOCLEAN	2	2,130.72	4,261.44
2	LXV404.99.00552	sc200 CONTROLLER, AC-DC, 2 DIG, HACH	1	1,694.64	1,694.64
3	9220600	COVER ASSY, UV & SUN SHIELD, sc200	1	177.56	177.56
4	LZV451	CLEANING KIT, ULTRATURB SC	1	111.32	111.32
5	2660153	StablCal Calibration Standard, 20 NTU, 1000 mL	1	122.36	122.36
				Grand Total	\$ 6,367.32

TERMS OF SALE

Freight: Ground Prepay and Add

FCA: Hach's facility

All purchases of Hach Company products and/or services are expressly and without limitation subject to Hach Company's Terms & Conditions of Sale ("Hach TCS"), incorporated herein by reference and published on Hach Company's website at www.hach.com/terms. Hach TCS are contained directly and/or by reference in Hach's offer, order acknowledgment, and invoice documents. The first of the following acts constitutes an acceptance of Hach's offer and not a counteroffer and creates a contract of sale "Contract" in accordance with the Hach TCS: (i) Buyer's issuance of a purchase order document against Hach's offer; (ii) acknowledgement of Buyer's order by Hach; or (iii) commencement of any performance by Hach pursuant to Buyer's order. Provisions contained in Buyer's purchase documents (including electronic commerce interfaces) that materially alter, add to or subtract from the provisions of the Hach TCS are not part of the Contract.

Due to International regulations, a U.S. Department of Commerce Export License may be required. Hach reserves the right to approve specific shipping agents. Wooden boxes suitable for ocean shipment are extra. Specify final destination to ensure proper documentation and packing suitable for international transport. In addition, Hach may require: 1) A statement of intended end-use; 2) Certification that the intended end-use does not relate to proliferation of weapons of mass destruction (prohibited nuclear end use, chemical / biological weapons, missile technology); and 3) Certification that the goods will not be diverted contrary to U.S. law.

ORDER TERMS:

Terms are Subject to Credit Review

Please reference the quotation number on your purchase order.

Sales tax is not included. Applicable sales tax will be added to the invoice based on the U.S. destination, if applicable provide a resale/exemption certificate.

Shipments will be prepaid and added to invoices unless otherwise specified.

Equipment quoted operates with standard U.S. supply voltage.

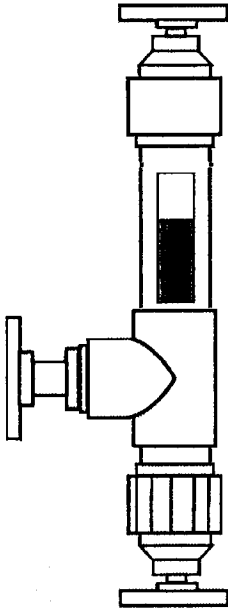
Hach standard terms and conditions apply to all sales.

Additional terms and conditions apply to orders for service partnerships.

Prices do not include delivery of product. Reference attached Freight Charge Schedule and Collect Handling Fees.

LEVEL SWITCHES

Part No. W178205
 Unit Price \$7,823.00
 Lead Time (Days) 20



Technical Specifications

Indication Range: 96.25" to 240"
 Specific Gravity: 1.22
 Max. Pressure: 6
 Operating Temp.: 80
 Mounting Type: Type CP
 Housing Float Material: CPVC
 Housing Type: 2" Pipe
 Float Material: CPVC Float
 Connection Code T: (T10) Fixed 2" 150# FF ANSI Flange
 Connection Code Sa: (S1) No Connection
 Connection Code Sb: (S4) 2" 150# FF ANSI Flange
 Connection Code B: (B11) Removable 2" 150# FF ANSI Flange
 Flag Type: Aluminum
 Scale: Feet/Inches
 Transmitter: Standard, 300F max, 4-20ma Output
 Power Supply: 115 VAC to 24 VDC
 Media Type: Bleach

Ordering Information

Part Number: W178205
 List Price: \$7,823.00
 Lead Time: 20 Days
 Min. Order Quantity: 1
 Shipping Weight: 23.18 lbs.
 Model Description: CP-2-T10/2"150#-S1-B11/2"150#-132.000-139.500-AA5-XMS(4-20)—

Dimensional Specifications

Indicating Length: 132.000"
 C to C Length: 139.500"
 Critical Dimension: C to C Length

Action Center

- Email Specs to Friend
- Contact Us
- Print Product Specs

Resource Center

- Catalog Page
- Maintenance & Operation Bulletin

July 22, 2016



GlobalTech

Attention: Joshy Cheliparambil
Phone: (561) 997-6433 Ext - 118
Email: JJoseph@globaltechdb.com

PALM BEACH COUNTY, FL
Sodium Hypochlorite Storage Tank
Water Treatment Plant 11

Quotation Number: 16-0707 R1
Your Local Justin Sales Representative is:
Carl Eric Johnson, Inc.
Mark Welsh
4615 SE Bridgetown Court
Stuart, FL 34994
(954) 635-7514 PH

