



HOLTZ CONSULTING ENGINEERS, INC

October 12, 2021

Mr. John Armstrong, P.E.
Senior Utilities Engineer
City of Riviera Beach Utility Special District
600 West Blue Heron Boulevard
Riviera Beach, FL 33404

Subject: RBUSD Lift Station No. 1A Emergency Structural Repairs

Dear Mr. Armstrong,

Holtz Consulting Engineers, Inc. (HCE) is pleased to submit this proposal for emergency structural repairs to the Lift Station No. 1A (LS 1A) wet well. This project will include the design for the repair methods and materials of construction as well as furnishing all labor, materials, and equipment to repair and recoat the interior of the wet well structure. This project will include the following tasks:

SCOPE OF SERVICES

Task 1 – Preconstruction Services

- 1.1 Under this task, HCE and its specialty subcontractor, Crom Coatings and Restorations (CCR) will attend one project kickoff meeting with RBUSD staff to review the scope of work and construction schedules. This task also includes one site visit to take field measurements and obtain information necessary to order materials and construct the project.
- 1.2 Engineering services in this task include labor for scheduling activities, purchasing and subcontracts, shop drawing activities, general project management, and items included under the general conditions.

Task 1 Assumptions:

1. No surveying services and no preparation of construction plans included in this proposal.
2. No hydraulic studies or evaluation of the electrical or mechanical condition or performance of LS 1A are included in this proposal.

Task 2 – Provide Bypass Pumping Systems

HCE will coordinate the furnishing, installation, start-up and testing of the lift station bypass pumping system that will be operated by RBUSD staff during construction. The bypass pumping system will consist of two separate subsystems: one pumping system with suction lines in the wet well located west of Lift Station No. 1A and one pumping system with suction lines in the manhole at the entrance to the



lift station site. Each pumping subsystem will have a primary diesel pump with a backup diesel pump for a total of four (4) pumps. RBUSD staff will be responsible for keeping the diesel tanks filled and for inspecting the bypass system twice per day. HCE will also monitor the bypass system daily. The lift station wet well bypass pumping systems will be automatically operated by floats installed in the wet well and manhole for each subsystem. The pumps will be provided with auto dialers which will contact RBUSD staff, HCE staff, and the pump rental company staff should the high-level alarm activate for either pumping subsystem. The high-level alarm will also automatically start the backup pump for that subsystem. Once the bypass pumping systems are installed and tested, HCE will install three (3) temporary plugs (one (1) 18" and two (2) 30") in the gravity lines from the bypassing wet well and manhole to the wet well for Lift Station No. 1A (two (2) downstream of the pump suction locations and one backup plug in the common influent line to the lift station wet well downstream of the collection manhole) so that flow to lift Station No. 1A is completely stopped and the wet well structural repairs can be performed. HCE and CCR will be responsible for cleaning the wet well with potable water provided by RBUD. Cleaning water will be pumped to the wet well for the bypass pumping system.

Task 2 Assumptions:

1. RBUSD staff will drain the wet well structure. An allowance for a vac truck is included in this proposal should RBUSD not be able to provide one.
2. Fueling of the bypass pumping system and twice daily inspections/maintenance of the system will be the responsibility of RBUSD staff which will be in addition to the monitoring of the system provided by HCE. Standard pump maintenance items (oil changes, etc.) shall be performed by the pump rental company under this task.

Task 3 – Structural Repairs

HCE shall utilize CCR to conduct structural repair services, with oversight and coordination by HCE. Once the lift station wet well is under bypass and all sewage is removed from the wet well by RBUSD staff, the wet well will be cleaned, and scaffolding will be installed as required to complete the work by HCE and CCR and the following structural repairs will be made to the wet well:

- A. Interior Master Lift Station No.1A Walls, Flume, & Partition Wall Rehabilitation
 - 1) Review of as built drawings and engineer a shoring system to support the ceiling and provide a safe working environment for personnel.
 - 2) Mobilization of crew, materials, and equipment to set up on site.
 - 3) Construct and erect supportive shoring engineered system up to the ceiling giving adequate support and providing a safe working environment for personnel.



