

**SUPPLEMENT NO. 1
TO
ENGINEERING SERVICES AGREEMENT
FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS
BETWEEN
THE CITY OF LAWRENCE, KANSAS AND
BLACK & VEATCH CORPORATION FOR NAISMITH VALLEY
INTERCEPTOR SEWER AND ABANDONMENT OF PUMP STATION 8**

The purpose of this Supplement No. 1 is to define additional engineering services requested by the City of Lawrence, Kansas, hereinafter called the Owner, to be provided by Black & Veatch Corporation, hereinafter called the Engineer, for the Naismith Valley Interceptor Sewer and Abandonment of Pump Station 8 contract. This agreement is a supplement to the ENGINEERING SERVICES AGREEMENT FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS BETWEEN THE CITY OF LAWRENCE, KANSAS AND BLACK & VEATCH CORPORATION, dated October 9, 2018.

SECTION I – SCOPE OF SERVICES

Under the terms of Supplement No. 1, the Owner and Engineer agree to modify the scope of services to includes engineering services in connection with the design and bidding phase for the Naismith Valley Interceptor Sewer and Abandonment of Pump Station 8 as described in Exhibit A to this Supplement No. 1.

SECTION II – COMPENSATION

As compensation for the additional services required as described in Supplement No. 1, the Owner agrees to pay the Engineer an amount equal to the Engineer's salary billings plus reimbursable expenses at cost, and subcontract billings at cost, up to a maximum of \$329,938. This supplement shall increase the total maximum billing limit to \$448,363.

Billing procedures and all other items pertaining to compensation remain as described in Exhibit B of the Original Agreement.

SECTION III – OTHER MATTERS

It is mutually agreed and understood that all terms of the original Agreement, not specifically revised by this Supplement No. 1, shall remain unchanged and in full force.

IN WITNESS WHEREOF, the parties have executed this Supplement No. 1 on this _____ day of _____, 2019.

City of Lawrence, Kansas

Owner

By _____

Title _____

Date _____

Attest

By _____

Title _____

Date _____

Black & Veatch Corporation

Engineer

By _____

Title _____

Date _____

**EXHIBIT A
TO
SUPPLEMENT NO. 1 TO ENGINEERING SERVICES AGREEMENT**

City: City of Lawrence, Kansas; "City"
Consultant: Black & Veatch Corporation; "Consultant"
Project: Naismith Valley Interceptor Sewer and Abandonment of
Pump Station 8

DESCRIPTION OF SCOPE OF SERVICES

The scope of services for this project includes engineering services in connection with the design and bidding phase of the Naismith Valley Interceptor Sewer and Abandonment of Pump Station 8 Project.

Improvements to be completed under this Agreement are those identified in City of Lawrence, Kansas Request for Proposal R1810, and are summarized as follows:

- Verification of required sewer capacity,
- Alternative relief sewer alignment screening,
- Design of interceptor relief sewer,
- Demolition plans for the abandonment of Pump Station 8.

The following defines the Scope of Work for this Exhibit A.

PHASE 100 – PROJECT CONTROLS AND ADMINISTRATION

- A. The Project Manager will monitor progress on the project. Reports on work completed, budget status, and adherence to schedule will be provided to the City on a monthly basis. The anticipated design schedule is ten (10) months from Notice to Proceed through Bidding Phase Services.
- B. Consultant will prepare agenda for all meetings with City and will provide this agenda electronically seven (7) days prior to meetings. Consultant will prepare meeting minutes to document all meetings with City and will provide these minutes electronically within seven (7) days of the meeting.
- C. QA/QC PLAN, WORK FLOW MODEL, PROJECT EXECUTION, HEALTH AND SAFETY PLAN

PHASE 200 – PRELIMINARY DESIGN (Completed/Not Used)