10,000 GAL SODIUM HYPOCHLORITE FIBERGLASS TANK

Tank Manufacturer: FRPI Certified

Construction Method: Filament Wound Vertical Design
Corrosion Surface Veil: (2) Ply Synthetic "Nexus"
Liner Backup Thickness: 100 mil
Liner Cure System: BPO/DMA
Total Liner Thickness: 120 mil
Liner Included in Design: Yes
Liner Resin Type: Derakane 411™ Premium Vinyl Ester
Structure Resin Type: Derakane 411™ Premium Vinyl Ester
Structure Cure System: MEKP
Exterior Protective Coating: White Gel Coat with UV-9 Inhibitor
Chemical Service: 12.5% Sodium Hypochlorite
Design Temperature: 130°F
Design Pressure: Atmospheric
Specific Gravity: 1.23
Design Code: ASTM D3299-10 & ASTM D4097-01
Seismic Design: Yes
Seismic Loads: 2012 IBC /ASCE 7-10 Ss=0.049g S1=0.025g
Wind Design: Yes
Wind Loads: 186 MPH Exposure C
External Flood Design: No
Impact Borne Debris Design Included: No
Bottom Configuration: Seamless Integral Flat with No Bottom Side-Wall Seam within the first 7'-0"
Top Configuration: ASME Dish (250-lb Loading on any 4" x 4" area)
Insulation: No
Total Design Capacity: 10,152 gallons
Inside Tank Diameter: 12'-0"
Straight Shell Height: 12'-0"
Empty Tank Weight: 3,330 lbs.

JUSTIN TANKS LLC • 21413 Cedar Creek Avenue • Georgetown, DE 19947
(302) 856-3521 • FAX (302) 856-3527 • www.justintanks.com

Accessories Included:

- (4) Lifting Lugs (316 Stainless Steel)
- (8) Hold-Down Lugs (316 Stainless Steel) (Wind and Seismic Rated)
- (4) 6" Diameter, 25 PSI Rated, Conical Gusseted Contact Molded Flanged Nozzles
- (6) 2" Diameter, 25 PSI Rated, Conical Gusseted Contact Molded Flanged Nozzles
- (6) 4" Diameter, 25 PSI Rated, Conical Gusseted Contact Molded Flanged Nozzles
- (1) 12" Diameter, Contact Molded Flanged Nozzle
- (1) 30" Side Flanged Manway with Flat Cover (5 PSI Rated) (Pressure Seal)
- (1) 24" Top Manway with Hinged Cover and Integral Handle (Dust Seal)
- Flanged Manway Hardware Furnished: 316 SS Bolts & Viton Gasket
- (9) External Support Brackets
- Dry Hot Air Post Cure (180° F @ 4-Hours) per Resin Manufacturer's Recommendation
- (1) OSHA Yellow Fiberglass Ladder (includes 3'-6" walk-thru) with Non-Slip Rungs
- (1) OSHA Yellow Fiberglass Safety Cage
- Special Integral Fiberglass Ladder / Cage Mounting Brackets
- Florida PE Design Calculations
- 5-Year Warranty (See Note 12)

Total Selling Price (1 tank) (\$ 38,987.00)
F.O.B. West Palm Beach County
Freight Included in Price

Options:

- 1. If Anti-Buoyancy Design based on the 21" containment wall and the tank pedestal pad being 14" tall, the adder for this condition (if required) would be \$ 1,990.00
- 2. If additional 2" flanged nozzles are required, add \$ 385.00 each.
- 3. If a Magnetic Level Gauge "Gems Model W177871" is required add, \$3,115.00

Total: - \$40977.00

Drawings: Within 15-30 Days after Receipt of Accepted Purchase Order.

Delivery: Based on mutual agreement of WWTP #11 requirements and Justin Tanks within the allowable scope time set by the overall county's project scope.

Special Notes, Exceptions and Clarifications:

- 1. **Payment Terms** – any deviation from these stated terms will have an impact on the total selling price and may require re-pricing. Payment terms are 20% with drawing approval and release for fabrication, due **Net 30** days; 80% balance due at time of tank completion; **Net 30** days. Payment is due in full without retainage, and will not be contingent upon receipt of funds from third parties. We will invoice on date of completion in our plant.
- 2. This offering is for the supply only of the FRP tank and accessories specified in this quotation. Any deviation from this offering can affect the quoted price and will be addressed through "Change Orders" as they occur.
- 3. Any delays in Returning "Approved" Drawing Submittals within 60 days of receipt may be subject to escalation of material costs, engineering charges and or fabrication delays.
- 4. Approval Drawings will be issued in an electronic 11" X 17" PDF file format.
- 5. Quoted Price does not include individual State Sales Tax. Purchaser must furnish a copy of a Tax Exemption Certificate or State or Federal Identification Number indicating that the Purchaser will pay all sales tax direct to required state.
- 6. All nozzles conform to Industry Standard ANSI B16.5 for 150 lb. series drilling. All flanges are "Flat-Faced" and rated at 25 PSI unless otherwise stated. Gussets conform to all available options listed in ASME RTP-1 Fig 4-13.
- 7. All piping, valves, pumps, anchor bolts, attachment hardware, installation supplies and jobsite related work supplied by others unless otherwise stated in this proposal.

