FINAL ENGINEERING REPORT

2019 WATER SYSTEM IMPROVEMENTS

CONTRACT 12 – NEW WATER TREATMENT PLANT & IMPROVEMENTS

CONTRACT 13 – WATER MAIN REPLACEMENT

FOR THE

SANDY HOOK
WATER DISTRICT
Serving Our Community

SANDY HOOK WATER DISTRICT

474 Howards Creek Road
Sandy Hook, Kentucky 41171

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BE Project No. 19003

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SECTION 1 PROJECT PLANNING

1.01 LOCATION

The service area of Sandy Hook Water District is the entire county of Elliott. The proposed project consists of replacement of the existing water treatment plant to a new location on Howard Creek Road 1,600 feet north of the current water treatment facility and replacement of approximately 25,000 linear feet of water main.

The Wrigley water storage tank is a 105,000-gallon glass lined tank located near the 11-mile marker of KY-Highway 7 south of the Elliott/Morgan county line. This is the water storage tank which serves the entire southern portion of Sandy Hook's water system. This tank provides service for the populated areas of KY Highway 7 from Sandy Hook to areas in Northern Morgan County. The project will also include work at the existing Wrigley Pump Station located near the 3-mile marker of KY Highway 7 to augment the repairs on the water tank by installing new Variable Frequency Drive (VFD's) units to the existing pumps.

The final component of this project will be the water main replacement of approximately 20,000 feet of problematic 4" PVC waterline in the KY Highway 556 and KY Highway 755 area affecting about 50 residences.

1.02 ENVIRONMENTAL RESOURCES PRESENT

The major environmental features within the proposed area for the water main replacement project feature a variety of landforms and topographic changes from extremely steep to relatively flat terrain. The gradual undulating terrain allows for potable water to be transported with limited booster stations. Water pressures range from 30 psi to over 150 psi in sections of the system. Many of the branch lines are within valleys and ridgelines in particular along the eastern boundary of the county.

The proposed new treatment plant site is located along the valley floor of Howards Creek, tributary to the Little Sandy River. The site is relatively flat terrain and will be located above the local floodplain.

No known historic sites are noted in the planning area.

1.03 POPULATION TRENDS

As of the population census for 2010, there were 7,852 people in Elliott County with 2,773 households and an average household size of 2.45 persons per household.

The current and past population for the City of Sandy Hook as well as Elliott County is presented in Table 1.03 below.

Table 1.03-1 Past Population

Population	1990	2000	2010	2017 (Estimated)
City of Sandy Hook	548	678	675	614
Balance of Elliott County	5,907	6,070	7,177	6,894
Total Population	6,455	6,748	7,852	7,508

Information from the Kentucky State Data Center, University of Louisville, Urban Studies Institute gives the projected population of Elliott County through the year 2040 presented in Table 1.03-2.

Table 1.03-2 Population & Household Projection

Population Projection	Year				
	2020	2025	2030	2035	2040
Elliott County	7,633	7,542	7,382	7,176	6,917
Total Households	2,975	3,072	3,100	3,095	3,020
Average Household size	2.21	2.10	2.03	1.96	1.92

The population for Elliott County based on the 2010 Census was 7,852 persons with an average person per household of 2.45. The projected population for the year 2020 is estimated at 7,633 with an average household size of 2.21 and is projected to decrease to 1.92 persons per household by the year 2040 according to the University of Louisville - Kentucky Data Center. Using the average persons per household over the next twenty years as 2.06, this estimate will be used for determining the demand for water usage projections within this planning document.

Historical records from the WTP for the amount of treated water produced to serve customers of the Sandy Hook Water District's system show that the average demand (water produced) per customer varies from approximately 136 gallons per day per customer (GPD/Customer) to approximately 155 GPD/Customer depending on the location of the customer. The peak day demand averages about 130% of the average day demand, and the minimum day demand is about 65% of the average day demand.

Information for the year 2019 show that the month of February was the maximum month of record having an average day of treated water produced of 298,000 gallons (total month's

production of 6,881,000 gallons). While the maximum day of record is near the plant's capacity of 0.374 MGD, there are hydraulic restrictions and finished water quality issues that limit the treatment plant's ability to effectively produce 374,000 gallons per day of potable water.

The current average household population based on the 2010 census is 2.45 persons per household for Elliott County. The total number of customers for the District's water system as of December 31, 2019 is approximately 1,350. The estimated population that is served by the current water system is presented in Table 1.03-3

Table 1.03-3 Total Population Served by Sandy Hook Water District

Total Population Served by Sandy Hook Water District			
	Number of Customers (2)	**Population Served** (1)	**Average Water Produced** (3)
Sandy Hook Water District	1,350	3,300	201,500

(1) The population served is based on 2.45 persons per customer.
(2) Total number of customers as of December 31, 2019
(3) Average Water Produced as of August 31, 2019

1.04 COMMUNITY ENGAGEMENT

The District will be holding a public meeting inviting all individuals affected by this project. This meeting will communicate the need for the project and the resulting system improvements that will be accomplished through the project.

SECTION 2 EXISTING FACILITIES

2.01 LOCATION

The Sandy Hook Water District is in Elliott County, Kentucky near the county seat of Sandy Hook, and located along the Little Sandy River in eastern Kentucky. The project topographic maps are included at the end of this report and illustrates the various locations of this project (Appendix A).

2.02 HISTORY

The Sandy Hook Water District operates a 0.374 MGD water treatment plant (WTP) and a water distribution system serving approximately 1,350 customers. The raw water source is groundwater and consists of eight groundwater wells, with five wells currently abandoned or inactive. The three active wells provide the WTP with the source water and the wells may be operated simultaneously during peak demand or individually during periods of low demand.

The District only uses three of the eight groundwater wells. Three wells are low volume producing and a fourth well was discovered to have natural gas in the well and is not usable.

The WTP consists of three green sand pressure filters and a gas chlorinator system for disinfection in addition to feeding liquid fluoride as required by regulations. The WTP has a below ground clearwell of 25,000-gallon capacity and two high service pumps that deliver the potable water to the distribution system.

The distribution system has four storage tanks with a total volume of 525,000 gallons and approximately 110 miles of water lines ranging in size from two inch to eight inch.

The storage tanks and associated capacities are listed below:

Tank Name	Capacity
Town Tank	160,000
Cemetery Tank	160,000
Brown Ridge Tank	100,000
Wrigley Tank	105,000

2.03 CONDITION OF EXISTING FACILITIES

The condition of the existing facilities was based on an evaluation of the existing treatment plant and the treatment processes and presented in the Preliminary Engineering Report, dated February 2020, and will not be repeated in this final engineering report.

2.04 FINANCIAL STATUS OF ANY EXISTING FACILITIES

Annual audits will be submitted to Rural Development as required by the RD bond issue. A customer breakdown will be provided in the Summary Addendum. The Summary Addendum will be issued at the conclusion of the CDBG income survey as to whether Sandy Hook Water qualifies for the CDBG grant funds.

2.05 WATER/ENERGY/WASTE AUDITS

No water, energy, or waste audit has been conducted on the existing water treatment plant or distribution system to date.

For most water treatment between 80% and 90% of energy consumed is for pumping of either raw water or distributing finished water. The District practices energy conservation when it is necessary to replace old or damaged motors with newer more efficiently designed motors and pumps.

SECTION 3 NEED FOR PROJECT

The current water treatment facility has been allowed to fall into disrepair necessitating either the renovation or replacement of the facility. Replacement has been chosen as the current location does not allow for any future growth and has proven to be problematic. Chemical delivery trucks must back down the county road in order to have room to deliver the necessary products. This is a narrow county road and the existing property surrounding the plant hinders any ability to expand on the existing site for the treatment facility.

The Wrigley water storage tank is an eighteen (18) year old, 105,000 glass-lined standpipe 47' tall and diameter of 20'. The interior resealing is necessary for the continued operation of this very important structure. Based on the last tank inspection report performed in May of 2014 (Appendix B), it was recommended to reseal the interior seams and random corrosion areas. These repairs are necessary for its continued use. This is the primary water storage facility for the southern portion of Sandy Hook's water system. Loss of this would compromise the populated areas of KY Highway 7 from Sandy Hook to areas in Northern Morgan County. In addition, variable frequency drives (VFDs) will be added to the pump motors at the primary pump station that supplies this tank and will allow work to be conducted on the tank while maintaining safe drinking water to all affected residents by providing adequate pressure in the lines while the tank is out of commission. Installation of the VFDs will also improve the overall performance of the pump station in energy costs and produce much less stress on current waterlines.

Water main replacement around the Sandy Hook area along KY Highway 556 and KY Highway 755 is also needed to replace existing water lines that are constantly problematic. This project will replace approximately 20,000 feet of problematic 4" PVC waterline affecting about 50 residences. The current water line has numerous small leaks and requires near-constant repairs in order to keep in service. The new line will be located adjacent to the abandoned water line location and reconnect to the same customer meters.

Additionally, should project funds be available the project may include maintenance to existing wells, well testing, a new well, or additional water main replacement.

3.01 HEALTH, SANITATION, AND SECURITY

The proposed project will replace the existing WTP, replace problematic water mains, and the rehabilitation of an existing water tank.

The glass lined tank was last inspected in 2014 and the results of that inspection showed the interior of the tank to be in a "fair" condition. In the report it noted some corrosion along the seams with slight pinholes that would only continue to increase in depth if not corrected in a reasonable amount of time. The tank also is losing its sealant which allows for additional corrosion if not resealed. The sacrificial anodes are non-existent. Failure to rectify these

aforementioned tank issues with continue to allow the tank to corrode and thus reduce the chlorine residual in the tanks as the rust areas break down the chlorine. The new anodes will allow any negative ions to be absorbed by the anodes instead of the tank. These actions will provide better quality of water to the customers as the chlorine residuals will remain stronger.

The replacement of approximately 20,000 LF of problematic water main is required as the District continues to repair broken pipe in a challenging area of ravines and drainage areas. These water main breaks not only interrupt service to the sixty effected customers, but continues to force the District to issue boil water advisories until the proper testing of the water is complete. This could also create low pressure in the effected areas which has the potential for contamination from surface water entering leaking joints or broken water mains.

A new water treatment plant replaces an aged facility that was first built in 1960, upgraded in 1986, then the replacement of various equipment in 2004. The new plant will allow all electrical items to be brought to code, and potentially replace chlorine gas with the safer liquid chlorine. Liquid fluoride may also be used to replace the more hazardous granular fluoride. The new plant will be designed to have all the latest OSHA equipment to safeguard and treat the employee from potential accidents. The old plants location is very difficult for the delivery of chemicals as there is no access for the truck drivers to turn around. All current deliveries are made by the drivers having to back down a county road for several hundred feet. The new location will provide easier access for chemical deliveries and less potential of accidents on and off the site. The new plant site will also be located in a more secure area of Howards Creek Road. The new site will also bring additional security to the main well (#8) as it will be located on the new plant property and thus will have the same updated security as the new plant.

3.02 AGING INFRASTRUCTURE

The existing water treatment plant was initially constructed in 1960 with a capacity of approximately 0.100 mgd. The existing plant consisted of two 7-foot diameter pressure vessels, a 5,000-gallon below ground clearwell, two sand filter beds, three groundwater wells, laboratory, two high service pumps, and chemical feed system for disinfection and fluoridation. In 2004 modifications and updates were installed as two new pressure filters and a 20,000 gallon below ground clearwell was installed with a new extended filter building. This also included additional piping, telemetry, and filter media.

The water treatment plant building has deteriorated due to age. New treatment processes are not needed, but new equipment and controls and the building needs to be replaced to adequately house the equipment and materials for treatment.

3.03 REASONABLE GROWTH

Growth has not been considered a significant factor in the need for the proposed project. As the District's customer base has increased in the last 30 years, the need to replace these older

water mains and aging water treatment plant to offer sustained water service to its customer base is a priority.

Reasonable growth and a slight increase in customers can be expected over the next 20 years. Based on population projections, the current trend for Elliott County indicates a decline in population. However, based on the steady increase in water customers over the past 10 years indicate an increase of approximate 1% per year. It may be concluded that by the year 2040 the WTP will need the capability to produce up to 0.500 MGD of water by the proposed plant for the existing and potential water customers of Elliot County and surrounding areas. Furthermore, it may be concluded that demand is more likely to be higher than lower and therefore making an abundant water supply a significant component of any water treatment plant site selection criteria is very important.

SECTION 4 ALTERNATIVES CONSIDERED

4.01 Description

The current treatment plant is operating properly and efficiently for the past several years. The facility has been allowed to fall into disrepair necessitating either the renovation or replacement of the facility or take “no action”.

The District considered several alternatives included upgrading the existing water treatment plant at the current location with full renovations. This would include replacing all hardware damaged by chlorine as well as replacement of the chlorine system, electrical system, pumps and building to contain the same equipment. This option was considered not viable due to the lack of adjacent property and existing overhead electrical service that would have to be relocated. The accessibility to the existing plant site is also inadequate. Due to the lack of adequate space and maneuverability, material and chemical delivery trucks must navigate backwards down the existing county road in order to have room to deliver the necessary products. This is a narrow county road and the existing property surrounding the plant hinders any ability to expand on the existing site for the treatment facility.

If the "no action" alternative was taken, the treatment plant would continue to fall into disrepair and prohibit any options for expansion to serve future customers in the next 20 years.

The alternative presented in this report was full replacement of the facility at another location allowing adequate accessibility for the building and treatment processes, as well as, material and chemical deliveries and future expansion.

4.02 Design Criteria

The design criteria that will be used on the project includes hydraulic analysis of the existing system to evaluate if adequate pressures are realized throughout the distribution system along with examining flushing velocities. By properly sizing the distribution mains to be installed the District will provide improved service to its customer base while also maintaining potable water of high quality.

The capacity of the proposed treatment plant was determined by reviewing historical population data for the past 20 years, water produced by the plant over the last seven (7) years, and projecting the population and customer growth over the next 20 years.

4.03 Map

Maps of the project area showing the extent of the water system improvements project are located at the end of this report as shown in Appendix A.

4.04 Environmental Impacts

An environmental report detailing the potential impacts of this project is being undertaken. Once the report is finalized any potential impacts will be taken into consideration and any necessary remediation measures will be taken to avoid any negative impact to the environment.

4.05 Land Requirements

Land requirements associated with this project will include the purchase of property on Howards Creek Road for the construction of the new water treatment plant. This is in close proximity to the existing treatment plant and District office so a minimal amount of infrastructure will need to be constructed due to the new WTP site location. This project will also include the need for private easements and encroachment permits from the Kentucky Department of Transportation. The District currently has an option on the proposed plant site, and the easements and permits will be obtained prior to any construction beginning.

4.06 Potential Construction Problems

As with any water main replacement project, a potential problem occurs with the existing infrastructure that is in place. It is imperative to maintain water service to all customers during construction and avoid the existing water main. Also, when an existing tank is temporarily removed from service for maintenance it is a priority to maintain adequate pressures by modifications to the existing pump station that serves this particular tank.

4.07 Sustainability Considerations

A. Water and Energy Efficiency

B. Green Infrastructure

C. Other

4.08 Cost Estimates

A preliminary project cost estimate is included at the end of this report (Appendix C).

SECTION 5 SELECTION OF AN ALTERNATIVE

5.01 Life Cycle Cost Analysis – Water Treatment Plant

The probable present worth cost analysis for the selected alternative is presented in this section. The selected alternative was evaluated on the basis of a finished water rated capacity of 0.500 mgd for the capital construction cost. The operation and maintenance (O&M) cost was evaluated on the basis of an initial flow rate of approximately 0.374 mgd with an increased capacity up to 0.500 mgd at the end of the 20 year period.

There were several components of the WTP that are considered common for all options. These common components include chlorination equipment, fluoridation equipment, pH adjustment equipment, generator, waste backwash pumps, laboratory equipment and furniture, high service booster pumps, clearwells, and on-site sanitary waste treatment. The costs for these items and the piping, electrical and supervisory control and data acquisition (SCADA), and heating, ventilation, and air conditioning (HVAC) considered necessary for each process was considered basically the same for each individual alternative.

The opinion of probable present worth costs was developed for the selected alternative. The total present worth costs include the capital costs, the present worth of life cycle operation and maintenance (O&M) costs, and the present worth of salvage value of equipment and structures at the end of the life cycle. The life cycle of this project was assumed to be 20 years and a discount rate of 7% was used.

The categories used in the O&M cost were chemical cost, electric cost, filter media replacement, and miscellaneous and maintenance expenses. Personnel staffing of the treatment plant on each treatment option was included and assumed that the staffing level would be the same for all plants.

The advantage to the construction of modular vertical pressure filter treatment units is that this allows for additional capacity to be easily installed, in very short time frame, as demand changes. The capital expense of the units may be delayed until there is a need and capital is available. This concept of saving capital cost on the initial phase of construction could also be applied to the additional groundwater wells, the size of the process building, the second clearwell, additional high service pumps, and additional chemical storage capacity needed for the higher capacity plant. The actual cost savings would need to be further investigated during the final design portion of the project in order to reduce the total cost to the available funds for the project.

O&M costs for the treatment plant include the costs of yearly O&M for the life cycle of the project (20 years). O&M costs include electrical, CIP chemical costs, and filter media replacement costs. The total O&M costs may range from approximately $328,300 to $538,000 per year for the years 2020 and 2040, respectively.

The average annual O&M cost for the life cycle of this project is approximately $433,100. The opinion of probable present worth costs is approximately $7,448,000. A more detailed analysis is included in the Appendix C.

5.02 Life Cycle Cost Analysis – Water Distribution System

In the selection of the preferred alternative for this part of the project, the life cycle cost of the materials to be utilized has been considered. The main material to be utilized is for the water mains. The water main will be of PVC material and recent studies estimate a service life of up to 100 years. This length of service life provides for lower operating and maintenance costs to be realized by the District.

5.03 Non-Monetary Factors

The non-monetary factors considered are the ability to provide service to the existing customer base. With a new water treatment plant and reliable water mains, the existing customer base will have improved service and a higher quality product due to the elimination of existing problematic water mains.

SECTION 6 PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

6.01 Final Design

A. New Water Treatment Plant Building – Design Parameters

1. Exterior - General

The building will be a pre-engineered steel building structural frame with perimeter architectural concrete masonry exterior single walls. Location of the building's major components, including windows, louvers, grilles, and finish material, will be designed to match the building structure style and enhance the visual aesthetics of the structure.

The roofs will consist of standing seam metal roof panels over roof sheathing. The roof will be sloped to provide drainage.

The building structure will have a design load in accordance with the Kentucky Building Code (Latest Revision).

2. Floors

Building floors will be pitched to floor drains in process areas, generally at a slope of 3/16 inches per foot. Process area floors will be coated with an appropriate coating system. Floors in the laboratory, chemical feed rooms, and office will be finished concrete with the appropriate coating system.

3. Walls

Process building exterior walls will be constructed of material to match the building style and interior walls will be constructed of concrete block. All interior walls will be painted with epoxy paint for the block walls. Walls will be designed in accordance with the Kentucky Building Code.

Portions of exposed concrete walls that extend above finish grade will be rubbed to achieve a smooth finish free of imperfections or honeycomb holes.

4. Ceilings

Ceilings in process areas will generally be exposed trusses and coated with paint. A gypsum board ceiling will be provided throughout the laboratory, chemical feed rooms, and office portions of the building.

5. Doors

Hollow metal doors and frames with an epoxy paint finish will be used in most areas of the process buildings and used in chemical storage areas.

6. Windows

All exterior windows will be the vinyl clad fixed or casement type. Interior windows in process buildings will be aluminum fixed type. Interior windows in the laboratory and office portions of the building will be hollow metal-framed borrowed-light-type windows. Exterior windows will have 1-inch insulating glass.

7. Grating

Aluminum rectangular bar-type serrated or anti-slip top grating will be used in all areas requiring grating.