PHASE 300 – FIELD INVESTIGATIONS

A. SURVEYING

1. Property and Existing Right-of-Way (ROW) Surveys. Provide, through a subcontract, property and existing ROW surveys, including defining property requirements and developing a record survey with legal descriptions of the property takes. Obtain plans, compute and relate the position of landowner project boundary and easement lines to the property corners and control points found. Field property information and property corners will be obtained for a 100-foot width area along the alignment.
2. Surveys and Utility Location. Provide, through a subcontract, field run topographic surveys of the Pump Station #8 site, construction office area, connection structures and pipe alignment. It is assumed the Pump Station #8 site and construction office area will be less than two acres. Survey limits along the pipeline are assumed to include a 7,000 feet long by 100 feet wide area (50 feet from centerline on each side of the alignment). Field surveys will include all planimetric features, breaklines, and sufficient ground data to compile accurate mapping at a scale of 1"= 20' with 1 foot contours. Field run surveys will include all surface features of underground utilities, including pipe sizes, material and invert elevations for all gravity sewer and drainage systems. Up to ten (10) utility locates requiring vacuum excavation may be performed on the project.

Surveyor is to coordinate with the Geotechnical Engineer for this project. Survey coordinate locations and vertical control at each boring site prior to drilling to ensure borings are being drilled within ROW or City owned easements. Boring elevations will be surveyed following installation for vertical control.

B. GEOTECHNICAL INVESTIGATIONS

1. Provide, through a subcontract, geotechnical engineering services that will execute field and laboratory investigations and perform the geologic mapping, drill test borings and complete testing required to characterize the subsurface soil, rock and groundwater conditions. Investigations will provide the information necessary to establish design criteria. A total of sixteen (16) borings are planned to depths approximately 5 feet below the invert of the alignment. This assumes a boring every 500 feet and one boring at each end of the 23rd street crossing

It is assumed that subsurface contamination will not be encountered during this investigation and the assessment of soil or groundwater contamination and its impact on proposed construction is beyond the present scope of work. However, if the Hazardous Materials and Contaminated Sites review being

completed in this scope of work indicates that contamination may be present along the alignment, the City will be notified and the geotechnical investigation will be modified with City's approval to sample for soil or groundwater contamination.

The soil boring investigations include coring of the street section at boring locations to be conducted in the street. For budgeting purposes, it is assumed up to 3 locations along the selected sewer alignment will be needed to determine the existing pavement section and materials (surface and sub-base). After completion, the pavement cores will be filled in accordance with the Geotechnical Investigations Procedure for Sewer Separation Projects.

Geotechnical Engineer will coordinate with the surveyor for this project. Geotechnical Engineer to coordinate preliminary locations at each boring site prior to drilling to ensure borings are being drilled within ROW or City owned easements. Geotechnical Engineer to coordinate the final locations to establish location and vertical control of borings.

2. Geotechnical Engineer will summarize the probe locations, testing, analysis, and recommendations in a draft report. Consultant will comment on the report and Geotechnical Engineer will revise and submit copies of the final report to the Consultant. One hard copy of the final report will be submitted to the City.
 - i. The geotechnical report shall discuss the general soil and ground water conditions underlying the site; present the relevant engineering properties of the existing soils; provide excavation and earthwork recommendations including minimum setbacks from adjacent structures; evaluate feasibility of pipe boring/tunneling across 23rd Street; and recommend design criteria and parameters for pipe bedding, pavements, and other earth supported improvements.

C. EASEMENT ACQUISITION

1. Rights-Of-Way. Determine ROW and easements required for the proposed alignment. Provide, through a subcontract, ROW drawings for each property accompanied by a written metes and bounds description of the rights-of-way together with copies of applicable deeds. It is assumed that up to sixteen (16) temporary or permanent easement documents will be necessary. Using these documents, City will be responsible for obtaining the easements and land required for the project.

Include computations of horizontal and vertical control data necessary to provide a control survey traverse line and bench marks for other survey items. Include off-site work as necessary to adequately establish alignment control.

Include field surveys to locate existing property corner markers, subsequent office computations and position analysis, and preparation of a property base map in the digital database.