8. O & M Manuals are not applicable for fiberglass tanks. There are no lubrication or maintenance schedules required. These manuals are not available and will not be supplied by Justin Tanks for this project. However, a "Handling & Installation Instruction Guide" shall be supplied with drawing submittal and again with tank delivery.
9. Bolting hardware and gaskets provided only where mating flange is supplied by Justin or indicated in this quotation.
10. Flanged nozzles and openings will be protected with hardboard-flanged covers and nylon ties prior to shipment.
11. Compliance with federal, state, and local codes and regulations is the responsibility of the purchaser.
12. Warranty for defects and workmanship will be 5-years from date of shipment.
13. Cancellation of an order prior to drawing submittal will incur no charges. Cancellation of an order after drawings have been submitted will be charged 15% of the total purchase price. Cancellation of an order after released for fabrication will be charged the 15% engineering cost plus full cost of any item(s) fabricated or purchased for this project at the time of cancellation.
14. Tank Identification Nameplates will be industry standard card stock laminated into the tank wall with all construction and service information pertaining to each vessel.
15. All FRP tanks are automatically tested for Barcol Hardness and Acetone Sensitivity. Tanks are also measured for thickness & verification of accessory locations and visually inspected for Workmanship & Quality by Justin's in-house quality control group. If additional in-house tests or third-party outside testing or inspection is required and available, actual costs will be added with a +20% fee.
16. On-Site Visit and Installation Verification: Justin Tanks or Representative will furnish a single on-site visit for installation inspection and certification. There aren't any training, testing and startup requirements for this vessel that are related to Justin Tanks or this vessel. Any further training, testing and startup requirements under normal operational conditions of this system are to be determined and furnished (if necessary) by others.

JUSTIN TANKS LLC



Mike Oliver
Sales Manager





KLEINPUMP.NET
 5407 North Haverhill Road, Suite 345
 West Palm Beach, FL 33407
 561.340.1678 • sales@kleinpump.net

QUOTATION
 Page 1 of 2
 DATE:
 June 17, 2016
 PROPOSAL:
 11865_R1

To: Globaltech
 Reference: Fybroc Pump for City of West Palm Beach

Attn: Joshy Joseph
 Email: jjooseph@globaltechdb.com

LIQUID Cleaning Solution Less Than 1% NaClO	TEMP.(F) 80	SOLUTION Advise	VISC. 1 cPS	DISCH PSI 20.0	SCT PSI Flooded	SLM TRS	CURVE A60188	
GPM 1700	HEAD 45.9 FT	SP. GR. 1.03	EFF. 69.4%	BHP 29.20	NPSHr 10.6 FT	NPSHa Ample	SEAL RBX1	TESTS R'QD No

Option #1: Fybroc Fiberglass ANSI Process Pump

Qty	Unit Description	Weight (lbs.)	US\$ Net Each	US\$ Net Total
1	Fybroc Fiberglass ANSI Chemical Process Pump Model 1500, Group III - Size 6 x 8 x 13 (A90) - 150# Flat Face ANSI flanges - Right Hand (CW) rotation - VR-1 Reinforced Fiberglass Vinyl Ester Resin construction - 10" dia. VR-1 Semi-Open Impeller with Integral Shaft Sleeve - 303 SS shaft & hardware - John Crane 882 Single mechanical seal with Silicon-Carbide vs. Silicon-Carbide seal faces - VITON elastomers, Hastelloy-C Spring and 316 SS hardware - Drilled for Internal Cover Flush - Driven by a John Deere 4045TF290/74 Diesel Engine, 67 CHP @ 1800 RPM - Cabinet WITHOUT HOOD - Clutch & Power Take Off (PTO) - Drive coupling Kit (shaft to flywheel) - Battery Kit (LESS Battery) - Muffler Kit - Shock Mounted Instrument Panel with Throttle Control, Starter Key Switch, Safety Shutdown for Oil Pressure, Water Temperature & Low Pump Pressure, Ammeter, Tachourmeter - Two Wheel Highway Trailer with Lights	3,000	\$44,311.65	\$ 44,311.65
	Option Equipment for Above Unit:			
	- 50 Gallon Fuel Tank Kit, Front Mount		\$ 811.15	
	- 150 Gallon Fuel Tank, Front Mount		\$ 1,161.92	
	- 130 Gallon Fuel Tank, Bottom Mount		\$ 2,623.46	
	- Enclose Cabinet (Hood & Grill)		\$ 333.23	
1	Start-Up and Training of Equipment Supplied By Klein Pump - 1 Day (Up to 8 Hours) - Overtime billed Separately - TO BE PAID IN ADVANCE		\$ 500.00	\$ 500.00
1	Travel Expenses related to Start-Up - Hotel, Air Fare, Meals etc..... - Receipts will be presented for payment - TO BE BILLED SEPERATELY		\$ -	\$ -
	TESTING: None		Sub-Total: Freight to Job Site TOTAL NET:	\$ 44,811.65 \$ 950.00 \$45,761.65

