March 9, 2017

Mr. Randy Green, Chairman
Marshall County Sanitation District No. 2
P.O. Box 432
Benton, KY 42025
(Submitted via Email to County Judge Executive Kevin Neal)

Re: Engineering Services Proposal
Phase 1 Sanitary Sewer Expansion
Marshall County Sanitation District No. 2
Draffenville, Marshall County, KY

Dear Randy:

Thank you for the opportunity to prepare this engineering services proposal for your review. In preparing this proposal, RIVERCREST Engineering, Inc. (RIVERCREST) has reviewed the project history, mapping, and data collected by our staff since our research began on the project some years ago. The following provides an outline of the engineering services and associated fees proposed for the District's Phase 1 Sewer Expansion project. For reference and consistency with the Kentucky Infrastructure Authority (KIA) submittal package, this project will include those expansion areas noted previously as Phases 1A thru 3. At this time, RIVERCREST has the capacity to begin work on this project immediately following approval of this proposal and execution of a written engineering services agreement. Our proposal addresses the following project phases,

a) Preliminary Evaluation
b) Surveying & Preliminary Design
c) Final Design & Permitting
d) Easement Development & Negotiation
e) Construction Contract Procurement
f) Construction Engineering & Closeout
g) Construction Observation.

Consistent with the KIA project funding application, RIVERCREST understands this project will include installation of approximately 13,200 l.f. of gravity sewer, 7,100 l.f. of force main, a duplex lift station, manholes, and appurtenances. The purpose and intent of this project include the following, (1) the decommissioning and closure of an existing package style wastewater treatment plant located on the Marshall County High School property; the existing WWTP has reached the end of its intended useful life cycle, and is in need of either replacement or elimination; (2) the closure of the Christian Fellowship school's existing septic system, which is currently operating at its maximum capacity; (3) the closure of a no-discharge lagoon treatment system that operates in the Steeple Chase development in Draffenville; (4) the extension of sanitary sewer service along U.S. Highway 641, to approximately 100 existing residences in the Draffenville area, which are currently served by aged septic systems. In addition, these improvements will serve as the keystone project, and backbone for the elimination of additional privatized wastewater treatment systems and failing septic systems in the Draffenville community along the U.S. Highway 68 and 641 corridors.

The following is a more detailed summary of our proposed scope of services, fees and projected schedule for this project:

I. Preliminary Evaluation

RIVERCREST will work with the Marshall County GIS Department to prepare GIS level preliminary mapping for the project, and will coordinate with our surveying sub-consultant and the Marshall County PVA, to review adjacent property ownership information throughout the project corridors, including existing easements, platted properties/subdivisions, and available rights-of-way for the sewer expansions, force main, and proposed lift station site. Detailed grantor/grantee searches, will be provided by our surveying sub-consultant (On Point Geomatics – OPG) at a later stage as required based on the final design alignments. In addition to this property research, RIVERCREST will coordinate with member utility companies (Benton Gas, North Marshall Water District, and AT&T) to obtain available mapping and record drawings. This step will aid in identifying potential conflicts ahead of the field surveying phase.

Following this initial review, RIVERCREST will schedule on site meetings with District staff and our surveying sub-consultant, OPG. The intent of these meetings will be to obtain a consensus and understanding of the chosen project corridors prior to our surveyor initiating the topographic survey. RIVERCREST understands that topographic surveys will be required for each proposed sewer main, force main, and the lift station site. These surveys will be imperative to identifying the existing infrastructure, topography, utilities, available property limits, which will be required during the subsequent phases of this project.

II. Surveying & Preliminary Design

The RIVERCREST team will conduct a field survey of the project limits as described previously. The survey will generally consist of detailed topographic surveying of a 21,000 foot by 30-foot-wide corridor in urban areas (40-foot wide in rural areas).

The project's field survey phase will consist of:

- Completing KY 811 BUD calls and coordination of field utility locates
- Establishing project survey control and benchmarks to KY State Plane coordinate system
- Collecting survey data including, building corners, miscellaneous structures/signage, edges of pavement, visible property/right-of-way corners, existing marked utility information, culverts, driveways, ditch/break lines, large trees, and general topographic data.
- Utilizing GPS or conventional survey techniques set up on the established control monuments. The horizontal control datum will be referenced to Kentucky State Plane South Zone for GIS compatibility. Vertical control is typically referenced to NAVD88 datum.
- Obtaining geotechnical soil borings and/or geologic reviews of USGS Geologic Quadrangle mapping to evaluate subsurface characteristics at the lift station location.