Submit ten (10) copies of the ROW Exhibits and easement descriptions to City for review. One meeting with the sub-consultant and the City at City's offices to review the draft

D. PERMITS, ENVIRONMENTAL CONSIDERATIONS and APPROVALS

1. Assist the City with coordinating agency reviews and acquiring permits:

- Kansas Department of Health and Environment (KDHE)
- Kansas Department of Agriculture, Division of Water Resources
- Army Corps of Engineers, Section 404 permit coordination
- U.S Fish & Wildlife Service
- Kansas Department of Wildlife, Parks, & Tourism
- Kansas State Historical Preservation Office
- Migratory Bird Treaty Act
- Construction Permits

Assist City with permit applications by preparing design packages for submittal to agencies, meeting with agencies to receive comments, providing written responses to comments, incorporating comments into the design documents, and providing technical input into permit applications. Up to five (5) meetings have been anticipated through detail design and bid phase during the permit and approval process. City will be responsible for actually submitting signed applications and obtaining permits. Consultant through City will address questions and comments. Permits will be provided in the bid documents.

Consultant will maintain an updated register of permits and report on the progress and concerns.

E. UTILITY AND STAKEHOLDER COORDINATION

1. Assist the City with utility coordination with the following utilities:

- Black Hills and Southern Star Energy (Gas)
- Westar Energy (Power: Overhead and underground)
- Verizon (Fiber)
- Midco (Cable)
- AT&T (Cable)
- City of Lawrence (Streets, Storm Sewers, Water)
- Water (City of Lawrence)

2. Assist the City with stakeholder coordination:
 - Parks department
 - University of Kansas
 - Businesses located along selected alignment
 - Kansas Department of Agriculture, Division of Water Resources
 - Army Corps of Engineers, Section 404 permit coordination
 - U.S Fish & Wildlife Service

Assist City with alignment figures for submittal to utilities and stakeholders, conducting meetings with utilities and stakeholders to receive comments, providing written responses to comments and incorporating comments into the design documents. Up to five (5) meetings have been anticipated through detail design.

PHASE 400 – CONTRACTOR CONSTRUCTABILITY REVIEW

A. CONSTRUCTABILITY MEETING and SITE VISIT

1. Consultant will conduct up to two (2) one-half (1/2) day constructability review meetings and site visits with Contractors familiar with working in Lawrence, KS and who typically construct sewer interceptors. The City and Consultant will identify and agree on two (2) Contractors who will be invited to participate in a review meeting and workshop. The goal of the meeting will be to review the recommended alignment and identify potential risks, review construction methods and discuss cost saving alternatives. It is anticipated that each constructability meeting and site visit will include the City's engineering and operation and maintenance staff, representatives from one contractor and up to three (3) staff from the Consultant.
2. Consultant will develop and distribute meeting minutes to document contractor discussions and concerns identified during the constructability review meeting and field visit.

PHASE 500 – DETAILED DESIGN

A. CONSTRUCTION CONTRACT DOCUMENTS

Prepare detailed drawings and specifications and other contract documents for the Naismith Valley Interceptor Sewer and Pump Station #8 Abandonment work. The detailed design will follow the recommendations of the Phase 200 Preliminary Design Memorandum. A total of approximately 50 drawings are anticipated in the final set of documents.

The documents shall be prepared for selection of private construction contractors on a competitive bid basis. Specific Detailed Design services to be performed by Consultant for each Task area as follows:

1. Level 1 (60%) Construction Contract Documents. Level 1 design shall commence only after City has accepted the Preliminary Design Technical Memorandum.
 - a. Level 1 progress review meeting deliverables for each Task are as follows:
 - Contract front end-documents
 - General plan layout
 - Plan and profile
 - Pump Station #8 Demolition plans and sections
 - Traffic control detour plan
 - Commodity specifications
 - Constructability review
 - Opinion of probable construction cost
 - Internal quality control review and refinement before delivery to City
 - Quality assurance and quality control plan and log update
 - Project schedule update
 - Project trend register update
 - Geotechnical investigations Draft Report