EXW: Factory
 Estimated Lead Time: 10-12 Weeks to Ship from Factory (GA)
 Total Weight (est.): 3,000 Lbs. Approx.
 Payment Terms: 25% Deposit with Approved Submittal / Balance Net 30 Days
 Valid thru: July 31, 2016
 Prepared by: Tim Syx

\$49,718.34
Total: - \$44,311.65 + \$2,623.46 + \$333.23 + \$500 + \$1000 + \$950
QUOTED PRICES ARE NET - THANK YOU FOR YOUR INQUIRY
Total = \$49,718.34

Proposal #6145-REV 1
Project Name: WTP 11 Phase 2

June 13, 2016

Article of Availability: Bladder Type Surge Vessels for Membrane Concentrate per the following Technical Description

Specification as follows:

Charlatte Hydrochoc HCA-23000-H

Total volume: 6,000 Gallon, 82 Inch OD – Carbon Steel with Small Fitting in 316L
Orientation: Horizontal Vessel with Legs, Lift Lugs and Openings per Specification
Manway: 16 Inch ID Access Manhole on Endcap of Vessel
Outlet: 12 Inch Bottom 150# Flanged w/ Elbow and (2) ½” NPT & (1) 2” RFWN –

EBONITE RUBBER LINED

Operating pressure: 125 PSIG / Test pressure: 1.5 times
Design Temperature: 0 to 40° Celsius
Bladder: Butyl Rubber compatible with Fluid Membrane Concentrate
Internal Paint: SP-10 Blast, Epoxy Lining, 12 mils Total DFT
External Paint: SP-6 Blast
1st coat – zinc dust primer BG46 3 mils
2nd coat – base coat ZG90-H4DN 5 mils
3rd coat – top coat polyurethane acrylic lacquer INOTHANNE AL- 2 mils
10 mils Total DFT – RAL 5015

Manufacturing Code: ASME Section VIII with U Stamp, National Board Registered

Corrosion allowance: None

Steel Grade: SA516 grade 60

Wind & Seismic: Included

Monitoring: Optional

Accessories: Safety Relief Valve, Pressure Gauge and Fill Port all with Ball Valve

Net Each Vessel: **USD \$88,037.00** Ea / FOB: West Palm Beach, FL

Options Recommended

Start Up – Commissioning / Test Services: **USD \$2,700.00** Net Adder Per Day

Rosemount DP Meter w/ Ball Valve & Piping: **USD \$4,750.00** Net Adder

Optional Adders Available but not required for proper operation and monitoring

Cox Control Panel with Rosemount remote display: **USD \$4,200.00** Net Adder

Spare Bladder if Ordered with Tank: **USD \$9,140.00** Net Adder Each

*Prices based on above specifications, any changes will result in a recalculation of pricing.

Terms: Based on Account Status

Delivery: 10 – 14 Weeks ex-works

Validity: December 31, 2016

Warranty/Product Support: Eighteen Months after Start Up with Charlatte verification of size*

Note: Does not meet any “Buy American” specification

600 MOUNTAIN LANE • P. O. BOX 968 • BLUEFIELD, VA 24605
TELEPHONE (276) 326-1510 • FAX (276) 326-1602
E-MAIL: MIKEDOWNEY@CHARLATTEUS.COM



2140 Pondella Rd
Cape Coral, FL 33909

Phone: 407-855-7580
Fax: 407-851-4829

Quotation Contract

Quote To: **Globaltech, Inc.**
6001 BROKEN SOUND PKWY NW
BOCA RATON, FL 33487 2765

Ship To: **Palm Beach County WTP #11**
TBD
West Palm Beach, FL 33401

Oldcastle Rep: **Greg Perkins**
Contact:

Rep Phone: **239-462-3741**
Phone:

Reference:

Order No	Date	Customer No	Terms	Bid Date	F.O.B.	Quote Valid for
S105424	06/20/16	004022	Net 30 Days	06/21/16	FOB JS	30 days

Qty	Unit	Description	Unit Price	Amount
3	Ea	48' x 48" x 48" Precast Pull Box W/8" Top Slab & USH APD 36x36 Aluminum Hatch rated for occasional H20 wheel loads. Includes: Ram-Nek Joint Sealant, Cored holes for various pipe entries. Note: Link Seals by others if required.	3,939.00	11,817.00

Total: **\$11,817.00**

(Sales Tax Not Incl.)

Quote Notes:

•

All products and services listed on this Quotation Contract are provided under the Standard Terms and Conditions located at www.oldcastleprecast.com/company/pages/credit.aspx. If you have any questions, please call me at the contact information on the top of this Quotation Contract.