8. Mechanical Process and Plumbing

The treatment plant process will generally be designed in accordance with KDOW Administrative Regulations Title 401, Chapter 8: Public Water Supply.

9. Heating and Ventilating

The heating, ventilation and air-conditioning systems will generally be designed in accordance with the BOCA National Mechanical Code/1996 and NFPA Chapter 820.

Ventilation systems for hazardous locations and chemical facilities will generally be designed and balanced to achieve a negative static pressure relative to adjacent spaces.

In order to minimize premature corrosion of electrical equipment, the electrical equipment and electrical control rooms will be provided with a ventilation system which, when operating, are expected to achieve a positive static pressure relative to adjacent spaces. In general, supplying air into the room with gravity relief will be used to achieve this pressure relationship.

Dehumidification will be provided in areas where condensation is likely, such as pressure filter areas.

B. New Pressure Filters, Piping, & Controls

The new water treatment plant will have three vertical pressure filters, seven (7) foot in diameter and room for an additional three filters to be constructed in the future, as needed. The pressure filters will be piped to allow for each filter to be individually operated and the ability to remove one filter from service and still maintain the rated capacity of the treatment plant.

The vertical pressure filters will be constructed of carbon steel, ASME code stamped, and incorporate a combined air/water backwash system, which provides superior media cleansing and greatly reduced backwash water volume. Each filter vessel shall include stainless steel backwash collection trough, filter media selected specifically for the raw water (GreensandPlus™ media). PVC header-lateral air wash distributor, graded support gravels, PVC header-lateral underdrain with non-metallic gravel-retaining nozzles, concrete subfill as required, and shall be factory finish-painted vessel interior; tank exterior blasted and primed and an epoxy finish coat for the exterior.

Additional components and services included as follows: Fully automated PLC control system and panel, system valves, including electrically actuated butterfly valves for filter backwash, ductile iron filter face piping, air wash blower package system, loss of head pressure gauge panel, with pressure switches, backwash rate of flow meter, and factory service representative of installation, inspection, media installation supervision, start-up, and operator training

The backwash waste water is piped to the backwash lagoons to allow for the settled precipitates to dry before being disposed.

C. New Backwash Sand Filters (Backwash Lagoons)

Waste filter wash water from plant will be piped to the sand filters with a total filter area sufficient to adequately dewater applied solids. The "red water" filter shall have sufficient capacity to contain, above the level of the sand, the entire volume of wash water produced by washing all of the production filters in the plant, unless the production filters are washed on a rotating schedule and the flow through the production filters is regulated by true rate of flow controllers.

The new treatment plant will have two new backwash lagoons with a total surface area of 1,187 square feet and space available for two additional lagoons to be constructed in the future, as needed. The two sand filters allow for only one filter to be removed from service at any time and still function as needed.

Additionally, the raw water piping shall be constructed to allow for pre-flushing of the wells for a predetermined time to allow for any settled particles or contaminants to be discharged prior to entering the pressure filters.

D. Above ground Clearwell Storage - Chlorine Contact

Chlorine contact can be provided in either a tank built especially for chlorine contact or by baffling and control of water levels in the clearwell. Use of the clearwell for chlorine contact reduces its usable storage volume. For the sake of economy, it is recommended that part of the clearwell be used for chlorine contact.

Kentucky Division of Water General Design Criteria currently recommends that systems store at least 15% of the daily production in storage facilities. This water treatment facility should have at least 75,000 gallons at 0.50 MGD production to meet the recommended 15% storage. Two 40,000 gallon, above ground, glass lined tanks are recommended to provide adequate storage.

The clearwell storage tank will serve as a wetwell for the high service pumps. As the point of chlorination in treatment plants was moved back in the process to avoid excessive formation of disinfection by products, subsequent to the THM rule, clearwells have become increasingly important in the disinfection process. Another creative use of the clearwell is to provide finished water storage to allow the plant to be shut down during water quality or other types of emergencies.

E. Chemical Treatment

It is proposed to provide pre- and post-chemical treatment of the water via liquid or powered feed chemicals and these chemicals are added to the treated water to meet the requirements for potable water quality in the post-treatment phase of the treatment process. The treated water will first be disinfected to destroy any disease-causing organisms such as bacteria and viruses. Chlorine gas is proposed to meet the disinfection requirements for the proposed WTP. Following addition of chlorine gas for disinfection purposes, a polyphosphate inhibitor, and sodium florosilicate (fluoride) will also be added to the chlorinated water. The chemicals will be added in the filtered water following the chlorine injection. A static mixer will be specified to provide adequate mixing of the chemicals prior to finished water storage. The chemical feed systems for the four (4) feed chemicals will include be located in the process building.

1. Disinfection

Disinfection of the treated water is necessary to provide an effective disinfection residual within the distribution system for safe drinking water. It is recommended that a free chlorine disinfectant be used because it is common water treatment practice and provides needed disinfection at less cost and system complexity compared to other methods of disinfection.

While virus inactivation is not currently required for the groundwater source, it is recommended that the water treatment facility provide a free chlorine residual following treatment. The US EPA guidance manual for Compliance with the Filtration Disinfection Requirements for Public Water Systems Using Surface Water Sources suggest that a contact time of 6 mg/L – min (at a water temperature of 50°F, pH between 6 and 9 SU) be used to achieve 4-log virus inactivation.

The primary disinfection method for the proposed WTP will consist of chlorination using a free chlorine residual. Chlorine will be added in gas form. A maximum design dosage of 4 mg/l is anticipated for the process water. The storage space will be designed to accommodate the ultimate design flow of 0.50 MGD. However, at the initial design flow of 0.374 MGD, a feed rate of 7 to 14 pounds of chlorine gas per day will be required for disinfection. The chlorine gas will be provided in 150 pound cylinders.

Regardless of the regulations, operators will need to maintain a free chlorine residual within the distribution system to promote compliance with the Total Coliform Rule. The intent of the proposed design is that additional free chlorine be added ahead of each connection point served by the water treatment facility at concentrations to comply with the Total Coliform Rule.

2. Fluoride

Sodium fluorosilicate (Na2SiF6) is the sodium salt of fluorosilicic acid and is a powder or very fine crystal that is easier to ship than fluorosilicic acid. The Sodium fluorosilicate can also be furnished in tablet form.

Caution should be used in handling and storage of this chemical and is necessary because of the aggressive nature of this chemical. However, sodium fluorosilicate (Na2SiF6) tablets are much safer than

hydrofluosilicic acid. The operator will need safety glasses or goggles, rubber gloves, or PPE as required when handling the tablets.

The proposed system will be the New Wave Fluoridation Tablet and Feeder System by KC Industries. The system is a self-contained feeder system where tablets are added to the feeder system with 200 tablets per feeder tube. The fluoride is released through water erosion of the tablet surface area to saturation. A single feeder tube is able to fluoridate approximately 300,000 gallons/day per tube at 0 background fluoride with a goal of 0.7 F.

This system and tablets are NSF 60 certified. The equipment is NSF/ANSI/CAN Standard 61 and NSF/ANSI 372 which establishes a standardized methodology for the determination and verification of product compliance with a maximum weighted average lead content requirement of 0.25 percent as required by the U.S. Safe Drinking Water Act.

The feeder tubes are stacked with the tablets unevenly spaced to produce maximum surface area exposed to the water flowing through the feeder tubes and across the tablets. The optimum flow rate range is 0.25 - 0.5 gallons per minute. Under normal continuous using conditions the effluent feeder fluoride concentration is expected to reach 460 - 545 ppm F at 0.25 gallons/minute and 305 ppm F at 0.5 gallons/minute. If the unit sits overnight with the tablets present in the feeder tubes, the initial effluent solution will register at higher initial F levels in the buffer tank and then, after a period of time, will decline to normal operating available F levels.

Effluent from the feeder tubes will flow into a buffer/day tank (capacity of 90 gallons) and be constructed of polyethylene. The feed pumps will be of the variable speed, peristaltic type design and interlocked with the raw water flow meter. The 90-gallon buffer tank (day tank) will have level controls to energize the inlet control valve on low level and de-energize on high level. The metering pumps will be controlled via SCADA and pump the fluoride based on the flow rate indicated from the raw water flow meter (basically the flow from the well pumps).

The feed pumps will energize when flow is observed and de-energize when flow ceases. Two (2) feed pumps will be required. Each pump will have a pumping capacity of 0.25 to 0.50 gpm at a minimum turndown ratio of 1 to 100. The pumps will be equipped with variable speed

controls to adjust the chemical feed rate in proportion to the influent raw water flow.

The proposed system is considered a continuous feed system and to meet the required bulk storage at ultimate flow conditions, additional pails of tablets will be provided as needed. In order to be cost effective, the number of pails will be determined and will be greater than the 30 days storage.

Caution shall be used in handling and storage of this chemical and is necessary because of the aggressive nature of this chemical.

3. Potassium Permanganate

Potassium permanganate is another treatment chemical used to provide oxidation for the removal of iron and manganese from groundwater sources. The chemical is typically associated with a pressure or gravity sand filter process to aid in contaminant removal.

Potassium permanganate will be added in the pre-treatment phase to provide oxidation for the removal of iron and manganese from groundwater sources. The raw water will receive a design dosage of up to 0.5 mg/l. Based on this design dosage, and the solution strength of 1.5%, approximately 3 to 8 gpd of potassium permanganate will be required at the initial and ultimate design flow conditions.

To meet the required 30 days of bulk storage at ultimate flow conditions, the storage capacity needed is approximately 250 gallons. Potassium permanganate is typically bulk delivered in the form of 55-pound pails of granular crystalline powder. To meet the 30 days storage, space for up to five pails will be made available.

The chemical feed system will be designed to handle the various dry chemicals via a volumetric feeder used for the water and wastewater treatment processes. These rugged-duty feeders employ dissimilar speed, double concentric auger metering mechanism for unequalled performance and trouble-free operation used for non-free flowing materials, with a conditioning auger and 50-gallon dissolving tank.

The dissolving tank are available with a variety of baffle configurations to ensure complete mixing of the chemical and optimum detention time. They can also be provided with certain accessories to produce constant strength solutions or slurries, or to meet other special requirements.

Typical optional equipment includes solenoid valves, level probes, rotameters, etc.

The dissolving tank will serve as the day tank with a capacity of 50 gallons. The feed pumps will be of the variable speed, peristaltic type design. Two (2) feed pumps will be required. Each pump will have a pumping capacity of 0.2 to 0.5 gph at a minimum turndown ratio of 1 to 100. The pumps will be equipped with variable speed controls to adjust the chemical feed rate in proportion to the flow.

4. Corrosion Inhibitor

Corrosion inhibitor is typically added to help reduce the corrosivity of the water with respect to controlling iron, manganese, scale, and corrosion problems in drinking water systems. Sequestration is a form of treatment in which a chemical, known as a sequestrant, is added to groundwater. The chemical forms a bond with iron and manganese ions, allowing them to remain in solution. Sequestration for drinking water treatment of iron and manganese is generally limited to sources where the iron is less than 0.6 mg/L and the manganese is less than 0.1 mg/L. Sequestration of source water concentrations above these values may result in aesthetic issues in the distribution system and is generally not allowed by regulators; however, this chemical will be injected after treatment where the iron and manganese are at the lower levels and allowing them to remain in solution in the distribution system

Aquadene SK-7103 is a phosphate based dry blend chemical specially formulated to control iron, manganese, scale, and corrosion problems in drinking water systems. These products are also used as a sequestrant to isolate and hold unwanted impurities from depositing into the water system. Controlling staining (red water caused by iron- based impurities and black water caused by manganese-based impurities), controlling copper, and controlling lead release to the public are the primary applications of phosphate-based products.

Based on quality of the treated waters, it is anticipated that the water will require a maximum design dosage of 0.5 mg/L. Using this design dosage, approximately 3 to 8 gpd of corrosion inhibitor will be required at the initial start-up and ultimate flow conditions.

To meet the required 30 days of bulk storage at ultimate flow conditions, the storage capacity needed is approximately 250 gallons. Aquadene SK-7103 is typically bulk delivered in the form of 50-pound pails of

granular crystalline powder. To meet the 30 days storage, space for up to five pails will be made available.

The chemical feed system will be designed to handle the various dry chemicals via a volumetric feeders used for the water and wastewater treatment processes. These rugged-duty feeders employ dissimilar speed, double concentric auger metering mechanism for unequalled performance and trouble-free operation used for non-free flowing materials, with a conditioning auger and 50-gallon dissolving tank.

The dissolving tank are available with a variety of baffle configurations to ensure complete mixing of the chemical and optimum detention time. They can also be provided with certain accessories to produce constant strength solutions or slurries, or to meet other special requirements. Typical optional equipment includes solenoid valves, level probes, rotameters, etc.

The dissolving tank will serve as the day tank with a capacity of 50 gallons. The feed pumps will be of the variable speed, peristaltic type design. Two (2) feed pumps will be required. Each pump will have a pumping capacity of 0.2 to 0.5 gph at a minimum turndown ratio of 1 to 100. The pumps will be equipped with variable speed controls to adjust the chemical feed rate in proportion to the flow.

5. Chemical Shipping, Handling, and Storage

All chemicals should be handled in a manner in conformance with the respective Material Safety Data Sheets (MSDS). All chemical feed pump materials will be consistent with the type and quantity of chemical to be supplied.

Additional chemical feed systems mentioned with each treatment process system description will be provided to meet the treatment requirements recommended by the system manufacturers.

F. High Service Pumps

Three high service pumps will be provided to pump treated water to the system users. One of the pumps will act as a spare. The pumps will be designed to convey up to 400 to 500 GPM (peak day-peak hour) to the distribution system. Space for a fourth, future pump will also be provided. If the ultimate design flow of the WTP increases to 0.500 MGD or greater, the fourth pump would be added

and the existing pumps would be upgraded or replaced to provide sufficient pumping capacity.

The high service pumps will be located in the new process building. The high service pumps provide transport of the finished water from the clearwell to the distribution system. The new high service pumps will be either vertical turbine can type or split case pumps. The high service pumps will be installed with variable frequency drives (VFDs). Pumps will be manifold to provide adequate redundancy and reliability. Three high service pumps will be constructed initially with the remaining fourth pump coming on line as the system demand increases.

A turbine type flow meter will be provided on the high service pump discharge piping for flow measurement and recording.

The design of the pumps will be based on the hydraulic modeling of the distribution system that will be done as part of the distribution system design. The high service pumps will be equipped with isolation and check valves and associated piping designed for the appropriate conditions, to deliver water to the distribution system. Emergency power will be provided to the high service pumps from the plant standby power system.

G. Emergency Power

Standby power will be provided by a new outdoor diesel generator set in a weatherproof enclosure. The generator will be capable of supplying all running loads required when the plant is operating at minimal capacity. The generator is intended for standby use during a power outage only. When power from the utility is lost due to a planned or unplanned interruption, the generator will start and the automatic transfer switch (ATS) will close to the "emergency" bus. Upon restoration of utility power, the ATS will close to the "normal" bus. Large motor loads will be provided with time delays to stagger their starts. This will prevent the generator from becoming overloaded due to high motor inrush currents upon startup.

A steel double wall fuel oil storage tank will be provided with fuel capacity for three days of continuous full load operation. A heavy-duty exhaust silencer and muffler will be provided for the generator and will also have walls on the sides for further sound attenuation. A leak detection system will be included with the fuel tank to monitor the interstitial space between walls of the tank and will send a leak signal to the control room computer for logging and display. Generator status signals will also be sent to the control room computer for logging and display although no generator control will be provided at the control room computer.

6.02 Project Schedule

The proposed project schedule is:

1. Secure Letter of Conditions from USDA RD – July 2020
2. Secure Land/Easement/Encroachment Permits – April 2021
3. Division of Water Approval – April 2021
4. Advertise for Bids – April 2022
5. Contract Award/Construction – September 2022
6. Substantial Completion – August 2023
7. Final Completion – September 2023

6.03 Permit Requirements

This section describes the permits required for the water treatment plant, well field, and water distribution system network.

A. WATER TREATMENT PLANT

The Kentucky Division of Water has the legal authority for the permit approval from the statute KRS 224.10-110 and the regulations at 401 KAR 8:100. Approval to construct a Public Water Supply Facility is required prior to construction. Approval is required prior to installation of any new facilities or works, or alteration or reconstruction of any existing facilities in any public or semi-public water supply and must be approved by the Kentucky Division of Water, Water Infrastructure Branch.

Permitting requirements for the proposed project will be conducted under these regulations and the jurisdiction the Kentucky Division of Water, as well as, local applicable building codes. If a project is being funded by a municipality, water district or other publicly owned treatment works, permit fees are not applicable.

The KDOW will be responsible for the review and issuance of the construction and applicable discharge permits associated with the water treatment plant design, construction, and operation. KDOW will require that complete plans and specifications be submitted for final design plan review. In addition to plans and specifications, thorough design calculations must be submitted along with the necessary paperwork from the Owner. The Kentucky Infrastructure Agency State Revolving Fund (SRF) will require that additional documents be incorporated with the final design submission to the KDOW in order to obtain construction approval with funding from the state agency. Note the Sandy Hook Water District will be looking to other agencies

such as Rural Development (RD) and Community Development Block Grant Program (CDBG) for additional funding. As such their requirements will also need to be inserted in the documents.

The review by KDOW does not require any fees for municipally owned water systems. Upon completion of the plan review, the KDOW Water Infrastructure Branch will issue a Letter of Approval for the construction of the water treatment plant.

A permit will be required for the discharge of treatment wastes from the proposed facility. The KPDES permit will allow for the discharge of the treatment process wastes. The KDOW's Surface Water Permits Branch will be responsible for supplying the necessary permit requirements, reviewing the permit application, and issuance of the KPDES permit.

B. FLOODPLAIN PERMITTING

The KDOW is authorized through KRS 151 to manage development in floodplains. Any type of development in, along, or across a stream requires a floodplain permit from the Division. Typical activities requiring a permit include, but are not limited to, residential & commercial structures, stream crossings, fill, stream alterations & relocations, and small stream impoundments. State floodplain development requirements are outlined in 401 KAR 4:060.

The KDOW Floodplain Management Section has the primary responsibility for the approval or denial of proposed development and other activities in the floodplain of all streams in the Commonwealth. Permits are issued for proposed actions in floodplains that meet all state floodplain statutes, regulations, and standards. Additionally, the Floodplain Management section ensures that permitted development in floodplains complies with applicable requirements and limitations.

A portion of the WTP site is located within a designated floodplain. All proposed work and site activities will be coordinated with and approved by KDOW prior to any construction activity.

C. 401 WATER QUALITY CERTIFICATION

The 401 Water Quality Certification Program of KDOW is the Commonwealth's review and authorization of selected federal license and permits. Any person, firm, or agency (including federal, state, and local government agencies) planning to work or place dredged or fill material in waters of the Commonwealth should contact Kentucky Division of Water, Water Quality Certification Section to

obtain applicable permits. Federal licenses and permits subject to 401 Water Quality Certification include Clean Water Act 404 permits for discharge of dredged or fill material issued by the USACE, Federal Energy Regulatory Commission (FERC) hydropower licenses, and Rivers and Harbors Act 9 and 10 permits for activities that have a potential discharge in navigable waters issued by the USACE. A 401 Water Quality Certification from the Commonwealth of Kentucky also affirms that the discharge will not violate Kentucky's water quality standards.

A 401 Water Quality Certification will be obtained for all construction activities for the project prior to any construction activity.

D. WELL FIELD

Permitting requirements for any new or proposed well field construction shall be conducted under the regulations and jurisdiction of the Kentucky Division of Water. All new groundwater wells will be constructed in accordance with 401 KAR 6:310 - Water well construction practices and standards. Kentucky Division of Water – Watershed Management Branch is responsible for the administration of the water well and monitoring well certification program, develop and oversee compliance with water well and monitoring well drilling regulations, and to research and develop knowledge of, and protection for, the state's groundwater resources.