Provide three (3) hard copy sets and one (1) electronic copy of documents for City review. Plan sets will be on 11 x 17 inch size paper at half scale.
 - b. Conduct internal QA/QC. Conduct an internal quality assurance/quality control review of the 60% documents.
 - c. Attend one (1) meeting with City to receive and discuss City's review comments.
 - d. Revise documents as necessary to reflect decisions made at this level.
2. Level 2 (90%) Construction Contract Documents. Level 2 design shall commence only after City has accepted Level 1 deliverables.
 - a. Level 2 progress review meeting deliverables for each Task are as follows:
 - Final review set of CAD drawings

- Final review set of specifications and construction contract documents
- Geotechnical investigations Final Report
- Opinion of probable construction cost update
- Constructability review
- Internal quality control review and refinement before delivery to City
- Quality assurance and quality control plan and log update
- Project schedule update
- Project trend register update

Provide three (3) hard copy sets and one (1) electronic copy of documents for City review. Plan sets will be on 11 x 17 inch size paper at half scale.

- b. Conduct internal QA/QC. Conduct an internal quality assurance/quality control review of the 90% documents.
 - c. Attend one (1) meeting with City to receive and discuss City's final review comments.
 - d. Revise documents as necessary to reflect decisions made at this level.
3. Final (100%) Bid Set Documents. Final bid set updates shall commence only after City has accepted Level 2 deliverables.
- a. Prepare and submit final drawings and specifications for bidding purposes.
 - b. Update opinion of probable construction cost, schedule, and trend register.
 - c. Provide three (3) hard copy sets and one (1) electronic copy of documents for City. Final plan sets will be on 22 x 34 inch size paper at full scale.
4. Opinion of Probable Construction Cost. Prepare updates to the opinion of probable construction cost for the proposed work presented with the Design Memorandum at Level 1, Level 2 and at Final Design.

All opinions of probable construction costs developed will follow the recommendations of the Association for the Advancement of Cost Engineering (AACE) International Recommended Practice No. 18R with regard to methodology and accuracy. Since Engineer has no control over the cost of labor, material, or equipment furnished by others not under contract to Engineer, Engineer's opinion of probable cost for construction of the work will

be made on the basis of experience and qualifications as an Engineer. Engineer does not guarantee or warranty that proposals, bids, or actual project costs will not vary from Engineer's opinions of probable cost. The cost opinion level of accuracy presented by Engineer will be in accordance with accepted industry guidelines and as defined by AACE. The cost opinion will be of Class 2 accuracy for the opinions based on the Level 1 and Level 2 documents and of Class 1 accuracy for the opinion based on the Final documents.

PHASE 600 – BIDDING PHASE

A. BID PHASE SERVICES

1. Coordinate bids letting date, time, and place with City and prepare final Invitations to Bid. Provide electronic files to Drexel Technologies for distribution to prospective bidders.
2. Conduct, at a date and time selected and a place provided by City, a pre-bid conference.
3. Interpret construction contract documents. Prepare and issue addenda to the construction contract documents when required. Two (2) addenda are anticipated.
4. Review and evaluate the qualifications of the apparent successful bidder and the proposed major or specialty subcontractors, including review of bids for completion. The review and evaluation will include such factors as work previously completed, equipment that is available for the work, financial resources, technical experience, and responses from references. Prepare and distribute formal bid tabulation sheet, evaluate bid, and make written recommendation to City concerning contract award.
5. Activities to be completed during preparation of conformed documents will include review of contractor's bonds, furnishing the Contractor unsigned construction contract documents, and transmitting the construction contract documents to City for signature and distribution.

PHASE 610 – CONSTRUCTION PHASE SERVICES

Scope and costs for performing project administration services during construction will be defined later by Supplemental Agreement.

PHASE 800 – ADDITIONAL SERVICES

- A. Any work requested by City that is not included in one of the items listed in any

other phase will be classified as additional services.