- 4) Pressure wash the interior walls' concrete surfaces at a minimum 3,500 psi removing dirt, oil, grease, and other foreign contaminants from the substrate.
- 5) Mechanically chip away loose and delaminated concrete up to 2" depth where abrasive blasting may not be utilized.
- 6) Abrasive blast the interior walls concrete surfaces per SSPC SP-13 / NACE 6 Concrete Preparation Standards, removing remaining degraded concrete up to 2" in depth estimated at 1,845 SF back to sound concrete while achieving a surface profile per ICRI CSP-5 or greater.
- 7) Perform pH analysis testing the pH levels to assure sound concrete.
- 8) Abrasive blast or mechanically grind exposed existing steel reinforcing removing rust, corrosion, and other contaminants from the substrate. Apply Sika Armatec 110 Rust inhibitor to exposed steel.
- 9) Rebuild wet well walls via application or repair materials up to 2" depth on interior walls estimated at 1,845 SF with Tnemec Series 217 Mortarcrete at a minimum ¼" thickness and up to 4" maximum thickness. Depths may vary based on Analysis report findings.
- 10) Abrasive sweep blast the interior walls to abrade the 217 Mortarcrete to achieve a surface profile per ICRI CSP 5 to receive the protective lining system.
- 11) Perform saw cut terminations at the floor, partition wall, and channel locations at ¼" width x ¼" depth where 434 lining system is to cease.
- 12) Install Tnemec Series 434 Perma-Shield at 125 mils DFT (1/8" Thick) to the interior concrete walls up to 1,845 SF of the Lift Station No.1A wet well, terminating at intersecting walls, pipe, and other appurtenances.
- 13) Apply a top finish coat Tnemec Series 435 Perma-Glaze at 15-20 mils DFT to the interior walls of the Lift Station No.1A wet well to the applied 434 material up to 1,845 SF.

*Note: No repairs to the floor and beveled fillet of the wet well are anticipated to be required and are not included in this proposal.

B. Interior Master Lift Station No.1A Ceiling Rehabilitation

- 1) Pressure wash the interior walls' concrete surfaces at a minimum 3,500 psi removing dirt, oil, grease, and other foreign contaminants from the substrate.



- 2) Mechanically chip away loose and delaminated concrete up to 4" depth where abrasive blasting may not be utilized.
- 3) Abrasive blast the interior walls concrete surfaces per SSPC SP-13 / NACE 6 Concrete Preparation Standards removing remaining degraded concrete up to 4" in depth estimated at 185 SF back to sound concrete while achieving a surface profile per ICRI CSP-5 or greater.
- 4) Perform pH analysis testing the pH levels to assure sound concrete.
- 5) Abrasive blast or mechanically grind existing steel reinforcing removing rust, corrosion, and other contaminants from the substrate. Apply Sika Armatec 110 Rust inhibitor to exposed steel.
- 6) Install reinforcing mat in the ceiling area with #4 steel rebar strengthen the ceiling area where the existing reinforcing is structurally degraded or weakened.
- 7) Rebuild ceilings via application of repair materials up to 4" depth on interior ceiling estimated at 185 SF with Tnemec Series 217 Mortarcrete at a minimum ¼" thickness and up to 4" maximum thickness. Depths may vary based on pH analysis report findings.
- 8) Abrasive sweep blast the interior ceiling surface to abrade the 217 Mortarcrete to achieve a surface profile per ICRI CSP 5 to receive the protective lining system.
- 9) Perform saw cut terminations at the openings in the ceiling and pipe penetration locations at ¼" width x ¼" depth where 434 lining system is to cease.
- 10) Install Tnemec Series 434 Perma-Shield at 125 mils DFT (1/8" Thick) to up to 185 SF of the interior concrete ceiling of the lift station wet well terminating at intersecting walls, pipe, and other appurtenances.
- 11) Apply a top finish coat Tnemec Series 435 Perma-Glaze at 15-20 mils DFT to the interior ceiling of the lift station No.1A to the applied 434 material up to 185 SF.

*Please note: The wet well ceiling repair work will be performed in three phases in order to complete the work safely.

C. Interior Master Lift Station No.1A Wet Well Accessories:

- 1) Remove the existing galvanized plated wet well access hatch cover assembly and replace with a new 30" x 30" stainless steel access hatch assembly.



- 2) Remove the existing wet well ladder and support brackets and replace and install with a new stainless-steel ladder and support brackets with cage.

Task 3 Assumptions:

1. The Lift Station No.1A Wet Well Interior Dimensions depicted on the drawings provided by RBUSD were used as the basis for the scope of work and priced proposal are: 10'-0" x 18'-6" x 25'-2"
 - Interior Ceiling Surface Area = 185 SF
 - Partition Wall Surface Area = 150 SF
 - Interior Walls Surface Area = 1,435 SF
 - Flume Surface Area = 260 SF
2. Maintenance of traffic, including barricades, etc., are not included in this proposal and are assumed not to be required.
3. No permits or permit fees for the wet well restoration project are included in this proposal. Any permit fees required will be paid for by RBUSD.
4. The floor and beveled fillet of the wet well stay submerged and therefor are not exposed to the hydrogen sulfide gasses and are assumed to be in fair condition and rehabilitation of these areas is not included in this proposal. In the event structural repairs and/or coatings are required in these areas, they can be provided via change order.
5. RBUSD shall provide potable water under a minimum pressure of 30 psi within 100 feet of the lift station for construction water.
6. RBUSD will provide one 100-amp, 110/220 volt power service withing 100 feet of the lift station for use by the construction crews.
7. RBUSD staff will drain the wet well structure. No vac trucks are included in this proposal and will be provided by RBUSD.