The preliminary design process will consist of:

- Developing gravity sewer, force main alignment and lift station site plan drawings
- Evaluating existing utilities, property limits and ownership

- Developing and reviewing existing ground surface models and geotechnical data
- Developing plan/profile sheets associated with the proposed sewers, lift station and force main
- Evaluating tie-in locations
- Conducting on site review with Owner and operations staff
- Issuing design recommendations based on engineering judgment and feedback from meeting held with Owner and operations staff
- Prepare and deliver a preliminary opinion of probable construction cost.

III. Final Design & Permitting Phase

Upon receiving the District's approval of the preliminary design concepts, RIVERCREST will update design documents and complete final construction plans. Design drawings typically include the following:

- Cover Sheet
- General Notes & Location Map
- Geotechnical Sheet
- Project Pay Item Quantity Summary Sheet
- Lift Station Site Plan
- Force Main Alignment Plan & Profiles
- Gravity Sewer Closure Plans & Profiles
- Existing WWTP Abandonment Plans
- Construction Details
- Electrical Details

Plan sheets are typically developed at minimum 1" = 50' horizontal scale.

RIVERCREST will utilize standard technical specifications for completion and submittal of a standard KY Division of Water – Wastewater Construction permit application package. This submittal typically includes design plans, technical specifications, construction permit application and related submittal documents. Due to the nature and configuration of this project, RIVERCREST anticipates the need to prepare and submit KY Transportation Cabinet encroachment permit applications prior to construction. Additional permitting services, as required for securing environmental approvals through the Division of Water and KIA will include submittals to the U.S. Fish & Wildlife Service, Army Corps of Engineers, and Division of Water Floodplain & Water Quality Certification Sections.

Additional permitting services such as endangered species studies, critical habitat studies, and historical landmark or archaeologic studies have not been included in our proposed scope of work. These studies can be added to our scope later at the District's request, with our service fees being adjusted on an agreed lump sum or hourly T&M basis.

IV. Utility Easement Development & Acquisition

RIVERCREST anticipates the need to prepare and secure numerous utility easements for completion of the project's construction phase. Our anticipations are based upon site and available PVA data reviews along the proposed corridors. RIVERCREST proposes to prepare up to eighty (80) easement descriptions for review by the District's attorney. RIVERCREST's surveying sub consultant will review and approve each description prior to the District's legal counsel preparing the proper easement acquisition documents. For the purposes of this proposal, RIVERCREST assumes that any required easements will be secured by the RIVERCREST team.

Once the final easement documents are obtained from District legal counsel, RIVERCREST will provide three good faith efforts to negotiate the easement on behalf of the Sanitation District. These efforts will include, initial contact through mailing of the easement package, telephone contact (when possible), and up to two on site meetings with the property owner(s). If successful, we will forward the easement documents to the District for recording. If unsuccessful after three attempts, we will deliver the documents to the District along with our discussion records and await further direction. For the purposes of this proposal, our easement negotiation scope excludes exercises beyond the three good faith attempts.

To keep the District abreast of our progress, RIVERCREST will prepare and submit bi-weekly status reports to the District. In the event additional easement development and/or negotiations become necessary, the RIVERCREST team can conduct these activities in accordance with our established time & materials service rates.

V. Procurement Services

RIVERCREST will prepare a project manual complete with standard contract and procurement documents for the District's use in obtaining competitive construction bids for the sewer expansion project. RIVERCREST will work with the District to develop one (1) general contract procurement package consisting of plans, specifications, wage rates, and documentation conforming to Kentucky Infrastructure Authority (KIA) and Division of Water funding requirements. RIVERCREST will prepare an advertisement for bids and forward to the local newspaper, local Association of General Contractors (AGC) office in Paducah, and surrounding plan rooms if requested. Our proposal assumes that the District will accept all direct expenses and invoices for advertising the project. RIVERCREST will also coordinate with and upload the construction documents to Paducah Blueprint & Supply for document reproduction and distribution to interested Bidders.

RIVERCREST will coordinate the bidding process, respond to prospective bidder inquiries, issue addenda if necessary, open and tabulate bids received, make necessary reference calls, prepare a letter of award recommendation, coordinate with Contractor, DOW, and the District for completion and submittal of the DOW/KIA Authority to Award (ATA) package, and execution of contract documents. RIVERCREST assumes that the District will coordinate with the Purchase Area Development District (PADD) office for the administration of the KIA funds. We understand this will include the PADD forwarding appropriate KIA procurement documents to RIVERCREST's attention prior to the procurement process.

It is estimated that RIVERCREST would participate in three (3) project meetings: one to review the contract plans and procurement package with the District prior to soliciting bids; the second being a public meeting to inform the residents of the upcoming project, and to answer questions regarding the project, and the third being the bid opening.