E. DISTRIBUTION SYSTEM NETWORK

1. Kentucky Division of Water Permitting

Permitting requirements for the proposed distribution system construction will be conducted under the regulations and jurisdiction of the Kentucky Division of Water. KYDOW will require complete plans and specifications be submitted for review and in addition to plans and specifications, thorough hydraulic calculations of the distribution system must be submitted along with the necessary forms.

Stream crossing permits from the KYDOW Floodplain Management will not be required as long as the water mains are constructed as subfluvial pipe crossings in accordance with Administrative Regulation 401 KAR 4:050, Section 2.

2. Highway Encroachment Permit and Crossings

The proposed water mains will be constructed across and along the rights-of-way of KY Highway 755, and KY Highway 556. The transmission main will be installed by boring and encasement under all state highway rights-of-way.

For placement of the transmission mains within the state right-of-way, an encroachment permit will be required for construction in Elliott County. The encroachment permit will be filed with the Flemingsburg Regional Office of the Kentucky Transportation Cabinet for crossing all state-maintained highways. The regional office will be contacted and involved during the design process to coordinate the location of the pipeline within their right-of-way.

Any transmission main work along Howards Creek Road or other county roads will entail an encroachment permit from the Elliott County Fiscal Court.

F. PROPERTY ACQUISITIONS

The property for the proposed water treatment plant is currently under contract with an option to purchase. This property will be purchased using local or District funds.

For any new property to be acquired for any permanent interest such as fee simple title, land contracts, permanent easements, long-term leases, and right-of-ways the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (URA) and the Relocation Act Amendments of 1987 will be followed.

G. OPERATOR CERTIFICATION REQUIREMENTS

Water treatment plants or systems shall be classified as one of four classes, in accordance with 401 KAR 8:030, Section 6, subsections (2) and (3). This classification will be based on the cabinet-assigned design capacity for finished water production that the treatment plant is able to produce in twenty-four (24) continuous hours of production, taking all limiting factors into consideration, and the treatment process employed.

The Kentucky Administrative Regulations requires that each public water system with water treatment and distribution be operated under the supervision of a certified operator in direct responsible charge of the system. There are four separate classes of water treatment plant operators (Classes I, II, III, and IV) and two subclasses (A and B). The subclass designation depends on the type of

treatment process. According to KAR 8:030 Section 6, Subclass A water treatment plant treats surface water or groundwater under the direct influence of surface water; or groundwater not under the direct influence of surface water that uses gravity filtration. Subclass B water treatment plant treats groundwater not under the direct influence of surface water and uses a filtration process other than gravity filtration; or groundwater not under the direct influence of surface water that does not use filtration processes.

A Class II water treatment plant has an assigned treatment capacity of 50,000 gallons per day or more but less than 500,000 gallons per day. A Class II water distribution system serves a population equal to or greater than 1,500 but less than 15,000.

The proposed treatment facility and distribution system is anticipated to be a Class IIB facility.

H. STAFFING REQUIREMENTS

Staffing requirements as indicated below are based on the treatment plant being a Class IIB facility. The initial capacity of the proposed plant is expected to be less than the full 0.500 MGD plant and will be designed accordingly to allow for expansion by adding more vertical pressure filter units. It is anticipated that the construction of the WTP will be phased with the initial capacity of approximately 0.374 MGD.

Below is a listing of the plant and distribution system operators and certificate numbers:

Sandy Hook Water District Water Treatment Plant
PWSID # 0320383

Name	Type of License	License Number	Classification Level
Kevin R. Winkleman	Water Treatment Plant / Distribution	17073 25276	III-B III-D
Joe Adkins	Water Treatment Plant	27154	II-B

6.04 Total Project Cost Estimate (Engineer's Opinion of Probable Cost)

A preliminary project cost estimate is included at the end of this report (Appendix C).

6.05 Annual Operating Budget

A Summary Addendum will be prepared for the project which will examine the Districts current and future financial position. Included with the Summary Addendum will be an analysis of the District's current income, annual O & M Costs, current and future debt repayments, and current reserves. The Summary Addendum will propose a suggested rate for the District in order to meet its current and future debt obligations.

A. Income
B. Annual O&M Costs
C. Debt Repayments
D. Reserves

SECTION 7 PROJECT BUDGET AND FUNDING

7.01 Bidding and Recommendations

The project was advertised on April 29 and May 13, 2022 in the Elliott County News, and construction bids were opened on June 2, 2022 at 2:00 p.m. at the Sandy Hook Water District office. The Sandy Hook Water District project was bid in two contracts with Contract 12 including the new water treatment plant and contract 13 including the water main replacement on KY 755 and KY 556. Listed below is the pertinent information with regarding the bids for the various contracts (See Appendix D for Certified Bid Tabs):

Contract No.	No. of Bidders	Low Bidder	Amount
12	4	Herrick Company, Inc.	$ 7,150,000.00
13	5	G & W Construction, Inc.	$ 768,428.63

The engineer's estimate was modified in March of 2021 from the original 2019 estimate with the addition of the ARC grant for the following: Contract 12 - $2,780,000; Contract 13 - $800,000.

The low bid for Contract 12 came in over the engineer's estimate due to several factors, including the unprecedented inflation, gas and diesel prices, American Iron and Steel requirements, and the COVID 19 pandemic. Additionally, the availability of PVC pipe and other plant materials will be another issue that will need to be addressed with the successful contractors.

Initially, the project budget for the construction of both contracts was at $3.58 million with total project costs of $4.68 million. The District had initially sought a $1,000,000 CDBG grant and a $500,000 ARC grant, but issues and long delays in the processing of the CDBG grant forced the Department of Local Government to delete the CDBG grant and instead approve a $1.5 million dollar grant from ARC. This decision allowed an already delayed project to finally move forward.

Since the bids were approximately 4 million above the available funds for Contract 12, the District sought additional funding and the engineers sought a negotiation with the three lowest bidders to find a middle ground to keep the project viable (See Appendix E). At the June 9, 2022 board meeting the Sandy Hook Water District officially requested an additional $3.3 million in funding with the hopes that twenty percent of this

amount could be approved as grant to make the additional loan monies approximately $2.6 million. The District made the following decisions/requests at the June 9th meeting:

1. Request an additional $3.3 million along with the request of twenty percent in grant.
2. Negotiate with the lowest three bidders on Contract 12 to be within the $3.3 million additional funding.
3. Remove the tank rehab of approximately $100,000 from Contract 13, if needed.
4. Continue to monitor any other funding through ARPA, and the KY Cleaner Water Program that could provide additional relief.
5. The District accepted the approximate rate increases that were presented that were based on an additional $2.6 million in loan.

7.02 BID NEGOTIATIONS

It was decided that for Contracts 13, the contract would be evaluated and any potential cost savings be identified. For Contract 12, it was decided that the District would follow the requirements of competitive sealed bidding under KRS Chapter 45A and enter into bid negotiations with the three low bidders.

Letters were issued to the three low bidders for Contract 12, Herrick Company, Inc., Pace Contracting, LLC, and Smith Contractors, Inc. asking if they were interested in entering into the negotiations on June 13, 2022.

In the best interest of the District to prevent further delay in the project and pursuant to KRS 45A.090 – Negotiation after competitive sealed bidding when all bids exceed available funds, the District will conduct competitive negotiations pursuant to KRS 45A.085 - Competitive negotiation with the three (3) low evaluated responsive, responsible, best, and qualified bidders determined in writing by the bids submitted, based on criteria contained in the bid invitation. Such competitive negotiations will be conducted under the following restrictions:

1. All discussions pertaining to the revision of the specifications or quantities are held with all potential offerors and shall be afforded an opportunity to take part in such discussions.

2. The award will be based on the low evaluated, responsive, responsible, qualified offeror and based on the best evaluated offer.

Due to the current situation regarding the supply chain crisis, the current availability of materials and equipment for the project, and to allow for an expeditious response and not permit unnecessary delays in providing the revised offer, the District is allowing the Contractor to make

any viable offer for potential cost savings on the project to reduce the overall cost to within available funds. All suggested or recommended options resulting in a potential cost savings will be evaluated and considered on their own merit in determining the best evaluated offer. The attached document will be utilized to evaluate each bidder's offer for the overall potential cost savings on the project.

It was requested that interested parties respond in writing to Bluegrass Engineering, PLLC no later than Wednesday, June 15, 2022 by 2:00 p.m. (EDT) if they were interested in entering into the negotiations. If no response was received by the deadline stated, then it would be presumed that the company declines to participate in the negotiations.

If the company was willing to participate in the negotiations, then all potential cost savings items identified along with the associated savings amount and brief description of the item shall be submitted to Bluegrass Engineering, PLLC no later than Wednesday, June 22, 2022 by 2:00 p.m. (EDT). If no response is received by the deadline stated, then it would be presumed that the company has withdrawn from the negotiations.

Both Herrick Company, Inc. and Pace Contracting, LLC responded they were interested in entering into the negotiations. Smith Contractors, Inc. replied via e-mail that they would not be competitive in negotiations.

The two contractors provided a list of potential cost saving items on the project to reduce the overall cost to within available funds along with the associated savings amount and brief description of the item on June 22, 2022. Each suggested or recommended option resulting in a potential cost savings was evaluated and considered on its own merit. In determining the low evaluated, responsive, responsible, qualified, and best evaluated offer, each item was scored per the competitive negotiation review summary for the overall potential cost savings on the project.

Based on the evaluation criteria, Herrick Company, Inc. provided the best evaluated offer for a cost savings of $810,000.00 for a revised bid amount of $6,340,000.00.

Review of Contracts 13 for potential cost savings items resulted in the recommended changes of deleting Bid Item No. 21 – Reseal Interior of Wrigley Tank for a cost savings of $99,820.00.

The revised total construction cost is presented below:

Contract No. 12	Herrick Company, Inc., Lawrenceburg, KY	$ 6,340,000.00
Contract No. 13	G&W Construction, Co., Inc., Morehead, KY	$ 668,608.63
	Total Construction Bids	**$7,008,608.63**

7.03 PROJECT FUNDING

Based upon the funding for the original project consists of the following:

Rural Development Loan	$1,180,000
RD Grant	$2,000,000
ARC Grant	$1,500,000
Total	$4,680,000

The additional funding requests consists of the following:

Rural Development Loan	$2,640,000
RD Grant	$660,000
Total	$3,300,000

The total funding package with those committed and requested are as follows:

Rural Development Loan	$3,820,000
RD Grant	$2,660,000
ARC Grant	$1,500,000
Total	**$7,980,000**

7.04 REVISED PROJECT BUDGET

Based upon the revised bids, the District is in need of an additional $3,300,000 to make this project viable. Communication was initiated with Rural Development about the opportunity to borrow additional funds and if additional grant dollars would be available. Rural Development responded favorable to the District's inquiries. An additional request will be made by the District to borrow an additional $2,640,000 and receive an additional $ 660,000 in grant funds.

After the successful negotiations with the low bidders, the entire budget was re-worked to reflect the revised bid prices and the subsequent effect on engineering fees, legal fees, interest cost, and contingencies.

The revised project budget is as follows:

Construction Cost		
Contract No. 12	Herrick Company, Inc., Lawrenceburg, KY	$ 6,340,000.00
Contract No. 13	G&W Construction, Co., Inc., Morehead, KY	$668,609.00
	Construction Cost	**$7,008,609.00**
	Contingency – 5%	**$323,091.00**
	Total Construction Cost	**$7,331,700.00**
Non-Construction Cost		
Interest		$ 35,000.00
Legal and Administrative Expenses		$ 40,000.00
Reimbursement to SHWD - Land, Appraisals, Archaeology, Building Permit, Filings, and other		$ 72,000.00
Engineering Fees - Design		$ 179,300.00
Engineering Fees - Construction Administration		$ 45,000.00
Engineering Fees - Inspection		$ 160,000.00
Engineering Fees - PER, Environmental, Geo-tech, Boundary Survey, ARC, and AIS Cert.		$ 117,000.00
	Sub-Total Non-Construction Cost	**$648,300.00**
	Total Project Cost	**$7,980,000.00**

It is the recommendation of Bluegrass Engineering, PLLC to proceed with the construction phase of the project, upon the completion of the remaining Rural Development submittals and construction conferences.

7.05 ANNUAL OPERATING COSTS AND PROPOSED RATES

The proposed rates will allow the Sandy Hook Water District to fully fund the debt service for this project. The project will allow SHWD to realize a reduction in annual operating costs over the course of the loan. The replacement of the problematic water main and the new efficient equipment at the plant will see a reduction in labor hours, fuel costs and vehicle expense required to monitor and repair the aged system, which should reduce their water loss rate.

The combination of the proposed rates along with the operational efficiencies that are gained with this project will allow SHWD to further strengthen their financial position over the course of the loan.

The proposed rates (with additional RD grant of $660,000) are as follows:

5/8” Meters		
First 2,000	$37.14	Minimum
Next 8000	$14.55	
Next 40,000	$13.00	
Over 50,000	$11.45	
1” Meters		
First 5000	$80.78	Minimum
Next 5000	$14.55	
Next 40,000	$13.00	
Over 50,000	$11.45	
1.5” Meters		
First 10,000	$118.09	Minimum
Next 40,000	$13.00	
Over 50,000	$11.45	
2” Meters		
First 20,000	$282.52	Minimum
Next 30,000	$13.00	
Over 50,000	$11.45	
3” Meters		
First 30,000	$413.52	Minimum
Next 20,000	$13.00	
Over 50,000	$11.45	

Percentage Rate Increase – 30%

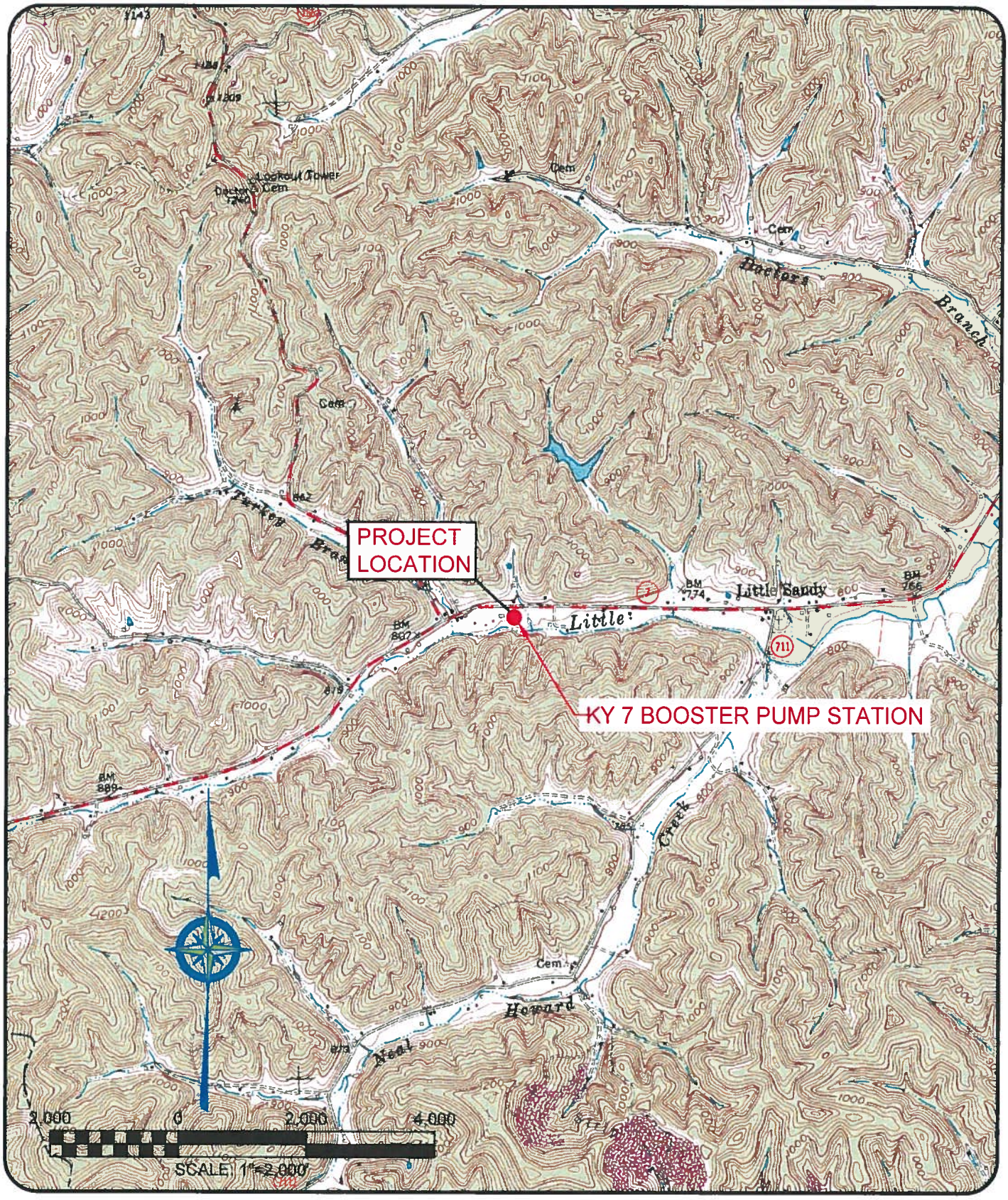
SECTION 8 CONCLUSIONS AND RECOMMENDATIONS

8.01 2019 WATER SYSTEM IMPROVEMENTS – CONTRACTS 12 AND 13

As previously noted in Section 7, Bluegrass Engineering recommends the Sandy Hook Water District proceed with the following:

- Once the additional funding is committed by Rural Development, sign the Notice of Award for both contracts as soon as possible. This will allow the contractors to order materials and secure their pricing.
- Delete the tank rehabilitation work from Contract 13 to meet the funding that was approved by the Sandy Hook Water District board.
- Proceed with the issuance of the new rates to PSC for the Convenience and Necessity.
- Upon review and approval of Rural Development, sign contracts and issue the Notice to Proceed.
- Any funding that remains in contingencies at the end of the project, should include the rehabilitation of the Wrigley Tank (if practical).