Sincerely,

Accepted by:

Greg Perkins Date
Oldcastle Precast, Inc.
239-462-3741
greg.perkins@oldcastleprecast.com

(Customer Signature) Date
Printed name:
Title:
Company:



Pump & Equipment

A Division of Tencarva Machinery Company

Quote No: 062716LS1

Company: Globaltech

Location: Boca Raton

Attn: Troy Lyn

From: Larry Strickland

3524 Craftsman Boulevard • Lakeland, FL • 33803

Tel: (863) 665-7867 • Fax: (863) 667-2951

Municipal Division

Date: 6/27/16

No. Pages: 3

Delivery: See Notes

Terms: N30

F.O.B.: Destination

Freight: Included

Subject:

Bleach injection skids for Palm Beach County Lake Region WTP. (Clearwell 1A & 1B)

We are pleased to quote as follows:

Qty.	Description	Price Each	Extended
2	Seepex Alpha packaged chemical feed skid with duplex pumps.	\$18,770.00	\$37,540.00
2	Seepex Touch Advanced Pump Controller	\$1,948.00	\$3,896.00
2	Clear Splash Cover	\$1,283.00	\$2,566.00
2	Rosemount Mag flow meters	\$13,496.00	\$26,992.00
	<u>Flow meter option:</u>		
2	Seepex standard flow meter (Endress & Hauser)	\$6,855.00	\$13,710.00

Quote Valid for 30 Days/Taxes are Not Included

Notes:

1. Please see attached for further information.
2. Submittal time is 4-5 weeks and delivery after submittal approval is 4-5 weeks.

1 EACH CHLORINE PUMP SKID :- \$22,001.00
 1 EACH MAG FLOW METER :- \$6,855.00

From: Paul Jacobs
To: Troy Lyn
Cc: Bruce Rahmani; Paul Gandy; Duqgan Jacobs
Subject: RE: PBC WTP 11 - Degasifier Cleaning
Date: Wednesday, March 23, 2016 11:09:10 AM

Troy,

JAWS is pleased to provide you with a proposal to provide you with material and labor to retrofit both vessels as described below.

- Each vessel will have a 12" PVC sch 80 flanged nozzle added to the sump
- Each vessel will have the existing 4" PVC sch 80 flanged nozzle and the internal pipe removed.
- Each vessel will have an 8" PVC sch 80 flanged nozzle added along with 8" internal piping and supports properly modified to support the larger pipe.
- The internal pipe shall be designed and fabricated with nozzles to coincide with the troughs for proper liquid distributions.
- Each vessel will have the existing three (3) clips from the side of the vessel removed and in their place larger clips to support the 8" pipe.
- All nozzles and clips will be thermal welded to the PVC shell and overlaid with FRP matting to match the existing vessel construction.
- Final paint to match the existing color will be applied. The color may be somewhat different due to the years of fading.
- All mobilization, material, labor, lifting equipment and gear will be supplied by JAWS.
- All insurance certificates will be supplied as well.
- We do not include any permits, taxes or other fees that may be applicable.
- Total net price for work on two (2) degasifiers is \$32,800.

Regards,

PAUL S. JACOBS



11023 COUNTRYWAY BLVD.
TAMPA, FL 33626
813/854-2284 PHONE
813/854-2287 FAX
pjacobs@jacobsairwater.com

Total: \$32,800 + \$1,820

= \$34,620.00 + TAX

= \$36,697.20

From: Paul Jacobs

Sent: Wednesday, March 23, 2016 10:26 AM

To: 'Troy Lyn' <tlyn@globaltechdb.com>

Cc: Bruce Rahmani <bruce@globaltechdb.com>; Paul Gandy <pgandy@globaltechdb.com>

Subject: RE: PBC WTP 11 - Degasifier Cleaning

Troy,

We will have to grind the FRP away from the PVC vessel than weld the appropriate clips to the shell of the vessel and overlay FRP back around the connection area. This is all standard procedure for renovations. The same method when we add ports or manways except we have to cut into the vessel.

I will get a proposal to you as described.
Regards,

PAUL S. JACOBS



11023 COUNTRYWAY BLVD.
TAMPA, FL 33626
813/854-2354 PHONE
813/854-2487 FAX
pjacobs@jacobsairwater.com

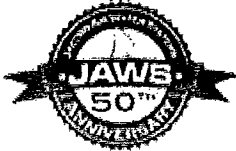
From: Troy Lyn [mailto:tlyn@globaltechdb.com]
Sent: Tuesday, March 22, 2016 4:28 PM
To: Paul Jacobs <paul@tscjacobs.com>
Cc: Bruce Rahmani <bruce@globaltechdb.com>; Paul Gandy <pgandy@globaltechdb.com>
Subject: RE: PBC WTP 11 - Degasifier Cleaning

Correct. However, we may need to rethink how the clips on external pipe will be. On item iii, I am not sure how many clips we will need for exterior. These will be to hang the 8" or 10" PVC or FRP pipe. There are three existing clips shown in attached pictures. However only 2 are on the section below the existing 4" cleaning connection. They are also not aligned below the cleaning flange. There is also the issue of distance from the flange to the clip. As shown in IMG 2891 just to route a 2" pipe to the existing 4-inch cleaning header, the clips were two narrow. Clips like you have at the system at CSID shown in IMG0106 may be more usable if you have a better suggestion, we are open to it. Please assume four external clips with enough width to accommodate the flange and elbow at the new 8" internal cleaning header.