VI. Construction Engineering & Closeout

RIVERCREST's Project Manager will receive, review and comment on material and shop drawings submittals. Prior to initiating construction, survey crews will field stake the centerline of the proposed sewers on approximately 100 foot intervals and layout the proposed lift station site. We will also stake significant changes in horizontal alignment, bores, encasements, tie-ins and manhole locations. Our proposal assumes that we will stake the project alignment once. All remedial or additional staking requested by the Contractor or Owner can be provided on a time & materials basis.

Upon completion of field staking, RIVERCREST's project manager will schedule and conduct a pre-construction meeting with the selected general contractor, DOW, associated subcontractors, engineering representatives, and District staff. Our project manager will review schedule, project communication roles, plans, details, and any additional information deemed useful by the District. DOW will review all of the construction submittal requirements for the duration of the construction period and closeout.

RIVERCREST will provide construction engineering services including, coordination with District staff, contractor, and the inspector on project activities and progress, coordination and attendance at monthly progress meetings and KDOW project site visit (assume 7 meetings), processing of monthly pay requests and coordination of required Contractor monthly and quarterly submittals and payroll certifications, field walkthrough/punchlist inspection, KDOW certification, project closeout, and record drawing development and distribution services.

VII. Construction Observation

RIVERCREST estimates our construction representative will be on site approximately six (6) hours per day during active construction activity. We have also allocated two (2) hours per day for preparation, travel, document preparation, and photographic logging of daily construction activity. We estimate our field personnel will be actively involved with the construction process, five (5) days per week for a project duration of 32 calendar weeks.

During the construction phase, our project representative will track daily pay item quantities, prepare detailed field book sketches for the lift station structure, force main installations, and gravity sewer installations, log daily photos of the construction activities, assist with interpretation of the project plans and specifications, and coordinate with District operations staff for required system shut-downs, pump and line testing, and tie-ins.

VIII. Proposed Fee

Our proposed engineering fee is divided into Lump Sum work descriptions for the preliminary evaluation, surveying & preliminary design, final design / permitting, procurement, construction engineering & closeout, and periodic construction observation services as noted below:

• Preliminary Evaluation (LS)	$9,600.00
• Surveying & Preliminary Design (LS)	$29,900.00
• Final Design & Permitting (LS)	$42,200.00
• Easement Development & Negotiation	$33,900.00
• Procurement (LS)	$6,800.00
• Construction Engineering & Closeout (Hrly)	$45,000.00
• Construction Observation (Hrly)	$96,000.00
• Direct Expenses – Survey/Geo/Electrical/Mileage	$43,000.00
Total Proposed Fee	**$306,400.00**

IX. Schedule

We estimate that the engineering services for the project as described herein can begin immediately following execution of an engineering services contract, and can be completed on the general timeframe as noted below:

Preliminary Evaluation	3 weeks
Preliminary Design & Surveying	8 weeks
Final Design	6 weeks
Permitting	6 weeks
Easements	16 weeks
Procurement Phase	6 weeks
Construction Phase	32 weeks
Project Closeout	4 weeks

Once you have had an opportunity to review our proposal, please contact me to discuss any concerns or questions you may have. If the District is agreeable to starting this work in accordance with this proposal, please sign below, and return to us for initiating work. As we are currently working under a professional engineering services agreement with the Marshall County Fiscal Court, we understand that we will continue to operate under this agreement for the duration of this project.

Sincerely,
RIVERCREST ENGINEERING, INC.

Charles D. McCann II, P.E.
Project Manager

APPROVED BY:

_____
Mr. Randy Green - Chairman
Marshall County Sanitation District No. 2

JOB NO.:	16005
DESIGNED BY:	CDM
DRAWN BY:	ELY
CHECKED BY:	RBF

MCSD No2 LIFT STATION
PRIVATE LIFT STATION
MANHOLES
FORCE MAIN
GRAVITY SEWER
PROPOSED LIFT STATION

PROPOSED MAINS (Colored by Phase)

- 1A (MCHS 10 Cust. Added)
- 1B (68 Cust. Added)
- 1B Forcemain
- 2 (CF 6 Cust. Added)
- 3 (24 Cust. Added)

0 150 300 600 900
GRAPHIC SCALE (FT)

MARSHALL COUNTY SANITATION DISTRICT NO.2

PREPARED BY:
SEPT. 2016

Rivercrest Engineering, Inc.
7020 U.S. HWY 68 W.
PADUCAH, KY 42003

PROJECT: SEWER EXPANSION PROJECTS

TITLE: PHASE I SANITARY SEWER EXPANSION

MAP No.: 1