APPENDIX A – TOPOGRAPHICAL MAPS



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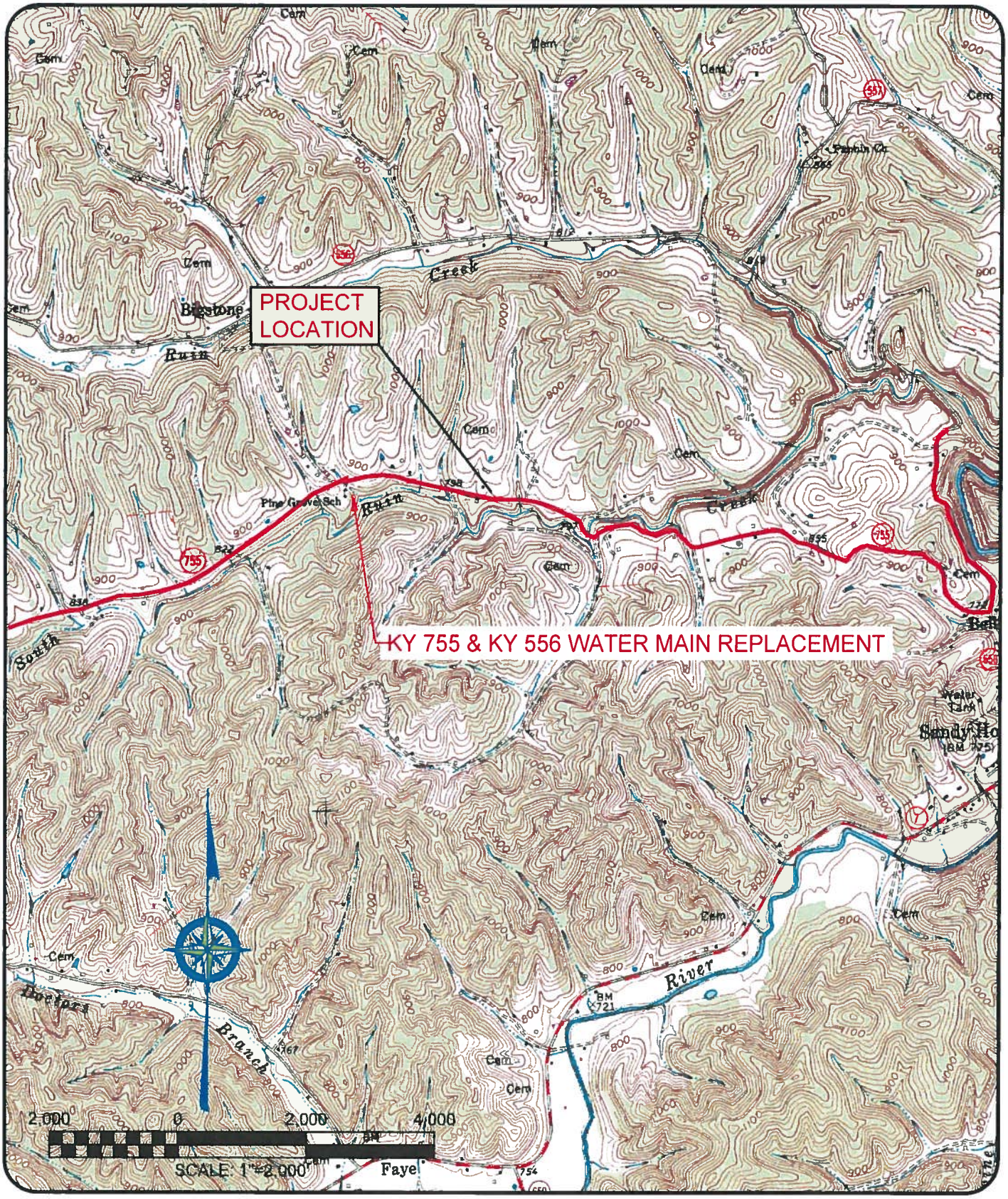
BLUEGRASS ENGINEERING PLLC
222 East Main Street, Ste. 1 • Georgetown, KY 40324

WATER SYSTEM IMPROVEMENTS
FOR
SANDY HOOK WATER DISTRICT

Project No.	19003
Date	04/2019
Dwg. No.	1



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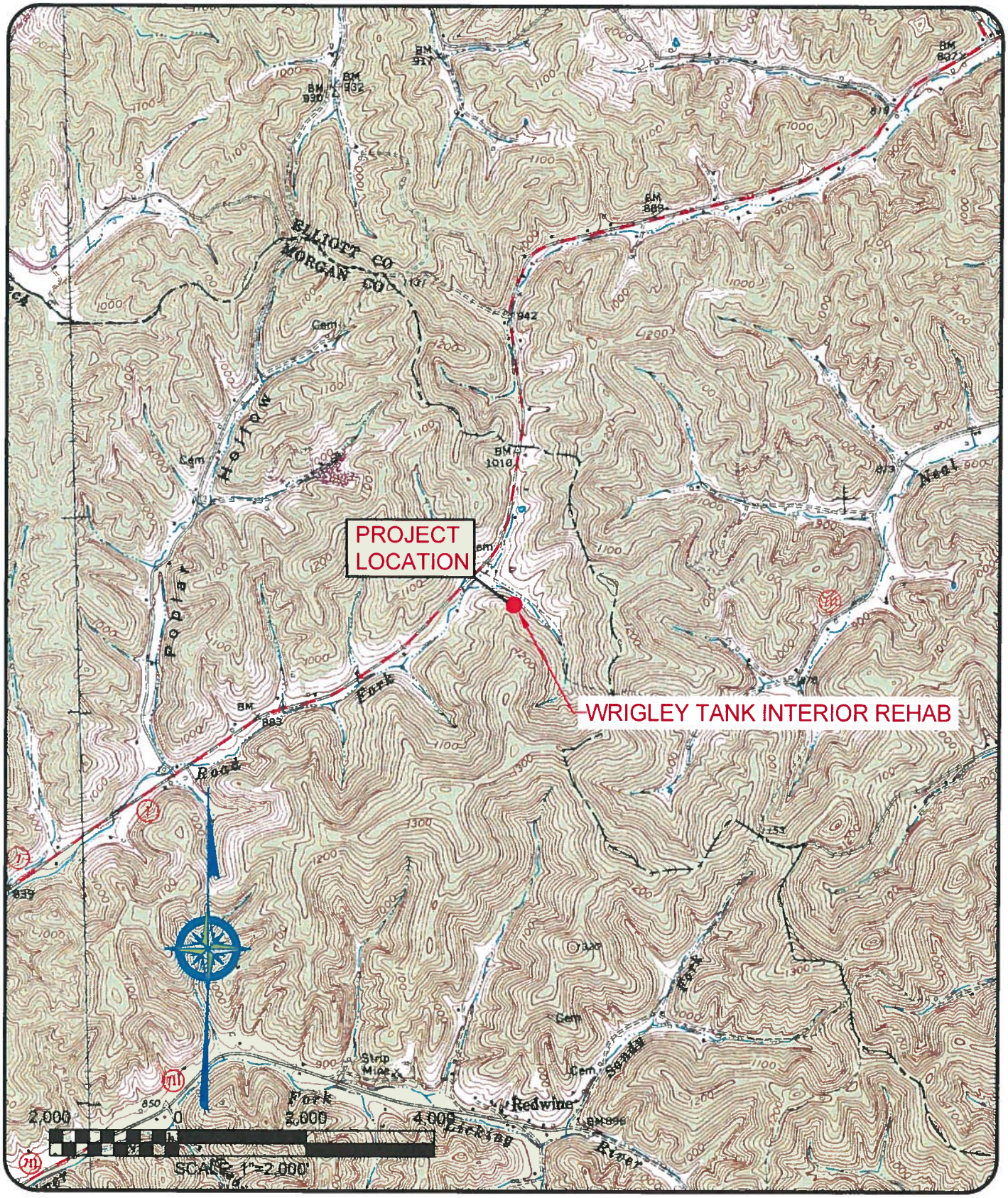
BLUEGRASS ENGINEERING PLLC
222 East Main Street, Ste. 1 • Georgetown, KY 40324

WATER SYSTEM IMPROVEMENTS
FOR
SANDY HOOK WATER DISTRICT

Project No.	19003
Date	04/2019
Dwg. No.	2



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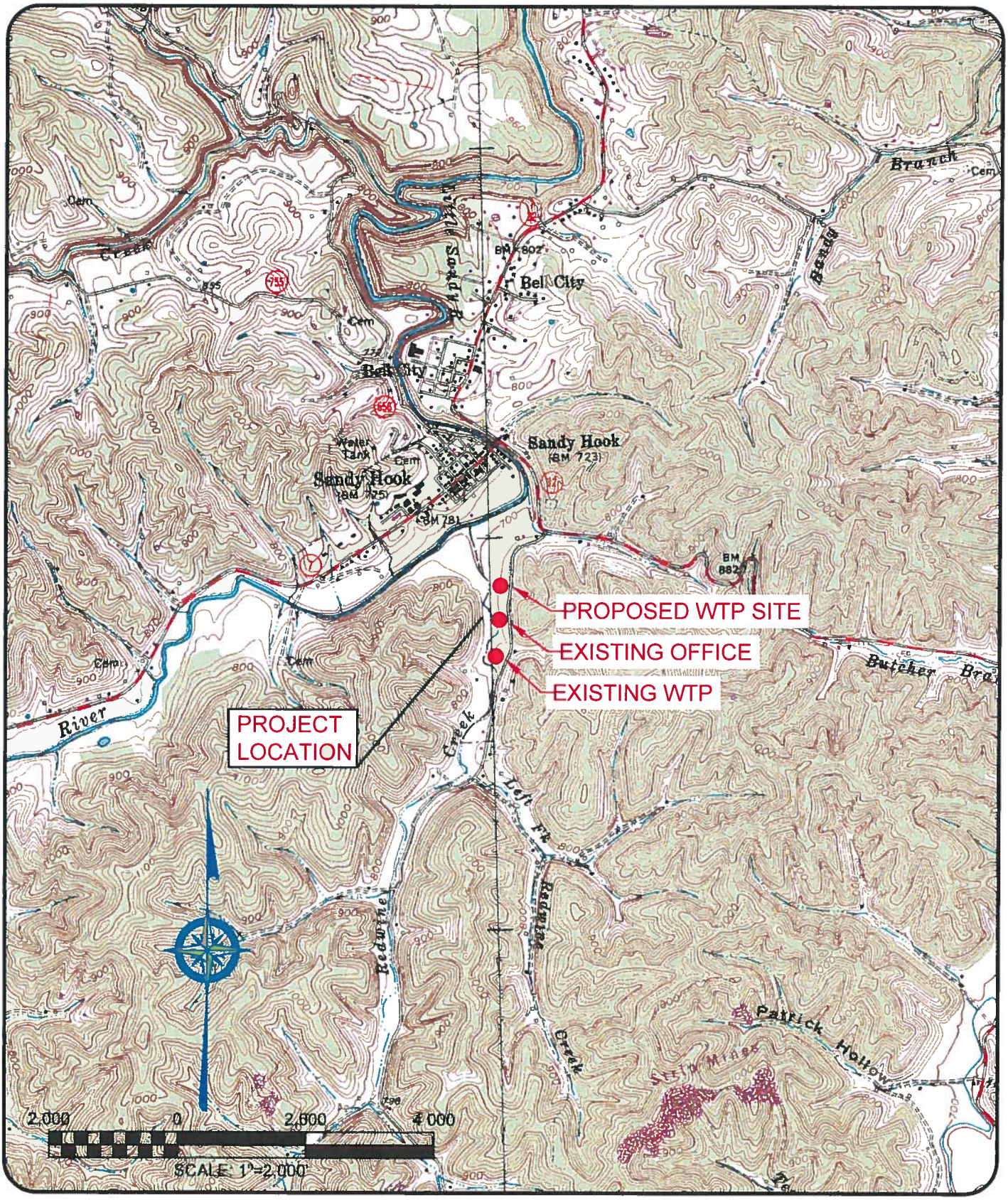
BLUEGRASS ENGINEERING PLLC
222 East Main Street, Ste. 1 • Georgetown, KY 40324

WATER SYSTEM IMPROVEMENTS
FOR
SANDY HOOK WATER DISTRICT

Project No.	19003
Date	04/2019
Dwg. No.	3



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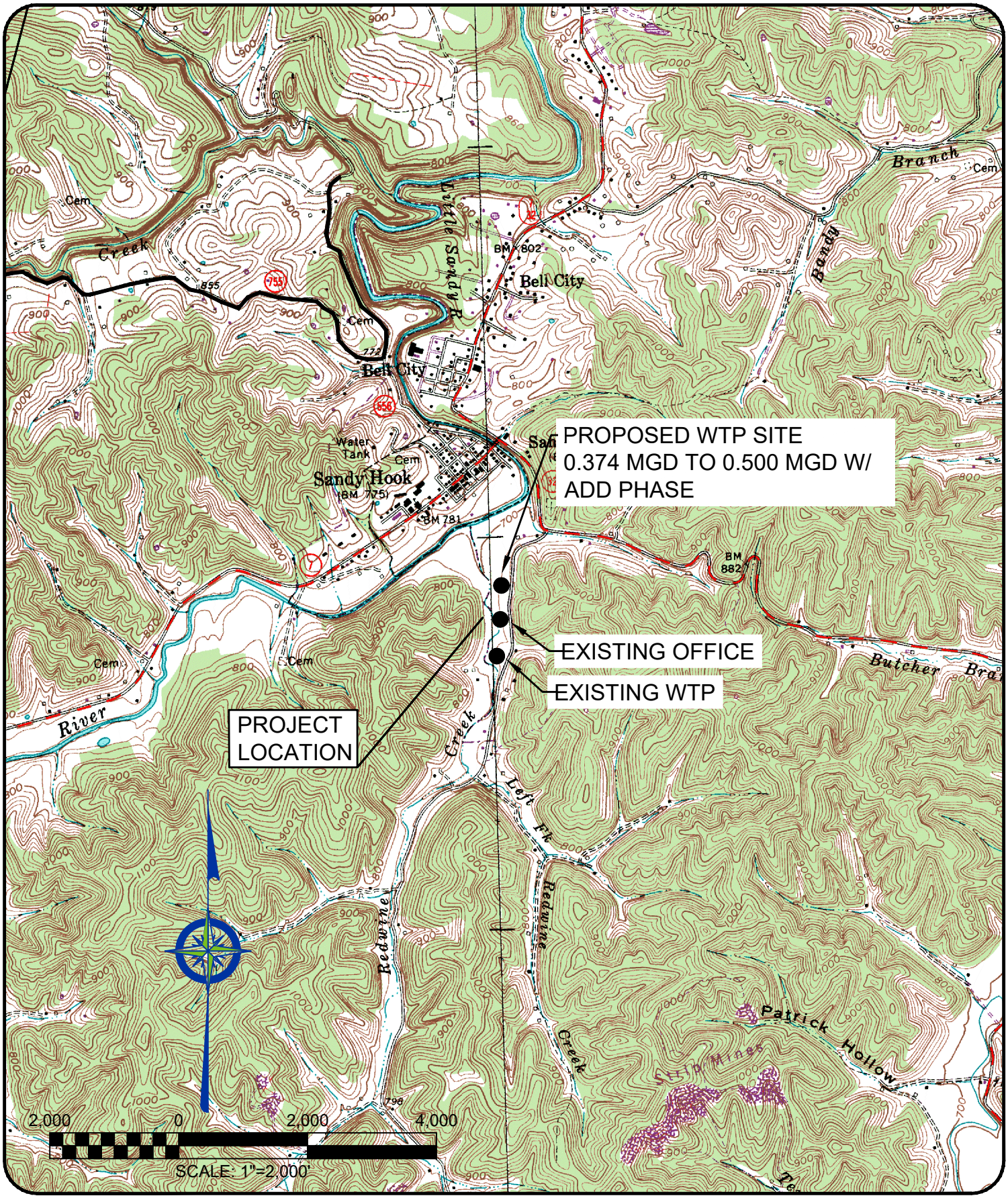
BLUEGRASS ENGINEERING PLLC
222 East Main Street, Ste. 1 • Georgetown, KY 40324

WATER SYSTEM IMPROVEMENTS
FOR
SANDY HOOK WATER DISTRICT

Project No.	19003
Date	04/2019
Dwg. No.	4



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BLUEGRASS ENGINEERING PLLC
222 East Main Street, Ste. 1 • Georgetown, KY 40324

WATER SYSTEM IMPROVEMENTS
FOR
SANDY HOOK WATER DISTRICT

Project No.	19003
Date	06/2020
Dwg. No.	Exhibit 1

THIS DRAWING HAS BEEN PREPARED AT THE SCALE INDICATED. REPRODUCTION OF THIS DRAWING MAY INTRODUCE INACCURACIES OF THE LISTED SCALE. THE GRAPHIC SCALE BAR SHALL BE USED TO DETERMINE THE ACTUAL SCALE.

WELL #3
N 38-04-16.34
W 83-07-26.44

WELL #1
N 38-04-31.02
W 83-07-29.70

WELL #8
N 38-04-51.92
W 83-07-29.00

WELL #2
N 38-04-23.28
W 83-07-33.28

WELL #6
N 38-04-16
W 83-07-46

WELL #5
N 38-04-41.51
W 83-07-30.46

WELL #4
N 38-04-36.24
W 83-07-35.33

WELL #7
N 38-03-51.23
W 83-07-49.50

Redwine

Sandy Hook

SCALE: 1"=300'

NO.	DATE	REVISIONS	BY

2019 WATER SYSTEM IMPROVEMENTS
CONTRACT 12 - WATER TREATMENT PLANT IMPROVEMENTS

GROUNDWATER WELL LOCATIONS

SANDY HOOK WATER DISTRICT
Serving Our Community
BLUEGRASS ENGINEERING PLLC
222 East Main Street, Ste. 1 • Georgetown, KY 40324