From: Paul Jacobs [mailto:paul@tscjacobs.com]
Sent: Tuesday, March 22, 2016 1:53 PM
To: Troy Lyn <tlyn@globaltechdb.com>
Subject: RE: PBC WTP 11 - Degasifier Cleaning

Troy,
My take away from reading the document you sent along is for us to provide and install the following:
b.i. Add (1) 12" flanged nozzle for drain/pump suction to each vessel (x2)
b.ii. Add (2) 1" flanged ports to each degasifier sump (x2)
b.iii. Remove 4" diameter cleaning header and replace with a new 8" flanged nozzle and internal piping and nozzle system. Provide all clips for the new pipe internal and external to each degasifier (x2)
Please add or delete as you require.
Thanks

PAUL S. JACOBS



11023 COUNTRYWAY BLVD.
TAMPA, FL 33626
813/854-2354 PHONE
813/854-2487 FAX
pjacobs@jacobsairwater.com

From: Troy Lyn [<mailto:tlyn@globaltechdb.com>]
Sent: Wednesday, March 16, 2016 9:33 AM
To: Paul Jacobs <paul@tscjacobs.com>
Subject: PBC WTP 11 - Degasifier Cleaning

Paul. See attached regarding the cleaning pump for degasifier. Can you provide me with cost to change out the existing 4-inch cleaning header. If we can hang the new 8-inch pipe from the existing clips that would be great. Can you let us know if they need to be change and if so how much. I will need this also in a week or two as well. Thanks.

From: Paul Jacobs
To: Troy Lyn
Cc: Bruce Rahmani; Paul Gandy; Duggan Jacobs
Subject: RE: PBC WTP 11 - Degasifier Cleaning
Date: Wednesday, March 23, 2016 11:21:08 AM

Troy,
I can add the internal suction assembly to each unit. The cost is \$1820 for both units. As for the vortex device, I am assuming you are referring to the effluent pipe. This can be added as well but I need to look at the drawings to see how the effluent is supplied.

PAUL S. JACOBS



11023 COUNTRYWAY BLVD.
TAMPA, FL 33626
813/854-2354 PHONE
813/854-2487 FAX
pjacobs@jacobsairwater.com

From: Troy Lyn [mailto:tlyn@globaltechdb.com]
Sent: Wednesday, March 23, 2016 11:11 AM
To: Paul Jacobs <paul@tscjacobs.com>
Cc: Bruce Rahmani <bruce@globaltechdb.com>; Paul Gandy <pgandy@globaltechdb.com>
Subject: RE: PBC WTP 11 - Degasifier Cleaning

PJ. The 12" sump penetration/flange – suction. The criteria also calls out for an internal suction assembly with anti-vortex device. Is this something you can take care of or something you need us to define. I was going to ask PG about it but have not gotten around to yet. Troy.

From: Paul Jacobs [mailto:paul@tscjacobs.com]
Sent: Wednesday, March 23, 2016 10:26 AM
To: Troy Lyn <tlyn@globaltechdb.com>
Cc: Bruce Rahmani <bruce@globaltechdb.com>; Paul Gandy <pgandy@globaltechdb.com>
Subject: RE: PBC WTP 11 - Degasifier Cleaning

Troy,
We will have to grind the FRP away from the PVC vessel than weld the appropriate clips to the shell of the vessel and overlay FRP back around the connection area. This is all standard procedure for renovations. The same method when we add ports or manways except we have to cut into the vessel.
I will get a proposal to you as described.
Regards,

PAUL S. JACOBS



C. C. CONTROL CORP.

5760 CORPORATE WAY, SUITE 100
WEST PALM BEACH, FLORIDA 33407

PHONE: 561 293-3975
FAX: 561 293-3976

CUSTOMER: GLOBALTECH

ATTN: JOSH Y

PROJECT: WTP NO.11 PHASE II IMPROVEMENTS
PALM BEACH COUNTY WATER UTILITIES DEPT.

DATE: 7/27/2016

DESCRIPTION	QUAN	TOTAL PAGES 2
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C. C. CONTROL CORP. PROPOSES TO FURNISH THE FOLLOWING COMPLETE WITH EXCEPTIONS AS LISTED:

EXCEPTIONS:

- A) QUOTE DOES NOT INCLUDE CONDUIT SYSTEM.
- B) QUOTE DOES NOT INCLUDE WIRE/CABLE.
- C) QUOTE DOES NOT INCLUDE INSTALLATION.
- D) QUOTE DOES NOT INCLUDE FIELD TERMINATIONS.
- E) QUOTE DOES NOT INCLUDE ANY PANEL MOUNTING RACKS.
- F) QUOTE DOES NOT INCLUDE FIELD INSTRUMENTS.
- G) QUOTE DOES NOT INCLUDE PLC OR SCADA PROGRAMMING.
- H) QUOTE DOES NOT INCLUDE MODIFICATIONS TO EXIST. RIO-9 PANEL

