901 Vine Street
P.O. Box 72
Poplar Bluff, MO 63902
Phone 573.785.9621
Fax 573.785.2651

SMITH&CO.
ENGINEERS

September 14, 2022

City of Jackson, Missouri
Anna Bergmark, P.E.
City Engineer
101 Court St.
Jackson, MO 63755

Re: **Civil and Surveying Services**
Hubble Creek Trail – Phase III

Dear Ms. Bergmark,

Smith & Co. is pleased to provide the following proposal for Professional Services for the proposed Hubble Creek Trail – Phase III Final Design. The project will include, at a minimum, an approximately 1.4-mile ADA compliant 10-foot-wide concrete trail, a pedestrian bridge over Hubble Creek and trail lighting. The detailed scope of services to be provided is listed below.

SCOPE OF SERVICES

A. **SURVEY** –the Engineer will:

1. Conduct topographic, property and utility surveys sufficient to develop plans for the project; field data will sufficient to produce one-foot contours and spot elevations.
2. Elevations tied to appropriate Vertical Datum and establish project control points.
3. Topographic Survey to include location of visible utilities and markings provided from 1-800 DIG RITE (Missouri One Call) along with any available utility maps provided to the surveyor. Location of subsurface private utility lines on private property is not part of the 1-800 DIG RITE or Smith & Co's scope. If private lines are to be located, then these should be marked by others prior to commencement of survey.

B. **EASEMENTS** - the Engineer will:

1. Determine temporary and permanent easement requirements, prepare easement plans, and assist the City of Jackson in acquiring the deeds needed for the project (if required); condemnation and mediation proceedings are excluded from this scope.
2. Prepare boundary surveys and prepare all plats and legal descriptions for the purpose of obtaining temporary and permanent easements for the project, right-of-way negotiation services are not included in the scope of this project.

C. **GEOTECHNICAL** - the Engineer will:

1. Drill a total of three (3) geotechnical borings for pedestrian bridge design. Two (2) borings are planned to extend to 20 feet and one (1) boring to 35 feet. All borings will extend to specific depths, or auger encounter with bedrock, whichever is shallower. Drilling and sampling methods will be as generally outlined below.

    a. Subsurface borings will be drilled using 4.5 O.D. continuous flight augers;
    b. Soil samples will be collected at 2.5-to-5-foot centers during drilling;
    c. Soil sample types will include split spoon samples collected in advance of the augers;
    d. No rock coring will be preformed;
    e. Groundwater levels will be measured during drilling and upon completion of drilling;
    f. Borings will be backfilled with a hole plug and available auger cuttings.

2. Seal and transport soil samples to Smith & Company's Laboratory for analysis and testing. The specific number and types of laboratory tests to be performed will be influenced by the subsurface conditions encountered in the field and the quality of samples. The exact scope of laboratory testing will not be determined until the filed investigation is complete. Laboratory testing will include:
    a. Atterberg Limits (ASTM D4318);
    b. Grain Size Analysis (ASTM D6913);
    c. Moisture Content (ASTM D2216); and
    d. Pocket Penetrometer Strength.

3. The collected field and laboratory data will be analyzed, and a formal Geotechnical Engineering Report will be prepared. An electronic (.pdf) copy of the Report will be submitted for review. The Report will include a Site Location Plan, Boring Locations, typed Boring Logs showing the results of the field and laboratory testing, and Geotechnical Engineering Recommendations for foundation design, construction planning and site development.

D. **PRELIMINARY DESIGN PHASE (30% Completion)** – the Engineer will:

1. Prepare a preliminary layout of the proposed Hubble Creek Trail – Phase III; utilizing existing aerial photos, City of Jackson GIS Data, Public Lidar Data and conducting several site visits.
2. Prepare preliminary estimates for the utilization of applying for a Recreational Trail Program (RTP) Grant.

E. **FINAL DESIGN** - the Engineer will:

1. Preform Environmental review of the project based on the preliminary layout.
2. Perform environmental review of the project. This includes obtaining US ARMY Corps. of Engineers 404 Permit for the construction of the pedestrian bridge over Hubble Creek.
3. Ensure compliance with historic preservation requirements through coordination with the Missouri Department of Natural Resources.
4. Arrange to have the site examined by a qualified archaeologist on a subcontract basis. Price is included in final design fee.
5. Coordinate with the Missouri Department of Transportation and obtain any necessary construction permits to be able to complete the construction of the trail project within the Highway 72 corridor and MODOT Right-of-Way.

6. Prepare design and loading information for the new pedestrian bridge to cross Hubble Creek. Style and cosmetic appearance of pedestrian bridge to be determined by the City of Jackson.
7. Prepare detailed hydraulic analysis of the areas within the existing floodplain will be completed to ensure that there is no-rise to the 100-year floodplain as it pertains to the construction of the new pedestrian bridge and the 10-foot-wide trail. A no-rise certificate will be issued to the City of Jackson once the detailed analysis has been completed.
8. Prepare electrical design for the lighting layout along the prosed trail. Design will include meeting with City staff to determine transformer pad locations, conduit sizing, type of typical light pole and fixtures and any other necessary design items the city may require.
9. Prepare detailed engineering plans of the typical 10-foot trail section along a 1.4-mile section of Hubble Creek from West Jackson Blvd. to the City of Jackson Soccer Park (2275 S. Farmington).
10. Prepare detailed construction plans, cost estimate, specifications, and related documents as necessary for the purpose of soliciting bids for constructing the project.
11. Provide the City of Jackson with two sets of 60%, 90% and 100% completed plans, specifications, and cost estimate for the purpose of obtaining construction authorization and review.
12. Upon receipt of construction authorization from the City of Jackson, provide an adequate number of plans, specifications, and bid documents to the City.
13. Provide the City of Jackson with a list of qualified area bidders and assist the City in advertising for bids.
14. Assist the City in evaluating bids and making a recommendation of award to the City of Jackson.

Survey Fee.....$13,500.00

Easement Preparation Fee.....$3,500.00

Geotechnical Fee.....$5,500.00

Preliminary Design Fee.....$4,700.00

Final Design Fee.....$73,800.00

Total Fee.....$101,000.00

TIME OF PERFORMANCE

We currently have the staff available to begin field work on this project within 7 to 12 business days of having the Notice to Proceed. The Engineering will begin upon delivery of the approved topographic survey and anticipate the following timelines for design completion. Timeline does not include time needed to obtain owner or agency approvals. We can look to accelerate some of these if required to meet certain milestones with the owner.

Preliminary Plans and Estimate..... 4 weeks (Concurrent with Survey)
Survey.....4 weeks
Final Design and Specifications (60%) ..... 8 weeks

Final Design and Specifications (90%) ..... 8 weeks (after 60% approval)
Final Design and Specifications (100%) ..... 4 weeks (after 90% approval)
Construction Admin.....As Required

ITEMS NOT PROVIDED UNDER THIS PROPOSAL

1. Any off-site utility extensions or improvements.
2. ALTA Survey
3. Construction As-Builts or Record Drawings
4. Civil Punch List. These services can be provided upon request as Construction Administration.
5. Landscape Plans
6. Material Testing
7. Permit and/or submittal fees, if required

We appreciate the opportunity to assist you with this project and future projects. If you have any questions, please contact me at 573-785-9621. Your signature below will become our Notice to Proceed.

Sincerely,

SMITH & CO. ENGINEERS

Dominic Thompson, PE
Project Manager

William J Cobb, PE
Engineering Manager