PROJECT #:	19003
DATE:	OCTOBER 2019
PROJECT MGR:	LRS
DRAWN BY:	BKL
CHECKED BY:	BKL

EXHIBIT 2

APPENDIX B – WRIGLEY TANK INSPECTION REPORT

May 2014

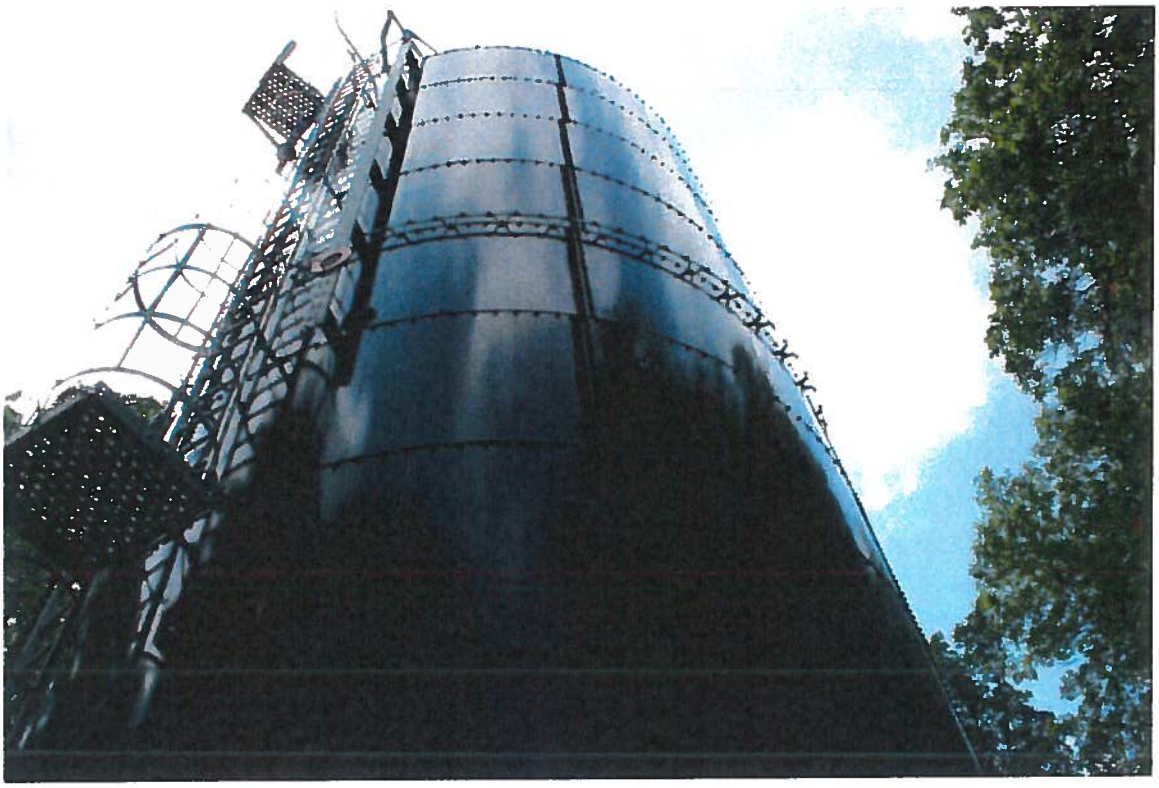
Wrigley Tank

100,000 Gal Glass Lined Tank

Sandy Hook Water District

HORIZON QC

Sidewall and Ladder Sections



Lower Sidewall, Ladder and foundation

Roof Area and Vent

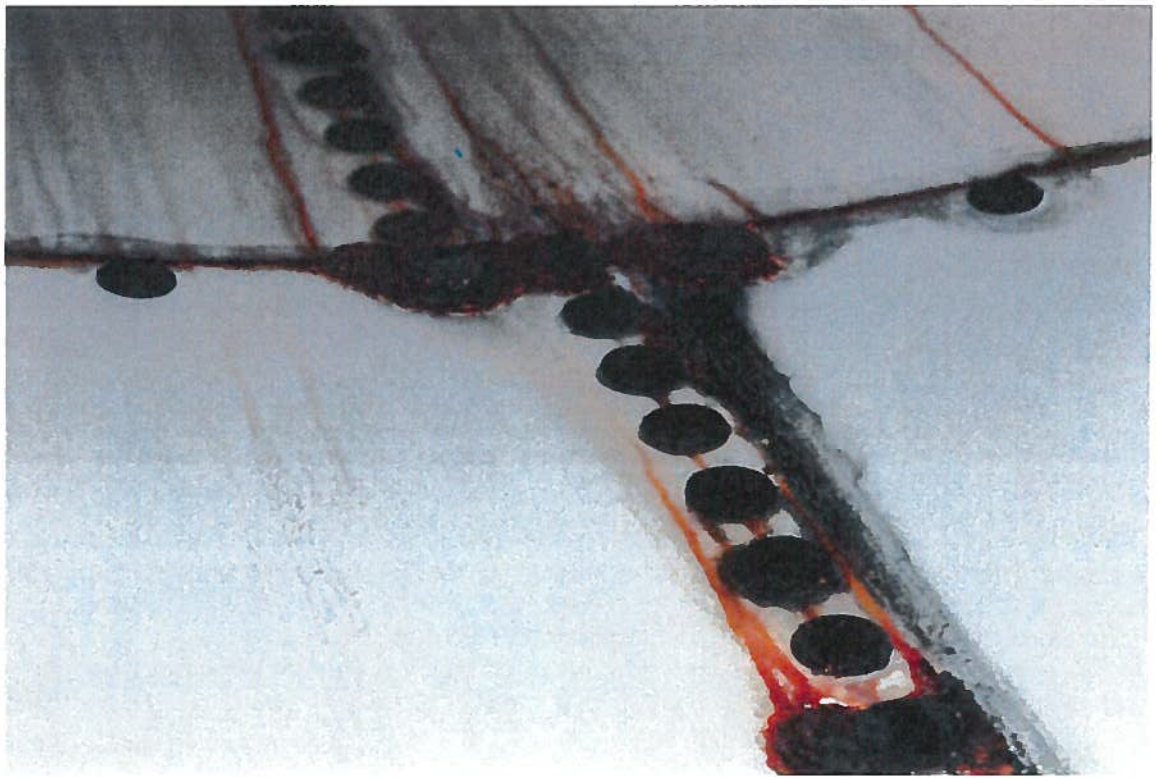
Roof Vent

Roof Manway

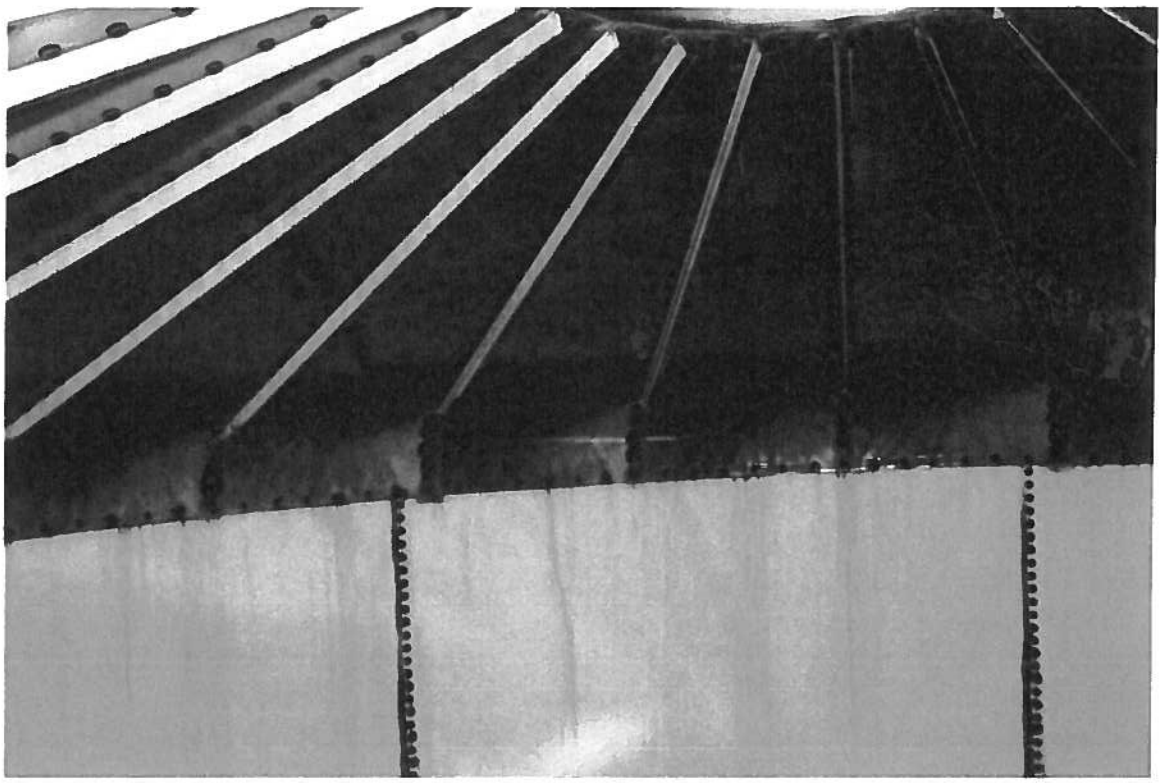
Sidewall Manway

Interior

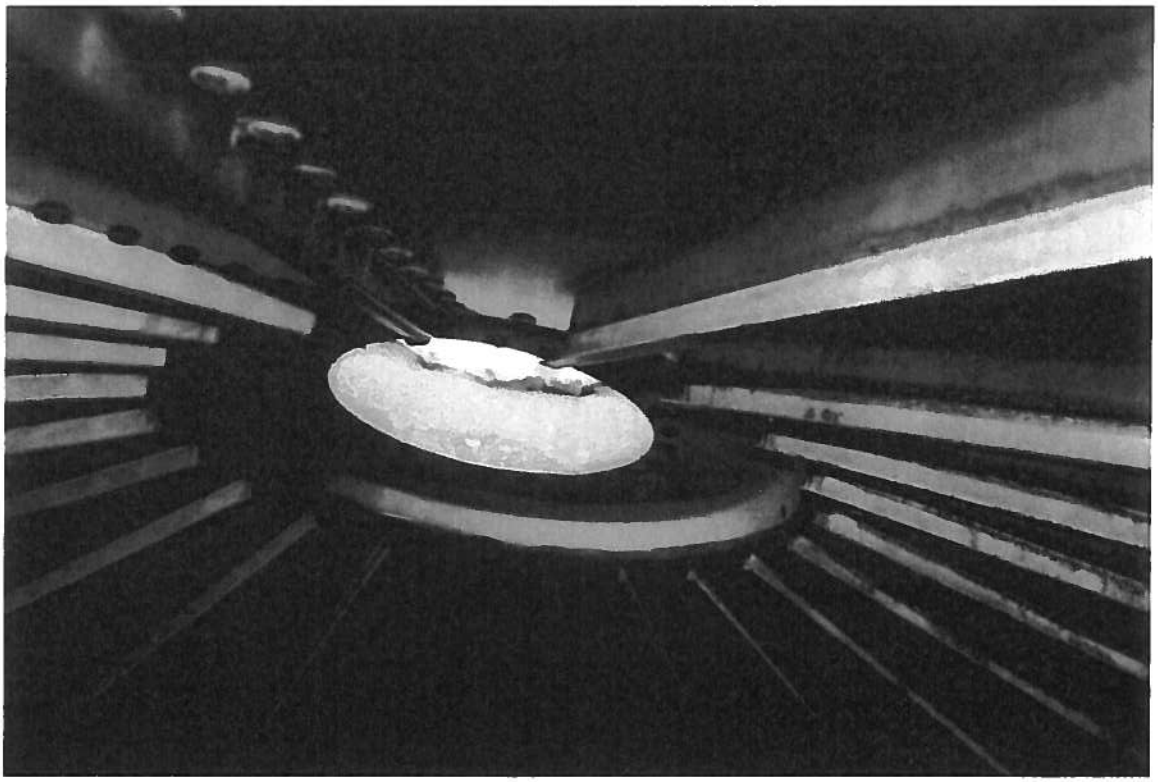
Interior Sidewall



Interior Ceiling and Sidewall



Interior Ceiling and Vent



Sandy Hook Water District
Wrigley Tank
105K Gal. Glass Lined Water Storage Tank

To:	Sandy Hook Water District Kentucky Engineering Group
Attn:	Riley Sumner – Kentucky Engineer Group
Copies:	Horizon QC File
From:	Mike Topp Horizon QC Graham Clark QC
Date:	May 2014

On May 22, 2014, Horizon QC inspected the 105,000-gallon glass lined water storage tank. The purpose of the inspection was to evaluate the exterior and interior glass lining and mastic protective coating, tank structure, sanitary conditions, and safety related issues. The tank's interior was inspected while in service.

This report summarizes Horizon QC's (Horizon's) observations and recommendations of the standpipe water storage tank (105K Glass Lined Water Storage tank). Photographs from this evaluation are provided in Attachment A.

BACKGROUND

The date of tank's construction was 2002. The manufacturer of the tank was Aquastore. Tank dimensions are 28' in diameter and 47' tall.

The tank is located in Elliot Co, Kentucky; and found several miles from the City of Sandy Hook off of KY 7. The tank site is situated off of an unimproved gravel road behind a farm. The tank site is boarded on all four sides with timber and is fenced. The site is accessible by vehicles but has limited parking.

OBSERVATIONS

Horizon QC (Horizon) visually inspected the water tank for corrosion related issues, obvious structural problems, and safety related problems. The inspection covered the interior and exterior portions of the tank. The interior of the tank was inspected while in service. The following observations were noted: Condition Scale: Excellent-Good-Fair-Poor

Interior

- Overall condition of the interior should be considered fair. Minor corrosion along bolt heads and seems.
- Interior concrete floor was not inspected.
- The perimeter of tank to base connection did not show any signs of leaks.
- No visible defects or damage to the glass found on the sidewall panels.
- Random pinhole corrosion found on the sheet edge.
- Bolt heads are in fair condition with some random corrosion areas throughout the tank.
- Interior man-way was not visible.
- Interior inlet pipe is in good condition.
- Interior outlet is in good condition with minor corrosion along edges.
- No interior ladder was found.
- Interior roof vent is in good condition. No signs of any defects or damage, (Aluminum).
- Roof/sidewall seems have random pinhole corrosion on seems and boltheads. No visible signs of cracks, leaks or damage.
- Ceiling section has random corrosion along the sidewall/ceiling connection and bolt heads.
- Indicator float is not functioning. Remains hung up near the top section.
- No biological matter was seen inside the tank.

Exterior

- Overall condition can be considered good.
- Foundation is in good condition; no deterioration of the concrete. Vegetative growth has been kept low around the foundation.
- Base/sidewall seam is in good condition. No signs of leaks or cracks in the glass.
- The sidewall glass panels are in excellent condition.
- Sidewall bolt connections have some visible corrosion resulting from mastic deterioration.
- Sidewall panel sheet edge is in good condition.
- All hazard-warning signs are still present on the tank.
- Sidewall wind stiffener is in good condition. No visible signs of damage.
- Sidewall ladder is in good condition. No visible signs of damage.
- Roof Vent is in excellent condition. Screen in place and functional.
- Roof man way hatch is in good condition.
- Roof walkway and handrail is in good condition (aluminum). No signs of any damage.
- Roof panels are in excellent condition. No corrosion or damage was visible.
- Roof panel bolts and nuts have visible corrosion.
- Overflow pipe is in good condition (aluminum) no damage was visible.
- Sidewall man ways (2 -24 inch) are in good condition, no corrosion on nuts/bolts.
- Site perimeter is clean and properly maintained with vegetation kept low.

Recommendations

Interior

At present the protective glass coated and mastic protective coating that exists throughout the interior remains in fair condition. The random corrosion spots along the seams and bolt heads are the most obvious. Corrosion in these areas will only continue without a new mastic coating being applied to a clean metal substrate. These spots appear to be shallow in pit depth, but will likely increase in depth if not corrected in the next few years.

The age and condition of the interior does ***not*** warrant immediate remediation, however some action must be taken with the next 1-3 years before corrosion damage to the steel becomes significant.

When remediation does occur, Horizon suggests the following for remediation:

1. High-pressure power wash the interior. After interior cleaning - power tool clean all corrosion spots. **(SSPC SP-3).**

    1. High-pressure power wash the interior to remove sediment and staining.
    2. **SSPC SP-3** surfaee preparation for all corrosion spots.
    3. Apply NSF approved mastic to all cleaned spots.
    4. Repair float for indicator board.
    5. Install new sacrificial anodes.

Exterior

At present the exterior glass lined system is in good condition with an adequate amount of protection to the underlying substrate.

Horizon presents the following methods of remediation for consideration:

1. All failing spots should be power tool cleaned bare **(SSPC-SP-3)** and coated with mastic coating. (Sika Flex 1a or CIM)
2. Repair Level Indicator Board

APPENDIX C – FINAL CONSTRUCTION COST ESTIMATE

BLUEGRASS ENGINEERING PLLC

Client:	Sandy Hook Water District
Project:	2019 Water System Improvements
Date:	6-23-22

Construction Costs					
Item #	Description	Quantity	Unit	Unit Cost	Item Cost
1	Contract 12 - WTP (less $810,000) plant modifications)	1	LS		$ 6,340,000
2	Contract 13 - W M Replacement (less $99,820 tank rehab)	1	LS		$ 668,609
	RD Loan -$1,180,000				
	RD Grant - 2,000,000				
	ARC Grant - $1,500,000				
	Original Total Funds Available $4,680,000				
	Additional Funds Requested				
	RD Loan - $2,640,000				
	RD Grant - $660,000				
	Additional Total Funds -$3,300,000				
	Total Funds Available - $7,980,000 (52% grant)				
Total - Construction Cost					$ 7,008,609

Non-Construction Costs	
Contingencies (5%)	$ 323,091
Interest	$ 35,000
Legal and Administrative Expenses	$ 40,000
Reimbursement to SHWD - Land, Appraisals, Archaeology, Building Permit, Filings, and other	$ 72,000
Engineering Fees - Design	$ 179,300
Engineering Fees - Construction Administration	$ 45,000
Engineering Fees - Inspection	$ 160,000
Engineering Fees - PER, Environmental, Geo-tech, Boundry Survey, ARC, and AIS Cert.	$ 117,000
Total - Non-Construction Costs	$ 971,391
Total - Project Costs	**$ 7,980,000**

APPENDIX D – BID OPENING SIGN-IN SHEET, BID SUMMARY, AND CERTIFIED BID TABULATIONS - CONTRACT #12 AND CONTRACT #13

BLUEGRASS ENGINEERING PLLC

BID OPENING SHEET

SANDY HOOK WATER DISTRICT
2019 WATER SYSTEM IMPROVEMENTS
Contract 12

BID DATE: Thursday, June 2, 2022

PACKET HOLDER	TOTAL BID AMOUNT
Building Crafts, Inc.	$ 8,567,000
Herrick Co., Inc.	$ 7,150,000
Pace Contracting, LLC	$ 7,970,000.00
Smith Contractors, Inc.	$ 8,327,000.00
The Walker Company	$

BLUEGRASS ENGINEERING PLLC

BID OPENING SHEET

SANDY HOOK WATER DISTRICT
2019 WATER SYSTEM IMPROVEMENTS
Contract 13

BID DATE: Thursday, June 2, 2022

PACKET HOLDER	TOTAL BID AMOUNT
Bear Traxx, Inc.	$
BOCA Enterprises, Inc.	$ 961,218.75
BP Pipeline	$ 943,280.00
G & W Construction Co., Inc.	$ 768,428.63
Independent Excavating, Inc.	$ 843,950.00
Keetech Horizontal Directional Drilling & Utilities	$
Roe Enterprise DBA Swartz Pipeline Contracting	$ 2,488,175.60
Smith Contractors, Inc.	$
Wolf Creek Contracting Co. LLC	$

BLUEGRASS ENGINEERING PLLC

BID TABULATION

SANDY HOOK WATER DISTRICT
2019 WATER SYSTEM IMPROVEMENTS - CONTRACT 12
SANDY HOOK, KENTUCKY
BE PROJECT NO. 19003
BID OPENING: Thursday, June 2, 2022 – 2:00 pm

BASE BID: Contract No. 12 - 2019 Water System Improvements Project				Herrick Company, Inc.		PACE Contracting		Smith Contractors, Inc.		Building Crafts, Inc.	
Item No.	Description	Quantitiy	Unit	$/unit	Bid Amount	$/unit	Bid Amount	$/unit	Bid Amount	$/unit	Bid Amount
1	New 4,600 SF Pre-Engineered Metal Building, High Service Pumps, Backwash Pumps, Site Work, Pressure Vessels, Filter Media and Appurtenances	1	LS	$ 5,938,000.00	$ 5,938,000.00	$ 6,125,299.00	$ 6,125,299.00	$ 6,927,000.00	$ 6,927,000.00	$ 6,507,000.00	$ 6,507,000.00
2	500 kW Standby Generator Set & Automatic Transfer Switch (ATS) with Integral Double Containment Fuel Tank, and all Associated Valves, Controls, and Appurtenances	1	LS	$ 120,000.00	$ 120,000.00	$ 202,952.00	$ 202,952.00	$ 200,000.00	$ 200,000.00	$ 200,000.00	$ 200,000.00
3	Two (2) - 40,000 Gallon Ground Storage Clearwell with all Associated Piping, TMS Mixing Valves, Isolation Valves, Foundation, and Appurtenances	1	LS	$ 430,000.00	$ 430,000.00	$ 512,113.00	$ 512,113.00	$ 500,000.00	$ 500,000.00	$ 560,000.00	$ 560,000.00
4	7-foot High Security Fencing and Three Security Gates (One 12-foot wide Swing Gate, One Sliding Gate w/ Electronic Operator, One 4-foot wide Man Gate) all Associated Electrical Equipment and Appurtenances	1,100 LF	LS	$ 102,000.00	$ 102,000.00	$ 119,710.00	$ 119,710.00	$ 100,000.00	$ 100,000.00	$ 110,000.00	$ 110,000.00
5	On-Site Septic System w/ Lateral Beds and 2,000 Gallon Septic Tank with all Associated Piping, Distribution Box, Lateral Lines, Effluent Pumps w/ Controls and Appurtenances	1	LS	$ 25,000.00	$ 25,000.00	$ 38,000.00	$ 38,000.00	$ 10,000.00	$ 10,000.00	$ 125,000.00	$ 125,000.00
6	Stream Restoration with Gabion Wire Mesh Baskets, Crushed Stone, Filter Fabric, and all associated earthwork, erosion and sedimentation control measures, and Appurtenances	250 LF	LS	$ 125,000.00	$ 125,000.00	$ 221,897.00	$ 221,897.00	$ 150,000.00	$ 150,000.00	$ 125,000.00	$ 125,000.00
7	Two (2) – 47' by 28' Concrete Backwash Lagoons with Pre-Engineered Metal Canopy and Appurtenances	1	LS	$ 110,000.00	$ 110,000.00	$ 420,442.00	$ 420,442.00	$ 140,000.00	$ 140,000.00	$ 600,000.00	$ 600,000.00
8	SCADA computer system including the design, documentation, assembly, test, installation, and Appurtenances	1	LS	$ 300,000.00	$ 300,000.00	$ 329,587.00	$ 329,587.00	$ 300,000.00	$ 300,000.00	$ 340,000.00	$ 340,000.00
TOTAL BASE BID AMOUNT – (ITEMS No. 1 – 8):					$ 7,150,000.00		$7,970,000.00		$8,327,000.00		$8,567,000.00