ITEM NO.1

MODS TO EXIST. RIO-7 AT MEMBRANE ROOM - NORTH WALL

ALLEN BRADLEY 1756-IA16I 16 POINT, 120VAC ISOLATED DI	1
ALLEN BRADLEY 1756-IF6I ISOLATED ANALOG INPUT 6CH.	2
ALLEN BRADLEY 1756-TBNH 20 POSITION NEMA SCREW CLAMP BLCK	3
EDCO PC642C-036-X DUAL SIGNAL SURGE ARRESTER	6
MISC. MATERIAL	LOT

ITEM NO.2

MASS FLOW AIT-83411 24VDC CONTROL PANEL

SCHAEFERS SPN4SS6-201610 NEMA 4X 316 S.S. ENCLOSURE	1
W/ FOLL:	
A) SIZE: 20"H X 16"W X 10"D	
B) S.S. DOOR CLAMPS	
C) MTG. FEET	
SCHAEFERS SPP-2016 STEEL SUBPANEL	1
EDCO HSP-121A SURGE ARRESTER	1
SQD QOU115 120V 1 POLE 15 AMP CIRCUIT BREAKERS	2
PULS SLR10.100 10A 24VDC POWER SUPPLY	1
EDCO PC642C-036-X DUAL SIGNAL SURGE PROTECTOR	1
MISC. TERMINALS	LOT
WIRE, DUCT & NAMEPLATES	LOT

ITEM NO.3

MASS FLOW AIT-8342 AND 8343 24VDC CONTROL PANEL

SCHAEFERS SPN4SS6-201610 NEMA 4X 316 S.S. ENCLOSURE 1

W/ FOLL:

A) SIZE: 20"H X 16"W X 10"D

B) S.S. DOOR CLAMPS

C) MTG. FEET

SCHAEFERS SPP-2016 STEEL SUBPANEL 1

EDCO HSP-121A SURGE ARRESTER 1

SQD QOU115 120V 1 POLE 15 AMP CIRCUIT BREAKERS 2

PULS SLR10.100 10A 24VDC POWER SUPPLY 1

EDCO PC642C-036-X DUAL SIGNAL SURGE PROTECTOR 1

MISC. TERMINALS LOT

WIRE, DUCT & NAMEPLATES LOT

ITEM NO.4

SERVICE SUMMARY

FIELD MODS TO EXIST. RIO-7 LOT

SELL: \$12,800.00 PLUS TAX

SUBMITTALS 4-6 WEEKS
AFTER RECEIPT OF PURCHASE ORDER

FOB: JOB SITE

DELIVERY: 8-10 WEEKS
AFTER APPROVED DRAWINGS

TERMS: NET 30 DAYS
(SUBJECT TO CREDIT APPROVAL)

WARRANTY: ALL WARRANTIES SHALL EXPIRE ONE (1) YEAR FROM DATE OF START-UP
FROM SELLER TO BUYER UNLESS SPECIALLY INDICATED OTHERWISE AND
WILL BE NULL AND VOID UNLESS MATERIALS ARE STORED UNDER PROPER
CONDITIONS DETERMINED BY C.C. CONTROL CORP.

LUIS L. GARCIA



HILLERS ELECTRICAL ENGINEERING, INC.

June 20, 2016

Troy Lyn, P.E.
Globaltech, Inc.
6001 Broken Sound Parkway
Suite 610
Boca Raton, Florida 33487

Subject: Palm Beach County WTP 11 Phase II Improvements (Design-Build)

Dear Troy,

Hillers Electrical Engineering, Inc. (HEE) is pleased to provide Globaltech, Inc. a proposal for the electrical and instrumentation design and construction services as well as PLC programming service for the above referenced subject. Our project scope consists of the following:

- Site Visit and Field Data Collection
- 60% , 90%, and 100% Design Phase Drawings and Specifications
- Attend Design Review Meeting at 60% and 90% and provide responses to comments
- Building Department Permitting Services and incorporate into the Construction documents
- Electrical and I&C Design consists of the design of the electrical and I&C for new sodium hypochlorite metering pumps, new ammonia feeders with flow meters and associated valves, new backup clearwell level sensor, two new turbidity meters at clearwell, replacement of surge tank and associated instruments, new lightning protection and grounding at surge tank, etc.
- Construction services include shop drawing review, RFI's and field change directives, periodic site visits, field inspections, assist with loop-check, start-up, and testing, etc.
- Record Drawings
- PLC programming services of new clearwell level transmitter with selection logic to use for transfer pump system control, new turbidity signals for monitoring and alarming purpose only, study the existing surge tank PLC logic and modification new surge tank function, automation of new sodium hypochlorite pumps including automation on the backup pump that can be selected to control either clearwell injection point, automation of new ammonia flowmeter with controls valves and/or solenoid valves, including automation on the backup ammonia flowmeter with control valves, and trimming by the existing ammonia analyzer, etc. and interfacing with PBCWUD SCADA groups.