SCHEDULE

The work shall be performed in accordance with the schedule below:

Task	Time
Task 1 - Preconstruction Services	2 Weeks from NTP
Task 2 – Bypass Pumping	4 Weeks from NTP
Task 3 – Structural Repairs	20 Weeks from Completion of Task 2



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DEDUCTION FOR NOT COMPLETING ON TIME

If approved, this proposal becomes part of the existing services contract with the City of Riviera Beach Utility Special District (DISTRICT). If the contract work is not fully complete according to the terms of this Contract within the limits herein stipulated, Holtz Consulting Engineers, Inc. shall pay the DISTRICT, not as a penalty, but as liquidated damages, a sum equal to two hundred fifty dollars (\$250.00) for each day elapsing between the expiration of such time limit and the date of full completion, providing, however, that the time limits herein stated are subject to extension without payment of damages, as provided in Article 17 of the contract. It is agreed that these liquidated damages are a good faith and reasonable pre-estimate of DISTRICT's actual damages due to delay by Holtz Consulting Engineers, Inc. because it is difficult, if not impossible, to accurately estimate the actual damages suffered by DISTRICT due to any such delay.

Note: The time to review submitted shop drawings by DISTRICT is not included in the time identified in the schedule and the full completion date shall be extended to include the time to review submitted shop drawings by DISTRICT.

COMPENSATION

Compensation for the work shall be a lump sum amount of **\$841,000**. A summary of the lump sum compensation is provided below in Attachment A. Monthly progress payments will be authorized based on percent complete of tasks outlined in a detailed schedule of values to be provided after authorization and agreed upon by RBUSD and HCE. We appreciate the opportunity to assist RBUSD with this project.

Sincerely,

HOLTZ CONSULTING ENGINEERS, INC.

A handwritten signature in blue ink, appearing to read 'SFW', is written over the printed name.

Stephen Fowler, P.E.

Attachement A
RBUSD Lift Station 1A Wet Well Rehabilitation Budget Summary

Item No.	Item Description	Quantity	Unit	Unit Price	Total
1	Subcontractor Mobilization	1	Lump Sum	\$800	\$800
2	Shoring Support Engineered System	1	Lump Sum	\$13,810	\$13,810
3	Surface Preparation Walls & Ceiling	1	Lump Sum	\$98,490	\$98,490
4	Rebuild Walls up to 2" Application	1	Lump Sum	\$125,140	\$125,140
5	Rebuild Ceiling up to 4" Application	1	Lump Sum	\$57,750	\$57,750
6	Repair/Replace degraded reinforcing steel	1	Lump Sum	\$4,160	\$4,160
7	Install Ceiling Reinforcing Steel Mat	1	Lump Sum	\$29,410	\$29,410
8	Interior Wall & Ceiling 434/435 Protective Lining	1	Lump Sum	\$61,620	\$61,620
9	Removal & Install New SS Ladder	1	Lump Sum	\$8,430	\$8,430
10	Removal and Install 30"x30" SS Access Hatch	1	Lump Sum	\$6,440	\$6,440
11	Temporary Bypass Pumping System Installation	1	Lump Sum	\$13,150	\$13,150
12	Temporary Bypass Pumping System Rental*	5	Months	\$30,058	\$150,289
13	Temporary Bypass Pumping System Removal	1	Lump Sum	\$13,150	\$13,150
14	Installation, Removal, and Rental of Gravity Main Plugs	3	Each	\$7,830	\$23,490
15	Vac-truck Allowance (if required)	1	Lump Sum	\$12,000	\$12,000
16	Project Manager Supervision	5	Months	\$6,800	\$34,000
17	Waste Disposal and Sanitary Facilities	5	Months	\$3,000	\$15,000
				Subtotal	\$668,000

<i>General Conditions (3%)</i>	\$21,000
<i>Mobilization, Bonds, and Insurance (3%)</i>	\$21,000
<i>Overhead (8%)</i>	\$54,000
Subtotal	\$764,000
<i>Profit (10%)</i>	\$77,000
Total Construction Cost	\$841,000

Note:

*Temporary bypass pumping system rental cost does not include fuel for pumps and will be provided by RBUSD.