*Numbers in Red indicate errors in Contractor's Bid Amount Calculation

The above is a true and complete tabulation of the bids received on Thursday, June 2, 2022, 2 00 pm
I certify that this is true and accurate tabulation of the bids

Bluegrass Engineering, PLLC

By _____
Bryan K. Lovan
Sr. Project Engineer

BLUEGRASS ENGINEERING PLLC

BID TABULATION

SANDY HOOK WATER DISTRICT
2019 - WATER SYSTEM IMPROVEMENTS - CONTRACT 13
SANDY HOOK, KENTUCKY
BE PROJECT NO. 19003
BID OPENING: Thursday, June 2, 2022 – 2:00 pm

BASE BID: Contract No. 13 - 2019 Water System Improvements Project				G & W Construction Co., Inc.		Independent Excavating, Inc.		BP Pipeline, Inc.		BOCA Enterprises, Inc.		Roe Enterprises DBA Swartz	
Item No.	Description	Quantitiy	Unit	$/unit	Bid Amount	$/unit	Bid Amount	$/unit	Bid Amount	$/unit	Bid Amount	$/unit	Bid Amount
1	2" PVC Class 250 Water Main,	425	LF	$ 13.08	$ 5,559.00	$ 10.00	$ 4,250.00	$ 20.00	$ 8,500.00	$ 17.75	$ 7,543.75	$ 62.50	$ 26,562.50
2	4" PVC Class 250 Water Main	14,800	LF	$ 17.23	$ 255,004.00	$ 18.00	$ 266,400.00	$ 24.60	$ 364,080.00	$ 22.00	$ 325,600.00	$ 79.90	$ 1,182,520.00
3	6" PVC Class 250 Water Main	4,000	LF	$ 27.02	$ 108,080.00	$ 26.00	$ 104,000.00	$ 32.00	$ 128,000.00	$ 32.00	$ 128,000.00	$ 84.20	$ 336,800.00
4	2" Gate Valve and Box	2	EA	$ 1,180.95	$ 2,361.90	$ 1,200.00	$ 2,400.00	$ 800.00	$ 1,600.00	$ 1,300.00	$ 2,600.00	$ 820.25	$ 1,640.50
5	4" Gate Valve and Box	6	EA	$ 1,518.10	$ 9,108.60	$ 1,500.00	$ 9,000.00	$ 1,500.00	$ 9,000.00	$ 1,800.00	$ 10,800.00	$ 2,210.82	$ 13,264.92
6	6" Gate Valve and Box	1	EA	$ 1,894.23	$ 1,894.23	$ 1,800.00	$ 1,800.00	$ 2,500.00	$ 2,500.00	$ 2,000.00	$ 2,000.00	$ 2,680.50	$ 2,680.50
7	Tapping Sleeve and Valve	1	EA	$ 4,518.80	$ 4,518.80	$ 3,500.00	$ 3,500.00	$ 6,000.00	$ 6,000.00	$ 3,850.00	$ 3,850.00	$ 8,238.26	$ 8,238.26
8	Air Release Valve	2	EA	$ 1,821.97	$ 3,643.94	$ 1,600.00	$ 3,200.00	$ 1,800.00	$ 3,600.00	$ 1,150.00	$ 2,300.00	$ 1,935.36	$ 3,870.72
9	Reconnect Existing Meter to New Water Main	28	EA	$ 901.69	$ 25,247.32	$ 500.00	$ 14,000.00	$ 700.00	$ 19,600.00	$ 750.00	$ 21,000.00	$ 1,645.45	$ 46,072.60
10	4" DR 9 HDPE Directional Drill Creek Crossing	1,040	LF	$ 78.94	$ 82,097.60	$ 100.00	$ 104,000.00	$ 80.00	$ 83,200.00	$ 150.00	$ 156,000.00	$ 345.00	$ 358,800.00
11	12" DR 11 HDPE Directional Drill Road Crossing	200	LF	$ 151.95	$ 30,390.00	$ 275.00	$ 55,000.00	$ 210.00	$ 42,000.00	$ 275.00	$ 55,000.00	$ 385.00	$ 77,000.00
12	10" Steel Casing Bored and Jacked	60	LF	$ 179.36	$ 10,761.60	$ 250.00	$ 15,000.00	$ 250.00	$ 15,000.00	$ 150.00	$ 9,000.00	$ 245.00	$ 14,700.00
13	New Meter and Reconnect to Exist. Service Line	9	EA	$ 1,912.71	$ 17,214.39	$ 1,700.00	$ 15,300.00	$ 1,600.00	$ 14,400.00	$ 3,200.00	$ 28,800.00	$ 1,645.45	$ 14,809.05
14	Flushing Hydrant	1	EA	$ 8,150.16	$ 8,150.16	$ 7,500.00	$ 7,500.00	$ 7,000.00	$ 7,000.00	$ 7,000.00	$ 7,000.00	$ 8,500.00	$ 8,500.00
15	Blow Off Assembly	1	EA	$ 4,111.66	$ 4,111.66	$ 3,000.00	$ 3,000.00	$ 2,800.00	$ 2,800.00	$ 4,400.00	$ 4,400.00	$ 3,500.00	$ 3,500.00
16	Driveway/County RD Bore w/PVC Casing	65	LF	$ 72.42	$ 4,707.30	$ 150.00	$ 9,750.00	$ 200.00	$ 13,000.00	$ 135.00	$ 8,775.00	$ 225.00	$ 14,625.00
17	1" Class 250 PE Service Line	400	LF	$ 8.47	$ 3,388.00	$ 5.50	$ 2,200.00	$ 12.00	$ 4,800.00	$ 12.00	$ 4,800.00	$ 68.00	$ 27,200.00
18	Reconnect Exist. Water Main to New Water Main	3	EA	$ 4,732.46	$ 14,197.38	$ 500.00	$ 1,500.00	$ 6,000.00	$ 18,000.00	$ 3,500.00	$ 10,500.00	$ 960.35	$ 2,881.05
19	Cut and Plug Existing Water Main	3	EA	$ 1,334.45	$ 4,003.35	$ 350.00	$ 1,050.00	$ 1,800.00	$ 5,400.00	$ 750.00	$ 2,250.00	$ 1,800.00	$ 5,400.00
20	Install New Pumps and VFD's in KY 7 BPS	1	LS	$ 46,930.00	$ 46,930.00	$ 95,000.00	$ 95,000.00	$ 58,000.00	$ 58,000.00	$ 45,000.00	$ 45,000.00	$ 100,000.00	$ 100,000.00
21	Reseal Interior of Wrigley Glass Lined Tank	1	LS	$ 99,820.00	$ 99,820.00	$ 100,000.00	$ 100,000.00	$ 106,000.00	$ 106,000.00	$ 96,000.00	$ 96,000.00	$ 200,000.00	$ 200,000.00
22	PVC Casing Open Cut	30	LF	$ 55.68	$ 1,670.40	$ 70.00	$ 2,100.00	$ 110.00	$ 3,300.00	$ 200.00	$ 6,000.00	$ 145.35	$ 4,360.50
23	6" DR 9 HDPE Directional Drill Creek Crossing	50	LF	$ 161.38	$ 8,069.00	$ 130.00	$ 6,500.00	$ 200.00	$ 10,000.00	$ 130.00	$ 6,500.00	$ 345.00	$ 17,250.00
24	Ground Penetrating Radar Utility Locator	1	EA	$ 17,500.00	$ 17,500.00	$ 17,500.00	$ 17,500.00	$ 17,500.00	$ 17,500.00	$ 17,500.00	$ 17,500.00	$ 17,500.00	$ 17,500.00
TOTAL BASE BID AMOUNT – (ITEMS No. 1 – 29):					$768,428.63		$843,950.00		$943,280.00		$961,218.75		$2,488,175.60

*Numbers in Red indicate errors in Contractor's Bid Amount Calculation

The above is a true and complete tabulation of the bids received on Thursday, June 2, 2022, 2:00 pm
I certify that this is true and accurate tabulation of the bids.

Bluegrass Engineering, PLLC

By _____
Riley Sumner
Project Manager

APPENDIX E – BID NEGOTIATIONS AND COMPETITIVE NEGOTIATION REVIEW SUMMARY

June 13, 2022

-- VIA FACSIMLE / ELECTRONIC MAIL --

Mr. Cody M. Lokits, President
Herrick Company, Inc.
2176 Waddy Road
Lawrenceburg, KY 40342

Re: 2019 Water System Improvements
Sandy Hook Water District
Contract 12 – New Water Treatment Plant Improvements
Elliott County, Kentucky
BE Project # 19003

Dear Mr. Lokits:

Bluegrass Engineering, PLLC, on behalf of the Sandy Hook Water District (District) would like to thank you for submitting a bid for the above referenced project. All of the bids submitted pursuant to competitive sealed bidding under KRS Chapter 45A resulted in bid prices in excess of the funds available for Contract 12 – New Water Treatment Plant Improvements.

The District is seeking additional funds for the project. However, the District anticipates that the additional funds available from other sources may still not permit an award to the low evaluated responsive, responsible, best and qualified bidder for Contract 12 – New Water Treatment Plant Improvements project.

In the best interest of the District to prevent further delay in the project and pursuant to KRS 45A.090 – Negotiation after competitive sealed bidding when all bids exceed available funds, the District will conduct competitive negotiations pursuant to KRS 45A.085 - Competitive negotiation with the three (3) low evaluated responsive, responsible, best and qualified bidders determined in writing by the bids submitted, based on criteria contained in the bid invitation. Such competitive negotiations will be conducted under the following restrictions:

1. All discussions pertaining to the revision of the specifications or quantities are held with all potential offerors and shall be afforded an opportunity to take part in such discussions.

2. The award will be based on the low evaluated, responsive, responsible, qualified offeror and based on the best evaluated offer.

Due to the current situation regarding the supply chain crisis, the current availability of materials and equipment for the project, and to allow for an expeditious response and not permit unnecessary delays in providing the revised offer, the District is allowing the Contractor to make

any viable offer for potential cost savings on the project to reduce the overall cost to within available funds. All suggested or recommended options resulting in a potential cost savings will be evaluated and considered on their own merit in determining the best evaluated offer. The attached document will be utilized to evaluate each bidder's offer for the overall potential cost savings on the project.

We are requesting that you please respond in writing to Bluegrass Engineering, PLLC no later than Wednesday, June 15, 2022 by 2:00 p.m. (EDT) if you are interested in entering into the negotiations. If no response is received by the deadline stated, then it will be presumed that your company declines to participate in the negotiations.

If you are willing to participate in the negotiations, then all potential cost savings items identified along with the associated savings amount and brief description of the item shall be submitted to Bluegrass Engineering, PLLC no later than Wednesday, June 22, 2022 by 2:00 p.m. (EDT). If no response is received by the deadline stated, then it will be presumed that your company has withdrawn from the negotiations.

We again thank you for submitting a bid on the project and we wish you luck on future projects and hope that you will continue to submit bids to the Sandy Hook Water District in the future.

If you have any questions or need any additional information, please contact me.

Respectfully submitted,

BLUEGRASS ENGINEERING, PLLC

Bryan K. Lovan, PE, PLS
Sr. Project Manager/Engineer

Pc: Sandy Hook Water District
File

Respond via Mail to:

Bryan K. Lovan, PE, PLS
Bluegrass Engineering, PLLC
P.O. Box 1657
Georgetown, KY 40324

Respond via E-mail to:

Bryan K. Lovan, PE, PLS
e-mail: blovan@bluegrassengineering.net

Respond via Fax to:

Bryan K. Lovan, PE, PLS
Fax: (502) 642-5180

June 13, 2022

-- VIA FACSIMLE / ELECTRONIC MAIL --

Mr. Kerry Smith, President
Smith Contractors, Inc.
P.O. Box 480
Lawrenceburg, KY 40342

Re: 2019 Water System Improvements
Sandy Hook Water District
Contract 12 – New Water Treatment Plant Improvements
Elliott County, Kentucky
BE Project # 19003

Dear Mr. Smith:

Bluegrass Engineering, PLLC, on behalf of the Sandy Hook Water District (District) would like to thank you for submitting a bid for the above referenced project. All of the bids submitted pursuant to competitive sealed bidding under KRS Chapter 45A resulted in bid prices in excess of the funds available for Contract 12 – New Water Treatment Plant Improvements.

The District is seeking additional funds for the project. However, the District anticipates that the additional funds available from other sources may still not permit an award to the low evaluated responsive, responsible, best and qualified bidder for Contract 12 – New Water Treatment Plant Improvements project.

In the best interest of the District to prevent further delay in the project and pursuant to KRS 45A.090 – Negotiation after competitive sealed bidding when all bids exceed available funds, the District will conduct competitive negotiations pursuant to KRS 45A.085 - Competitive negotiation with the three (3) low evaluated responsive, responsible, best and qualified bidders determined in writing by the bids submitted, based on criteria contained in the bid invitation. Such competitive negotiations will be conducted under the following restrictions:

1. All discussions pertaining to the revision of the specifications or quantities are held with all potential offerors and shall be afforded an opportunity to take part in such discussions.

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Due to the current situation regarding the supply chain crisis, the current availability of materials and equipment for the project, and to allow for an expeditious response and not permit unnecessary delays in providing the revised offer, the District is allowing the Contractor to make

any viable offer for potential cost savings on the project to reduce the overall cost to within available funds. All suggested or recommended options resulting in a potential cost savings will be evaluated and considered on their own merit in determining the best evaluated offer. The attached document will be utilized to evaluate each bidder's offer for the overall potential cost savings on the project.

We are requesting that you please respond in writing to Bluegrass Engineering, PLLC no later than Wednesday, June 15, 2022 by 2:00 p.m. (EDT) if you are interested in entering into the negotiations. If no response is received by the deadline stated, then it will be presumed that your company declines to participate in the negotiations.

If you are willing to participate in the negotiations, then all potential cost savings items identified along with the associated savings amount and brief description of the item shall be submitted to Bluegrass Engineering, PLLC no later than Wednesday, June 22, 2022 by 2:00 p.m. (EDT). If no response is received by the deadline stated, then it will be presumed that your company has withdrawn from the negotiations.

We again thank you for submitting a bid on the project and we wish you luck on future projects and hope that you will continue to submit bids to the Sandy Hook Water District in the future.

If you have any questions or need any additional information, please contact me.

Respectfully submitted,

BLUEGRASS ENGINEERING, PLLC

Bryan K. Lovan, PE, PLS
Sr. Project Manager/Engineer

Pc: Sandy Hook Water District
File

Respond via Mail to:

Bryan K. Lovan, PE, PLS
Bluegrass Engineering, PLLC
P.O. Box 1657
Georgetown, KY 40324

Respond via E-mail to:

Bryan K. Lovan, PE, PLS
e-mail: blovan@bluegrassengineering.net

Respond via Fax to:

Bryan K. Lovan, PE, PLS
Fax: (502) 642-5180

June 13, 2022

-- VIA FACSIMLE / ELECTRONIC MAIL --

Mr. Tom Wood, Administrative Member
Pace Contracting, LLC
15415 Shelbyville Road
Louisville, KY 40245

Re: 2019 Water System Improvements
Sandy Hook Water District
Contract 12 – New Water Treatment Plant Improvements
Elliott County, Kentucky
BE Project # 19003

Dear Mr. Wood:

Bluegrass Engineering, PLLC, on behalf of the Sandy Hook Water District (District) would like to thank you for submitting a bid for the above referenced project. All of the bids submitted pursuant to competitive sealed bidding under KRS Chapter 45A resulted in bid prices in excess of the funds available for Contract 12 – New Water Treatment Plant Improvements.

The District is seeking additional funds for the project. However, the District anticipates that the additional funds available from other sources may still not permit an award to the low evaluated responsive, responsible, best and qualified bidder for Contract 12 – New Water Treatment Plant Improvements project.

In the best interest of the District to prevent further delay in the project and pursuant to KRS 45A.090 – Negotiation after competitive sealed bidding when all bids exceed available funds, the District will conduct competitive negotiations pursuant to KRS 45A.085 - Competitive negotiation with the three (3) low evaluated responsive, responsible, best and qualified bidders determined in writing by the bids submitted, based on criteria contained in the bid invitation. Such competitive negotiations will be conducted under the following restrictions:

1. All discussions pertaining to the revision of the specifications or quantities are held with all potential offerors and shall be afforded an opportunity to take part in such discussions.

2. The award will be based on the low evaluated, responsive, responsible, qualified offeror and based on the best evaluated offer.

Due to the current situation regarding the supply chain crisis, the current availability of materials and equipment for the project, and to allow for an expeditious response and not permit unnecessary delays in providing the revised offer, the District is allowing the Contractor to make

any viable offer for potential cost savings on the project to reduce the overall cost to within available funds. All suggested or recommended options resulting in a potential cost savings will be evaluated and considered on their own merit in determining the best evaluated offer. The attached document will be utilized to evaluate each bidder's offer for the overall potential cost savings on the project.

We are requesting that you please respond in writing to Bluegrass Engineering, PLLC no later than Wednesday, June 15, 2022 by 2:00 p.m. (EDT) if you are interested in entering into the negotiations. If no response is received by the deadline stated, then it will be presumed that your company declines to participate in the negotiations.

If you are willing to participate in the negotiations, then all potential cost savings items identified along with the associated savings amount and brief description of the item shall be submitted to Bluegrass Engineering, PLLC no later than Wednesday, June 22, 2022 by 2:00 p.m. (EDT). If no response is received by the deadline stated, then it will be presumed that your company has withdrawn from the negotiations.

We again thank you for submitting a bid on the project and we wish you luck on future projects and hope that you will continue to submit bids to the Sandy Hook Water District in the future.

If you have any questions or need any additional information, please contact me.

Respectfully submitted,

BLUEGRASS ENGINEERING, PLLC

Bryan K. Lovan, PE, PLS
Sr. Project Manager/Engineer

Pc: Sandy Hook Water District
File

Respond via Mail to:

Bryan K. Lovan, PE, PLS
Bluegrass Engineering, PLLC
P.O. Box 1657
Georgetown, KY 40324

Respond via E-mail to:

Bryan K. Lovan, PE, PLS
e-mail: blovan@bluegrassengineering.net

Respond via Fax to:

Bryan K. Lovan, PE, PLS
Fax: (502) 642-5180

BLUEGRASS ENGINEERING PLLC

BID OPENING SHEET

SANDY HOOK WATER DISTRICT
2019 WATER SYSTEM IMPROVEMENTS
Contract 12

BID DATE: **Thursday, June 2, 2022**

PACKET HOLDER	TOTAL BID AMOUNT
Building Crafts, Inc.	$ 8,567,000.00
Herrick Co., Inc.	$ 7,150,000.00
Pace Contracting, LLC	$ 7,970,000.00
Smith Contractors, Inc.	$ 8,327,000.00
The Walker Company	$

COMPETITIVE NEGOTIATION REVIEW SUMMARY

OWNER: **SANDY HOOK WATER DISTRICT, SANDY HOOK, KY**

PROJECT NAME: **Contract 12 – New Water Treatment Plant Improvements**

EVALUATION CRITERIA	RANKING OF BIDDERS		
	A	B	C
1) Original Bid Amount including all identified potential cost saving items or changes. a.) Lowest Total Dollar Amount — 25 points b.) Second Lowest Total Dollar Amount — 10 points c.) Highest Total Dollar Amount — 5 points			
2) Amount of redesign effort required to implement the recommended cost savings item. a.) Minimal to Zero redesign effort — 15 points b.) Moderate redesign effort — 10 points c.) Significant redesign effort — 0 points			
3) Viability of the offered potential cost savings to be implemented and accepted by the regulatory agencies a.) Viable — 15 points b.) Somewhat Viable — 10 points c.) Not Viable — 0 points			
4) Potential offer's ability to utilize the originally specified material or equipment (M&E) a.) Use of Original Base Bid M&E — 10 points b.) Use of Approved M&E not in Original Bid — 5 points c.) Use of Non-Specified M&E — 0 points			
5) Number of Potential Cost Savings Items offered to provide the greatest savings a.) Minimal (< $25,000) — 5 points b.) Moderate ($25K to $75K) — 15 points c.) Significant (>$75K) — 25 points			
TOTAL			
RANKING OF BIDDERS (1,2,3)			

Note:
1. Items 2) through 5) shall be used to evaluate each individual cost savings item on their own merit and assigned the appropriate points.
2. Each potential cost savings item shall identify the M&E to be used in the savings, if different from the original bid in order to evaluate for Item 4).