The following drawings are anticipated:

- E-1 ELECTRICAL LEGEN AND NOTES
- E-2 ELECTRICAL SITE PLAN
- E-3 MCC-1 ONE LINE DIAGRAM – DEMOLITION
- E-4 MCC-2 ONE LINE DIAGRAM – DEMOLITION
- E-5 MEMBRANE BUILDING – ELECTRICAL PLAN
- E-6 CLEARWELL – ELECTRICAL PLAN
- E-7 AMMONIA BUILDING – ELECTRICAL PLAN
- E-8 DEEP INJECTION WELL – ELECTRICAL PLAN
- E-9 RISER DIAGRAMS
- E-10 PANEL SCHEDULES
- E-11 ELECTRICAL DETAILS – SHEET 1
- E-12 ELECTRICAL DETAILS – SHEET 2
- E-13 ELECTRICAL DETAILS – SHEET 3
- E-14 HSP BUILDING – ELECTRICAL PLAN
- I-1 INSTRUMENTATION LEGEND AND SYMBOLS
- I-2 P&ID DIAGRAM – SHEET 1
- I-3 P&ID DIAGRAM – SHEET 2
- I-4 EXISTING RIO-7 MODIFICATION
- I-5 EXISTING RIO-9 MODIFICATION
- I-6 INSTRUMENTATION DETAILS
- I-7 EXISTING RIO-8 MODIFICATION

Our proposed electrical and instrumentation design, construction, and PLC programming services fee is \$ 73, 173.52, as shown in the attached spreadsheet.

HEE wishes to thank Globaltech, Inc. for the opportunity to provide this proposal. Please do not hesitate to call me if you have any questions regarding this proposal or any other matter.

Sincerely,



Thein Win, P.E., LEED AP
GT89-WTP11-PHII

BUDGET SUMMARY								
Task Number	Task Description	Labor Classification and Hourly Rate					Total Labor	Total Cost per Task
		Project Manager	Project Engineer	Engineer	Construction Coordinator	Secretarial		
WTP 11 Phase II Improvements								
	Task 1 - Data Collection and Site Visit		6				6	\$929.88
	Task 2 - 60% Design + 60% Review	8	56				64	\$10,377.92
	Task 3 - 90% Design + 90% Review	8	40		4		52	\$8,357.44
	Task 4 - 100% Design + Permitting	2	12				14	\$2,284.52
	Task 5 - Construction Services	4	42		32		78	\$11,032.28
	Task 6 - Project Close Out	0	6		0		6	\$929.88
	PLC Programming + Start-up	36	164		54		254	\$39,261.60
	Subtotal Task 1 thru Task 6 + Programming	58	326		90	0	\$73,173.52	\$73,173.52
	Labor Subtotal Hours	58	326	0	90	0	474	
	Labor Raw Costs	\$74	\$54	\$40	\$40	\$22		
	Labor Multiplier	2.87	2.87	2.87	2.87	2.87		
	Labor SubTotal	\$ -	\$ -	\$ -	\$ -	\$ -		
	Labor Total	\$12,318.04	\$50,523.48	\$ -	\$10,332.00	\$ -	\$ 73,173.52	
	Subcontract Total						0	
	Project Total						\$ 73,173.52	



CoastalOne.com

SPECIAL ORDER MATERIAL CONFIRMATION - TERMS AND CONDITIONS

Sold To: GLOBALTECH INC.
6001 BROKEN SOUND PKWY NW STE 610
BOCA RATON, FL 33487

INVOICE NO. : SO-000576513-1

Date Ordered: 06/29/2016
Date Shipped:
Salesperson: Will Everest

Deliver To: CUSTOMER PICK UP

Account #: 37482
P.O. #:
Tax Cnty: 33407.S03

Job Name: .SHOP

Remarks:

Item Description	Unit Size	Qty Ord	Unit Price	Extended Price
EUCLID DURALTEX 1807 STANDARD COLOR, 3 GL/UN (1A+1B)	UNIT	34	\$506.00	\$17,204.00
EUCLID DURALTEX1805 STANDARD COLOR 3 GL/UN, (1A+1B)	UNIT	4	\$473.00	\$1,892.00

Materials Total: \$19,096.00
Sales Tax: \$1145.76
Freight: \$0.00
TOTAL: \$20,241.76

Thank you for your order! The above material is a special order from the Manufacturer as it is either a non stocking item for Coastal by virtue of the item, quantity or packaging size. Any return is strictly contingent upon the Manufacturer s return policies and **MAY NOT BE RETURNABLE AT ALL.**

Full payment for all special order material is the responsibility of the customer and will be invoiced appropriately.

If you do not have an open credit account with Coastal, a payment of 100% is required prior to placing the order with the Manufacturer.

We must have this form signed and/or acknowledged via email before placing your order with the Manufacturer.

Signature: _____

Date: 06/29/2016

Please Print Name: _____