CERTIFICATION: I hereby certify that on behalf of Sandy Hook Water District, Bluegrass Engineering, PLLC reviewed and ranked all bidders who responded and provided offers that were deemed qualified based on information available in the Contract Documents. Bluegrass Engineering, PLLC evaluated and ranked all bidders based on the ranking criteria listed above and no other criteria were used.

_____ _____

(PRINT OR TYPE NAME) (DATE)

_____

(SIGNATURE)

HCI
Herrick Company, Inc.

2176 Waddy Rd, HWY 395
Lawrenceburg, KY 40342

Phone: 502-839-3484
Fax: 502-839-0939
E-Mail: codyhci@dcr.net

June 22, 2022

Mr. Bryan Lovan, PE, PLS
Bluegrass Engineering, PLLC
222 East Main Street, Suite 1
Georgetown, KY 40324
(c) 859-351-1714
blovan@bluegrassengineering.net

RE: Sandy Hook Water District
2019 Water System Improvements
Contract 12 – New WTP Improvements
Elliott County, Kentucky
Competitive Negotiation Cost Savings

Dear Mr. Lovan,

HCI appreciates the opportunity to enter competitive negotiations for the Subject project and to offer potential cost savings to reduce the overall costs of the project. As directed within your letter dated June 13, 2022, HCI has tabulated what we consider to be viable cost savings opportunities for the project, and we have presented them in the table below along with the approximate savings amount and a brief description of the item:

No.	Value Engineering Item Description	SAVINGS OPPORTUNITY			ORIG M&E?
1	Downsize WTP Building to 14' Eave Height	$ 10,000.00			YES
2	Delete Metal Building at Backwash Lagoon	$ 135,000.00			YES
3	Use Local PEMB Erector & Alternate Building Supplier	$ 100,000.00			YES
4	Modify/Reduce/Deleter Perim. Fence and Delete Motorized Gate Operator	$ 40,000.00	to	$ 100,000.00	YES
5	Modify/Delete Stream Restoration Work & Gabions; Rip Rap Bank Stab.	$ 45,000.00	to	$ 110,000.00	YES
6	Filter Equipment VE's from Tonka:				
	Provide Bray Valves/Actuators in lieu of specified	$ 81,000.00			NO
	Provide Blowers by Excelsior direct	$ 18,000.00			YES
7	Paintings & Coatings Reduced/Modified Scope	$ 10,000.00			YES
8	Sample Sink to Standard Compartment Sinks & WL from Copper to PVC	$ 10,000.00			NO
9	Epoxy Bonded Steel or CIP CW in lieu of Glass Lined Tank	$ 50,000.00	to	$ 60,000.00	NO
10	Modify/Delete Overhead Crane to Trolley/Hoist System	$ 10,000.00	to	$ 40,000.00	NO
11	Reduce HS Pump & Booster Pump Redundancy by 1 pump	$ 10,000.00			YES
12	Move Lagoon near WTP (Fence modifications in Item 4 above, dwg attached)	$ 8,000.00			YES
13	Delete Studs & Drywall in Office - Paint CMU instead	$ 6,000.00			YES
14	Delete Vinyl Tile & Base in Bath & Office - Concrete Floors instead	$ 6,000.00			NO
15	Delete Volumetric Feeders & Hoppers	$ 70,000.00			YES
16	Relocate pad mount utility transformer closer to MCC/Electrical room	$ 7,000.00			YES
17	Relocate generator set closer to MCC/Electrical room	$ 2,000.00			YES
18	Breakers at lights & receptacles use 20 amp, 1 pole breakers and #12 awg	$ 5,000.00			YES
19	Replace Galv. Rigid Steel Conduit w/ Alum. Conduit	$ 10,000.00			NO
20	Delete SCADA Factory Testing (CITCO)	$ 12,000.00			YES
		$ 645,000.00	**to**	**$ 810,000.00**	

As it relates to the Evaluation Criteria provided within your letter, HCI feels that each of our cost savings opportunities will require minimal to zero redesign effort, will be viable to all regulatory agencies, uses original base bid material and equipment (with some reasonable exceptions), and, together, offer a significant savings to the project.

Should you have any questions or need additional information regarding any of the proposed savings opportunities presented above, please do not hesitate to contact me.

Sincerely,

Cody M. Lokits, PE
Cell: 859-699-2961

Attachment

cc: Doug Herrick – HCI
Ryan Gabbard – HCI

B:\PROJECTS\Sandy Hook Water\19003 - 2019 Water System Improvments\DWG\Contract 12 - WTP\19003-12-C-1-03.dwg BE 4/26/22

C-1-03

BID SET

STATE OF KENTUCKY — BRIAN K. LOAN — 13540 — LICENSED PROFESSIONAL ENGINEER
4-29-22

PROJECT #:	19003
DATE:	APRIL 2022
PROJECT MGR:	LRS
DRAWN BY:	BKL
CHECKED BY:	BKL

BLUEGRASS ENGINEERING PLLC
222 East Main Street, Ste. 1 • Georgetown, KY 40324

SANDY HOOK WATER DISTRICT
Serving Our Community

2019 WATER SYSTEM IMPROVEMENTS
CONTRACT 12 - WATER TREATMENT PLANT IMPROVEMENTS

SITE GRADING & DRAINAGE PLAN

NO.	DATE	REVISIONS	BY

15415 Shelbyville Road
Louisville, Kentucky 40245
Phone: 502.815.4142
Fax: 502.583.6375

June 22, 2022

Bryan K. Lovan, PE, PLS
Bluegrass Engineering, PLLC
22 East Main St., Suite 1
Georgetown, KY 40324

RE: Sandy Hook New Water Treatment Plant (WTP) Improvements – Competitive Negotiations

Dear Mr. Lovan:

Pace has compiled a list of potential savings for the Sandy Hook New WTP Improvements Competitive Negotiations. Please see list of items below. Please do not hesitate to contact us in regard to questions or further explanation of the items listed.

Sandy Hook WTP Improvements
Competitive Negotiation

Original Bid Amount = $ 7,970,000.00

Item	***Description***	***Cost Savings***
1	Cost Savings due to more efficient means and method of construction of WTP per bid plans and specs	$ 147,630.00
2	Deduct to provide bray valves for Filter system in lieu of lug butterfly valves	$ 76,000.00
3	Eliminate/ Postpone Roof over Lagoon	$ 156,510.00
4	Eliminate Gabion Walls and install at a later date	$ 188,700.00
5	Eliminate Stairs and Rails in Loft Area	$ 44,400.00
6	Eliminate Plywood floor on loft area and install at a later date	$ 5,550.00
7	Eliminate Pumps and Controls in Septic Tank and use Gravity Flow	$ 12,765.00
8	Savings to supply the blowers for Filter System by Excelsior directly	$ 16,650.00
9	Move Building location to future location along with moving Clearwell location porportionately to reduce length of piping	$ 29,970.00
10	Remove clearing of North Hillside from scope	$ 19,980.00
11	Replace Cast in place concrete footers and walls with earth berm with liner on the slopes to same elevation as shown on plans; filter media and piping to be in same locations	$ 55,500.00
12	Potential Escaltion Savings - Due to the current market we included escalation in our bid; if the job is awarded quickly and we can lock in our pricing we would share any savings made in the cost savings column	$ 106,560.00
	Total Savings =	**$ 860,215.00**
	Competitive Negotiation Bid Amount =	**$ 7,109,785.00**

Thank you,

Mike Mulhall, P.E.

Pace Contracting, LLC

From:	Kerry Smith
To:	blovan@bluegrassengineering.net
Cc:	Codee Guffey; Joe Smith
Subject:	RE: Sandy Hook Water District, Contract 12 - New Water Treatment Plant Improvements - Competitive Negotiations
Date:	Monday, June 13, 2022 9:46:51 AM

Brian K. Lovan, PE,
At this time we would not be competitive in negotiations.
Sincerely,
Kerry Smith

From: blovan@bluegrassengineering.net <blovan@bluegrassengineering.net>
Sent: Monday, June 13, 2022 9:03 AM
To: Kerry Smith <ks@sci82.com>
Subject: Sandy Hook Water District, Contract 12 - New Water Treatment Plant Improvements - Competitive Negotiations

Mr. Kerry Smith,

On behalf of the Sandy Hook Water District (District), we would like to thank you for submitting a bid for the above referenced project. All of the bids submitted pursuant to competitive sealed bidding under KRS Chapter 45A resulted in bid prices in excess of the funds available for Contract 12 – New Water Treatment Plant Improvements.

The District is seeking additional funds for the project. In the best interest of the District to prevent further delay in the project and pursuant to KRS 45A.090 – Negotiation after competitive sealed bidding when all bids exceed available funds, the District will conduct competitive negotiations pursuant to KRS 45A.085 - Competitive negotiation with the three (3) low evaluated responsive, responsible, best and qualified bidders determined in writing by the bids submitted, based on criteria contained in the bid invitation.

We are requesting that you please respond in writing to Bluegrass Engineering, PLLC no later than **Wednesday, June 15, 2022 by 2:00 p.m. (EDT)** if you are interested in entering into the negotiations. If no response is received by the deadline stated, then it will be presumed that your company declines to participate in the negotiations.

Respectfully,

BLUEGRASS ENGINEERING PLLC

Bryan K. Lovan, PE, PLS

222 East Main Street, Suite 1
PO Box 1657
Georgetown, Kentucky 40324
e-mail: blovan@bluegrassengineering.net
Cell: (859) 351-1714
Fax: (502) 642-5180
www.bluegrassengineering.net

COMPETITIVE NEGOTIATION REVIEW SUMMARY

OWNER: SANDY HOOK WATER DISTRICT, SANDY HOOK, KY

PROJECT NAME: Contract 12 – New Water Treatment Plant Improvements

EVALUATION CRITERIA	RANKING OF BIDDERS		
	A	B	C
1) Original Bid Amount including all identified potential cost saving items or changes. a.) Lowest Total Dollar Amount 25 points b.) Second Lowest Total Dollar Amount 10 points c.) Highest Total Dollar Amount 5 points	**25**	10	DECLINED
2) Amount of redesign effort required to implement the recommended cost savings item. a.) Minimal to Zero redesign effort 15 points b.) Moderate redesign effort 10 points c.) Significant redesign effort 0 points	**12.6**	9.5	
3) Viability of the offered potential cost savings to be implemented and accepted by the regulatory agencies a.) Viable 15 points b.) Somewhat Viable 10 points c.) Not Viable 0 points	**12.1**	7.9	
4) Potential offer's ability to utilize the originally specified material or equipment (M&E) a.) Use of Original Base Bid M&E 10 points b.) Use of Approved M&E not in Original Bid 5 points c.) Use of Non-Specified M&E 0 points	**3.6**	8.3	
5) Number of Potential Cost Savings Items offered to provide the greatest savings a.) Minimal (< $25,000) 5 points b.) Moderate ($25K to $75K) 15 points c.) Significant (>$75K) 25 points	**15**	25	
TOTAL	**68.3**	60.8	0.0
RANKING OF BIDDERS (1,2,3)	**1**	2	3

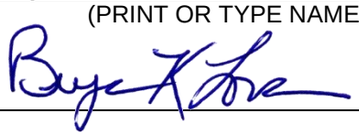
Bidder A = Herrick Company, Inc. Original Bid = $7,150,000.00
Bidder B = Pace Contracting, LLC. Original Bid = $7,970,000.00
Bidder C = Smith Contractors, Inc. Original Bid = $8,327,000.00

Note:
1. Items 2) through 5) shall be used to evaluate each individual cost savings item on their own merit and assigned the appropriate points.
2. Each potential cost savings item shall identify the M&E to be used in the savings, if different from the original bid in order to evaluate for Item 4).

CERTIFICATION: I hereby certify that on behalf of Sandy Hook Water District, Bluegrass Engineering, PLLC reviewed and ranked all bidders who responded and provided offers that were deemed qualified based on information available in the Contract Documents. Bluegrass Engineering, PLLC evaluated and ranked all bidders based on the ranking criteria listed above and no other criteria were used.

Bryan K. Lovan, PE, PLS — (PRINT OR TYPE NAME)

6/23/2022 — (DATE)



(SIGNATURE)

APPENDIX F – LETTER OF RECOMMENDATION

BLUEGRASS ENGINEERING PLLC

June 3, 2022

Mr. Phillip Justice
Sandy Hook Water District
474 Howards Creek Road
Sandy Hook, Kentucky 41171

Re: 2019 Water System Improvements – Contract 13
Recommendation of Award

Dear Mr. Justice;

Bids for the above referenced project were opened on Thursday, June 2, 2022 at 2 pm EST at the Sandy Hook Water District office. There were five (5) bidders: G and W Construction, Independent Excavating, BP Pipeline, BOCA Enterprises, and Roe Enterprises DBA Swartz Pipeline Contracting. The low bidder was G & W Construction, Morehead, Kentucky with a bid of $768,428.63.

Since G & W Construction has completed several successful projects over the years with myself and Bluegrass Engineering, I would recommend the Sandy Hook Water District, accept the low bid of G and W Construction.

If you have any questions, please contact me at your convenience.

Sincerely,

Riley Sumner
Project Manager

C Teresa Shields, RD
File

BLUEGRASS ENGINEERING PLLC

June 3, 2022

Mr. Phillip Justice
Sandy Hook Water District
474 Howards Creek Road
Sandy Hook, Kentucky 41171

Re: 2019 Water System Improvements – Contract 12
Recommendation of Award

Dear Mr. Justice;

Bids for the above referenced project were opened on Thursday, June 2, 2022 at 2 pm EST at the Sandy Hook Water District office. There were four (4) bidders: Herrick Company, Inc., Pace Contracting, LLC, Smith Contractors, and Building Crafts, Inc. The low bidder was Herrick Company, Inc., Lawrenceburg, Kentucky with a bid of $7,150,000.

Since Herrick Company has completed several successful projects over the years with Bryan Lovan, Bluegrass Engineering would recommend the Sandy Hook Water District, accept Herrick Construction so that Bluegrass Engineering can enter into negotiations in order to reduce the costs. Additional loan/grant monies will be pursued from other entities.

If you have any questions, please contact me at your convenience.

Sincerely,

Riley Sumner
Project Manager

C Teresa Shields, RD
File

APPENDIX G – REVISED SUMMARY ADDENDUM

SUMMARY ADDENDUM

TO

PRELIMINARY ENGINEERING REPORT

DATED June 2022

FOR

Sandy Hook Water District – New Treatment Plant and System Improvements
(Name of Project)

APPLICANT CONTACT PERSON Bridgette Howard, Manager

APPLICANT PHONE NUMBER (606) 738-6282

APPLICANT TAX IDENTIFICATION NUMBER (TIN) 61-6016689

.

I. GENERAL

A. Proposed Project: Provide a brief description of the proposed project. In addition to this summary, the applicant/engineer should submit a project map of the service area.

The proposed project is to build a new water treatment plant with a capacity of 300,000 GPD. This structure will contain an office as well as new high service pumps, chlorine equipment, filter tanks, drying beds and other general site work. Included in this construction will be a new above ground clear well with a capacity of 50,000 gallons.

The project will also cover the resealing of the Wrigley Water Tank located at the 11-mile marker of KY 7. This tank is in poor condition and repairs are necessary for its continued use. VFD's will be added at the Wrigley Pump Station located at the 3-mile marker of KY 7 to augment the repairs on the water tank. This will allow the District to keep adequate pressure in the lines while the tank is undergoing repairs. The installation of VFD's will also improve the overall performance of the pump station and reduce energy costs.

Lastly, the project will replace approximately 17,800 feet of problematic 4" PVC waterline on KY 755 from mile point 3.7 to mile point 6.5 and along KY 556 from mile point 5.6 to mile point 6.2. This area affects approximately 50 residences and has been continuously problematic and costly to maintain. The new line will be installed adjacent to the existing line and all customer meters will be reconnected to the new line.

II. FACILITY CHARACTERISTICS OF EXISTING SEWER SYSTEM *N/A*

A. Sewage Treatment:

1. Type _____

2. Method of Sludge Disposal _____

3. Cost per 1,000 gallons if sewage treatment is contracted:

$ _____

4. Date Constructed _____

B. Treatment Capacity of Sewage Treatment Plant _____

C. Type of Sewage Collector System (Describe)

D. Number and Capacity of Sewage Lift Stations

E. Sewage Collection System:

Lineal Feet of Collector Lines, by size 6" _____ ***8"*** _____

10" _____ 12"_____, Larger _____

Date(s) Constructed _____

F. Conditions of Existing System: Briefly describe the conditions and suitability for continued use of facility now owned by the applicant. Include any major renovation that will be needed within five to ten years.

III. FACILITY CHARACTERISTICS OF EXISTING WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable.

The District currently operates a water treatment plant with capacity of .374 MGD and currently produces an average of .200 MGD. The water source consists of eight total wells, of which three are currently used, located along Howard's Creek in Elliott County. Additionally, the District has purchase water contracts with Rattlesnake Ridge Water District and Rowan Water Inc. to ensure multiples sources of water for their customers.

If the applicant purchases water:

Seller(s):

1. Rattlesnake Ridge Water District

Price/1,000 gallons:

1. $2.90

Seller(s):

2. Rowan Water Inc.

Price/1,000 gallons:

2. $1.75

Present Estimated Market Value of Existing System: $ 6,470,401.00

B. Water Storage:

Type: Ground Storage Tank 2 Elevated Tank 1

Standpipe 2 Other _____

Number of Storage Structures 5

Total Storage Volume Capacity 550,000 Gallons

Date Storage Tank(s) Constructed 1988, 1992, and 2002

C. Water Distribution System:

Pipe Material AC, PVC, DI

Lineal Feet of Pipe: 2” & 3" Diameter 226,500 4" 189,350

6" 217,100 8" 4,400

10" 12"

All pipe footage is an estimate only.

Date(s) Water Lines Constructed 1990 – present

Number and Capacity of Pump Station(s) 5; 750 gpm

D. Condition of Existing Water System:

Briefly describe the condition and suitability for continued use of facility now owned by the applicant. Include any major renovation that will be needed within five to ten years.

The Sandy Hook Water District’s system is currently in fair condition. Renovations/upgrades over the next five to ten years will continue to improve the older, undersized sections of the system and provide a safe, reliable source of drinking water to the customers.

E. Percentage of Water Loss Existing System 24%

IV. EXISTING LONG-TERM INDEBTEDNESS

A. List of Bonds and Notes:

Date of Issue	Bond/Note Holder	Principal Balance	Payment Date	Bond Type Water/Sewer*		Amount on Deposit in Reserve Account
1988 Issue	USDA RD	$237,000	Semi-Annual	100 %	6.25 %	$
1991 Issue	USDA RD	$316,000	Semi-Annual	100 %	5.00 %	$
1995 Issue	USDA RD	$259,000	Semi-Annual	100 %	4.50 %	$
2001 Issue	USDA RD	$495,000	Semi-Annual	100 %	4.50 %	$
2014 Issue	USDA RD	$504,000	Semi-Annual	100 %	2.75 %	$

* If a combined issue, show attributable portion to each system.

B. Principal and Interest Payments: (Begin with Next Fiscal Year Payment)

		Payment Year **2019**		Payment Year **2020**		Payment Year **2021**	
Date of Issue	Bond/Note Holder	Principal Payment	Interest Payment	Principal Payment	Interest Payment	Principal Payment	Interest Payment
1988 Issue	USRD	9,000	8,000	10,000	7,438	11,000	6,812
1991 Issue	USRD	10,000	8,200	11,000	7,700	11,000	7,150
1995 Issue	USRD	7,000	7,402	7,500	7,088	8,000	6,750
2001 Issue	USRD	10,000	17,482	10,500	17,032	11,000	16,560
2014 Issue	USRD	8,500	13,097	8,500	12,863	9,000	12,622
Total		$44,500	54,181	47,500	52,121	50,000	49,894

V. EXISTING SHORT-TERM INDEBTEDNESS

A. List of All Short Term Debts: (Do Not Show Any Debt Listed in Paragraph IV Above)

Lender or Lessor	Date of Issue (Month & Year)	Principal Balance	Purpose (Water and/ or Sewer)	Payment Date	Principal & Interest Payment (P&I)	Date to Be Paid In Full

VI. LAND AND RIGHTS - EXISTING SYSTEM(S)

Number of Treatment Plant Sites:	Water		***Sewer***	***N/A***
Number of Storage Tank Sites	Water	4	***Sewer***	***N/A***
Number of Pump Stations:	Water	5	***Sewer***	***N/A***
Total Acreage:	Water	15 Acres	***Sewer***	***N/A*** ***Acres***
Purchase Price:	Water	$	***Sewer***	***$ N/A***

VII. NUMBER OF EXISTING USERS

	Water	***Sewer***
Residential (In Town) *		.
Residential (Out of Town) *	1,102	.
Non-Residential (In Town)		.
Non-Residential (Out of Town)	108	.
Total	1,210	.
Number to Total Potential Users Living in the Service Area	350	.

*Note: Residential Users: Classify by type of user regardless of quantity of water used. This classification should include those meters serving individual rural residence.

VIII. CURRENT WATER AND SEWER CONNECTION FEES FOR EACH SIZE WATER METER CONNECTION

Meter Size	Water Connection Fee	***Sewer Connection Fee***
5/8" x 3/4"	$ 800.00 (Residential)	***$ N/A***
_____	$ _____	***$ N/A***

IX. SEWER RATES - EXISTING SYSTEM *N/A*

Percentage of Water Bill _____ ***%*** ***Minimum Charge $*** _____

Other: (If Charge Not Based on Water Bill) _____

Date This Rate Went Into Effect _____

X. WATER RATES - EXISTING SYSTEM

Existing Rate Schedule:

5/8" Meters		
First 2,000	28.57	Minimum
Next 8,000	11.19	Per 1,000 gallons
Next 40,000	10.00	Per 1,000 gallons
Over 50,000	8.81	Per 1,000 gallons
1" Meters		
First 5,000	62.14	Minimum
Next 5,000	11.19	Per 1,000 gallons
Next 40,000	10.00	Per 1,000 gallons
Over 50,000	8.81	Per 1,000 gallons
1 1/2" Meters		
First 10,000	118.09	Minimum
Next 40,000	10.00	Per 1,000 gallons
Over 50,000	8.81	Per 1,000 gallons
2" Meters		
First 20,000	218.09	Minimum
Next 30,000	10.00	Per 1,000 gallons
Over 50,000	8.81	Per 1,000 gallons
3" Meters		
First 30,000	318.09	Minimum
Next 20,000	10.00	Per 1,000 gallons
Over 50,000	8.81	Per 1,000 gallons

Date This Rate Went Into Effect March 21, 2017

XI. ANALYSIS OF ACTUAL WATER USAGE - EXISTING SYSTEM - 12 MONTH PERIOD

For Period 01/01/2018 to 12/31/2018 .

ANALYSIS OF ACTUAL WATER USAGE - EXISTING SYSTEM

		Residential			Commercial			Wholesale			Bulk	
MONTHLY WATER USAGE	Average	No. of Users	Usage 1,000	Average	No. of Users	Usage 1,000	Average	No. of Users	Usage 1,000	Average	No. of Users	Usage 1,000
5/8 x 3/4 meter												
0 - 2,000 Gal.	725	297	215	875	57	50						
2,000 - 10,000 Gal.	2,650	750	1,988	2,050	24	49						0
10,000 - 50,000 Gal.	10,678	55	587	10,015	1	10						0
50,000 & Over Gal.	50,111	10	501	50,489	1	50						0
1" meter												
0 - 5,000 Gal.	1,050	3	3	1,650	1	2						
5,000 - 10,000 Gal.	5,578	2	11	5,000	1	5						
10,000 - 50,000 Gal.	10,785	1	11	10,000	1	10						
50,000 & Over Gal.												
1 & 1/2" meter												
0 - 10,000 Gal.												
10,000 - 50,000 Gal.				10,041	1	10						
50,000 & Over Gal.												
2" meter												
0 - 20,000 Gal.				17,500	3	53						
20,000 - 50,000 Gal.				49,500	2	99						
50,000 & Over Gal.												
3" meter												
0 - 30,000 Gal.												
30,000 - 50,000 Gal.												
50,000 & Over Gal.												
	Subtotal	*1118*	*3,316*		*92*	*338*		*0*	*0*		*0*	*0*
Average Monthly Usage			2,966			3,671			#DIV/0!			#DIV/0!
	Totals	**1118**	**3316.3**		**92**	**337.77**		**0**	**0**		**0**	**0**
	Total Water Purchased and/or Produced					74,397						
	Total Water Sold (Gallons)					52,410	*43,848,000 (water) + 8,562,,000 (sewer)*					

XV. FACILITY CHARACTERISTICS OF PROPOSED WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable.

Water Supply described in Section III-A.

B. Water Storage:

Type: Ground Storage Tank 2 Elevated Tank 1

Standpipe 2 Other _____

Number of Storage Structures 5

Total Storage Volume Capacity 550,000

C. Water Distribution System:

Pipe Material PVC, AC, DI

Lineal Feet of Pipe: 3" Diameter 226,500 4" 189,350

6" 217,100 8" 4,400

10" _____ 12" _____

Number and Capacity of Pump Station(s) 5; 750 gpm

XVI. LAND AND RIGHTS - PROPOSED WATER SYSTEM

Number of Treatment Plant Sites	0
Number of Pump Sites	0
Number of Other Sites	0
Total Acreage	0 Acres
Purchase Price	$ 0

XIX. NUMBER OF NEW WATER USERS

Residential (In Town) *	0
Residential (Out of Town) *	0
Non-Residential (In Town)	0
Non-Residential (Out of Town)	0
Total	0
Number to Total Potential Users Living in the Service Area	0

*Note: Residential Users: Classify by type of user regardless of quantity of water used. This classification should include those meters serving individual rural residences.

XX. PROPOSED WATER CONNECTION FEES FOR EACH SIZE WATER METER CONNECTION:

Meter Size	Connection Fee
5/8" x 3/4"	$ 800.00
1 - Inch	$ Actual Cost
1-1/2 Inch	$ Actual Cost
2 - Inch	$ Actual Cost
3 - Inch	$
4 - Inch	$
5 - Inch	$
6 - Inch	$

XXII. WATER RATES - PROPOSED

A. Proposed Rate Schedule without RUS Grant:

5/8" Meter		
First 2,000	38.28	Minimum
Next 8,000	14.99	Per 1,000 gallons
Next 40,000	13.40	Per 1,000 gallons
Over 50,000	11.81	Per 1,000 gallons
1" Meter		
First 5,000	83.27	Minimum
Next 5,000	14.99	Per 1,000 gallons
Next 40,000	13.40	Per 1,000 gallons
Over 50,000	11.81	Per 1,000 gallons
1 & ½" Meter		
First 10,000	158.24	Minimum
Next 40,000	13.40	Per 1,000 gallons
Over 50,000	11.81	Per 1,000 gallons
2" Meter		
First 20,000	292.24	Minimum
Next 30,000	13.40	Per 1,000 gallons
Over 50,000	11.81	Per 1,000 gallons
3" Meter		
First 30,000	426.24	Minimum
Next 20,000	13.40	Per 1,000 gallons
Over 50,000	11.81	Per 1,000 gallons

B. Recommended Rate Schedule with RUS Grant:

5/8" Meter		
First 2,000	37.14	Minimum
Next 8,000	14.55	Per 1,000 gallons
Next 40,000	13.00	Per 1,000 gallons
Over 50,000	11.45	Per 1,000 gallons
1" Meter		
First 5,000	80.78	Minimum
Next 5,000	14.55	Per 1,000 gallons
Next 40,000	13.00	Per 1,000 gallons
Over 50,000	11.45	Per 1,000 gallons
1 & ½" Meter		
First 10,000	153.52	Minimum
Next 40,000	13.00	Per 1,000 gallons
Over 50,000	11.45	Per 1,000 gallons
2" Meter		
First 20,000	283.52	Minimum
Next 30,000	13.00	Per 1,000 gallons
Over 50,000	11.45	Per 1,000 gallons
3" Meter		
First 30,000	413.52	Minimum
Next 20,000	13.00	Per 1,000 gallons
Over 50,000	11.45	Per 1,000 gallons

XXV. FORECAST OF WATER USAGE - INCOME - EXISTING SYSTEM -EXISTING USERS

XXV. FORECAST OF WATER USAGE - INCOME - EXISTING SYSTEM

MONTHLY WATER USAGE	AVERAGE				AVERAGE RATE				Residential			Commercial		
	Residential	Commercial	Wholesale	Bulk	Residential	Commercial	Wholesale	Bulk	No. of Users	Usage 1,000	Income	No. of Users	Usage 1,000	Income
5/8 x 3/4 meter														
0 - 2,000 Gal.	725	875			$ 33.00	$ 33.00			297	215	9,801	57	50	1,881
2,000 - 10,000 Gal.	2,650	2,050			$ 41.29	$ 33.64			750	1,988	30,966	24	49	807
10,000 - 50,000 Gal.	10,678	10,015			$ 142.80	$ 135.17			55	587	7,854	1	10	135
50,000 & Over Gal.	50,111	50,489			$ 596.11	$ 599.89			10	501	5,961	1	50	600
1" meter														
0 - 5,000 Gal.	1,050	1,650			$ 71.50	$ 71.50			3	3	215	1	2	72
5,000 - 10,000 Gal.	5,578	5,000			$ 78.87	$ 71.50			2	11	158	1	5	72
10,000 - 50,000 Gal.	10,785	10,000			$ 144.28	$ 135.25			1	11	144	1	10	135
50,000 & Over Gal.														
1 & 1/2" meter														
0 - 10,000 Gal.		0				$ 135.75								
10,000 - 50,000 Gal.		10,041				$ 596.22			0	0	0	1	10	596
50,000 & Over Gal.		0												
2" meter														
0 - 20,000 Gal.		17,500				$ 250.75			0	0	0	3	53	752
20,000 - 50,000 Gal.		49,500				$ 590.00			0	0	0	2	99	1,180
50,000 & Over Gal.		0												
3" meter														
0 - 30,000 Gal.														
30,000 - 50,000 Gal.														
50,000 & Over Gal.														
	Sub-Total								*1,118*	*3,316*	*$55,098*	*92*	*338*	*$6,230*
Average Monthly Rate					$ 45.32									
Average Monthly Usage										2,966			3,671	
	Totals								**1,118**	**3,316**	**$55,098**	**92**	**338**	**$6,230**

XXXVI. CURRENT OPERATING BUDGET - (WATER SYSTEM) -									
							Year Ending 2018		
	A.	Operating Income:							
		Water Sales						$	639,828
		Disconnect/Reconnect/Late Charge Fees/Customer Tap						$	18,545
		Other (Describe) Misc. Revenues						$	15,007
			Sewer Collection Revenue					$	128,854
			Less Allowances and Deductions						
		Total Operating Income						$	802,234
	B.	Operation and Maintenance Expenses:							
		(Based on Uniform System of Accounts prescribed by National Association of Regulatory Utility Commissioners)							
		Operation Expense						$	497,579
		Maintenance Expense						$	85,141
		Customer Accounts Expense						$	18,756
		Administrative and General Expense						$	26,198
		Total Operating Expenses						$	627,674
		Net Operating Income						$	174,560
	C.	Non-Operating Income:							
		Interest on Deposits						$	1,180
		Other (Identify)		Gain (loss) on Sales				$	(1,079)
		Total Non-Operating Income						$	101
	D.	Net Income						$	174,661
	E.	Debt Repayment:							
		RUS Interest						$	56,000
		RUS Principal						$	42,000
		Non-RUS Interest						$	-
		Non-RUS Principal						$	-
		Total Debt Repayment						$	98,000
	F.	Balance Available for Coverage						$	76,661
		Short Lived Assets						$	13,000
		Debt Reserve							
		Balance Available						$	63,661
		Coverage Ratio							1.78

XXXVII. PROPOSED OPERATING BUDGET - (WATER SYSTEM)			
	(1st Full Year of Operation)	Year Ending 2021	
A.	Operating Income:		
	Water Sales		$ 831,276
	Disconnect/Reconnect/Late Charge Fees		$ 22,000
	Other (Describe) Misc. Revenues		$ 17,500
	Sewer Collection Revenue		135,000
	Less Allowances and Deductions		
	Total Operating Income		$ 1,005,776
B.	Operation and Maintenance Expenses:		
	(Based on Uniform System of Accounts prescribed by National Association of Regulatory Utility Commissioners)		
	Operation Expense		$ 554,879
	Maintenance Expense		$ 94,946
	Customer Accounts Expense		$ 20,916
	Administrative and General Expense		$ 29,215
	Total Operating Expenses		$ 699,956
	Net Operating Income		$ 305,820
C.	Non-Operating Income:		
	Interest on Deposits		$ 1,000
	Other (Identify) Gain (loss) on Sales		
	Total Non-Operating Income		$ 1,000
D.	Net Income		$ 306,820
E.	Debt Repayment:		
	RUS Interest		$ 113,000
	RUS Principal		$ 101,000
	Non-RUS Interest		$ -
	Non-RUS Principal		$ -
	Total Debt Repayment		$ 214,000
F.	Balance Available for Coverage		$ 92,820
	Short Lived Assets		$ 13,000
	Debt Reserve		$ 7,000
	Balance Available		$ 72,820
	Coverage Ratio		1.43

XV. ESTIMATED PROJECT COST – WATER

Development	$ 7,048,429
Land and Rights	72,000
Legal	40,000
Engineering	501,300
Interest	35,000
Contingencies	283,271
Initial Operating and Maintenance	0
Other (Refinance existing loan)	0
TOTAL	7,980,000

XXXVI. PROPOSED PROJECT FUNDING

Applicant - User Connection Fees	$ 0
Other Applicant Contribution	0
RUS Loan	3,880,000
RUS Grant	2,600,000
ARC Grant (If applicable)	1,500,000
CDBG (If applicable)	0
Other (Specify)	0
Other (Specify)	0
TOTAL	$ 7,980,000

SHWD Water System Improvements Revised 6/17/22

Summary Addendum

Funding Option 1 - 40 year Payback Schedule with Grant

First Year of Operation - Year Ending in 2021

Total Project Cost			*$7,980,000*
Proposed Funding			
ARC Grant Funds Committed			$1,500,000
RD Grant Funds Committed	$2,000,000		
RD Grant Funds - **Additional**	$600,000		
Total RD Grant Funds			$2,600,000
Proposed Bond Amount - Committed	$1,180,000		
Proposed Bond Amount - **Additional**	$2,700,000		
Total RD Proposed Bond Amount			$3,880,000
Proposed Debt Service			
RD Loan Annual Debt Service			$129,700
40 years @ 1.500%			
RD Loan Debt Service Coverage (10% of Annual Debt Service)			$12,970
Total New Project Debt Service			*$142,670*
Additional Expenses & Anticipated Debt Service			
Estimated Annual O & M Increase			$72,281
Short-Lived Assets			$13,000
Debt Reserve			
		+	
Total Additional Expenses & Anticipated Debt Service			*$85,281*
Total Annual Increase (Total New Project Debt Service + Total Additional Expenses)			$227,951
Balance Available for Coverage (For Planned & Ongoing Immediate Projects)		-	$37,443
Total Additional Annual Revenue Required			**$190,508**
Total Additional Annual Revenue Required			$190,508
Total 2018 Billed Water Revenue		÷	$639,828
Percentage Rate Increase			***30.00%***

In Gallons	**2018 Existing Rates**	**Proposed Rates**
5/8" Meter		
First 2,000	$28.57	**$37.14**
Next 8,000	$11.19	**$14.55**
Next 40,000	$10.00	**$13.00**
Over 50,000	$8.81	**$11.45**
1" Meter		
First 5,000	$62.14	**$80.78**
Next 5,000	$11.19	**$14.55**
Next 40,000	$10.00	**$13.00**
Over 50,000	$8.81	**$11.45**
1 & 1/2" Meter		
First 10,000	$118.09	**$153.52**
Next 40,000	$10.00	**$13.00**
Over 50,000	$8.81	**$11.45**
2" Meter		
First 20,000	$218.09	**$283.52**
Next 30,000	$10.00	**$13.00**
Over 50,000	$8.81	**$11.45**
3" Meter		
First 30,000	$318.09	**$413.52**
Next 20,000	$10.00	**$13.00**
Over 50,000	$8.81	**$11.45**

SHWD Water System Improvements
Summary Addendum
Funding Option 2 - 40 year Payback Schedule with no Additional Grant
First Year of Operation - Year Ending in 2021

Revised 6/17/22

Total Project Cost					*$7,980,000*
Proposed Funding					
ARC Grant Funds Committed					$1,500,000
RD Grant Funds Committed					$2,000,000
Proposed Bond Amount - Committed			$1,180,000		
Proposed Bond Amount - **Additional**			$3,300,000		
Total RD Proposed Bond Amount					$4,480,000
Proposed Debt Service					
RD Loan Annual Debt Service					$149,760
40 years @	1.500%				
RD Loan Debt Service Coverage (10% of Annual Debt Service)					$14,980
			Total New Project Debt Service		*$164,740*
Additional Expenses & Anticipated Debt Service					
Estimated Annual O & M Increase					$72,281
Short-Lived Assets					$13,000
Debt Reserve					
				+	
			Total Additional Expenses & Anticipated Debt Service		*$85,281*
Total Annual Increase (Total New Project Debt Service + Total Additional Expenses)					$250,021
Balance Available for Coverage (For Planned & Ongoing Immediate Projects)				-	$37,443
			Total Additional Annual Revenue Required		**$212,578**
Total Additional Annual Revenue Required					$212,578
Total 2017 Billed Water Revenue				÷	$639,828
			Percentage Rate Increase		***34.00%***

In Gallons	**2018 Existing Rates**	**Proposed Rates**
5/8" Meter		
First 2,000	$28.57	**$38.28**
Next 8,000	$11.19	**$14.99**
Next 40,000	$10.00	**$13.40**
Over 50,000	$8.81	**$11.81**
1" Meter		
First 5,000	$62.14	**$83.27**
Next 5,000	$11.19	**$14.99**
Next 40,000	$10.00	**$13.40**
Over 50,000	$8.81	**$11.81**
1 & 1/2" Meter		
First 10,000	$118.09	**$158.24**
Next 40,000	$10.00	**$13.40**
Over 50,000	$8.81	**$11.81**
2" Meter		
First 20,000	$218.09	**$292.24**
Next 30,000	$10.00	**$13.40**
Over 50,000	$8.81	**$11.81**
3" Meter		
First 30,000	$318.09	**$426.24**
Next 20,000	$10.00	**$13.40**
Over 50,000	$8.81	**$11.81**