B. Additional services shall include, but are not limited to:

1. Detailed design of utility, roadway, sidewalk or park improvements not included in the above scope of services.
2. Additional geotechnical investigations as requested by the City.
3. Additional environmental investigations as necessary for determining proper soil and groundwater disposal.
4. Additional sub-surface utility explorations as requested by the City.
5. Additional development of ROW documents as requested by the City.
6. Additional surveying within the project area as requested by the City.
7. Condition assessment of the existing sanitary sewer to confirm or supplement data previously collected by the City.
8. Additional meetings with local, State, or Federal agencies to discuss the project.
9. Appearances at public hearings or before special boards.
10. Additional coordination for bat survey or other T&E field survey as required by USFWS would require additional coordination and request for proposals for T&E Species Survey Consultant.
11. Additional coordination for a Phase 1 cultural resource field survey with shovel testing as required by KSHS-SHPO would include additional coordination and request for proposals for an Archeological Survey Consultant.
12. Special consultants or independent professional associates requested or authorized by City.
13. Assistance with bid protests and rebidding.
14. Preparation for litigation, arbitration, or other legal or administrative proceedings; and appearances in court or at arbitration sessions in connection with bid protests, change orders, or construction incidents.
15. Park Improvement Tasks
 - a. Through a sub-consultant research and apply for grant funding that

could be utilized to provide additional amenities to the park. These amenities would include park benches, water fountains, and additional plantings.

- b. Through a sub-consultant review the opportunity to reuse the existing Pump Station 8 parcel for a small park with a playground. This would include investigation into funding sources, playground options, and cost estimates.

CITY'S RESPONSIBILITIES

The City will furnish, as required by the work and not at the expense of the Consultant, the following items:

1. All maps, drawings, reports, records, audits, annual reports, and other data that are available in the files of the City and which may be useful in the work involved under this contract.
2. Coordination of other City agencies.
3. Obtaining required temporary and construction easements from property owners.
4. Conduct legal advertisement, distribution of plans/specifications, bidding, and award of the project.
5. Inspection of materials, laboratory and field testing, field sampling services.

**EXHIBIT B
TO
SUPPLEMENT NO. 1 TO ENGINEERING SERVICES AGREEMENT**

City: City of Lawrence, Kansas; "City"
 Consultant: Black & Veatch Corporation; "Consultant"
 Project: Naismith Valley Interceptor Sewer and Abandonment of
 Pump Station 8

FEE SCHEDULE

1. For services as described in Exhibit A - Scope of Work, an amount equal to the Engineer's salary billings plus reimbursable expenses and subcontract billings at cost. The maximum billed for these services shall not exceed **\$329,938** without further authorization.
2. Compensation for personnel used in the performance of engineering services shall be in accordance with the following hourly rates.

Black & Veatch Job Classification	2019 Hourly Billing Rate
Principal in Charge	\$260
Project Director	\$245
Project Manager	\$215
Project Control Specialist	\$126
Project Secretary	\$83
Engineering Manager	\$175
Civil Engineer Level 6	\$198
Civil Engineer Level 5	\$174
Civil Engineer Level 4	\$148
Civil Engineer Level 3	\$136
Civil Engineer Level 2	\$122
Civil Designer	\$113
Graphics Supervisor	\$185
Graphic Technician, Senior	\$148
Graphic Technician 3	\$115
Graphic Technician 2	\$105
Graphic Technician 1	\$85
Tunnel Design Specialist	\$230
Tunnel Design Engineer	\$170
Senior Geotechnical Engineer	\$195
Geotechnical Engineer	\$168

Permitting/Wetlands Specialist	\$160
Estimator	\$195
Constructability/Quality Control	\$214
Resident Engineer	\$150

3. Compensation for reimbursable expense items and other charges incurred in connection with the performance of the work shall be in accordance with the following schedule:

Expense Item	Unit Cost
Travel, Subsistence, Relocation, and Incident Expenses	Net Cost
Automobile/Motor Vehicles – Local Mileage	Net Cost
Automobile/Motor Vehicles – Rental	Net Cost
Telephone and Telegraph Costs	Net Cost
Day to Day Reproduction of Reports and Drawings	Net Cost
Postage & Shipping Charges of Job-Related Materials	Net Cost
Photograph and Video Reproductions	Net Cost
Major Reproduction for Submittals & Bidding	Net Cost
Sub-Consultant Fees	Net Cost

4. The Schedule of Hourly Billing Rates and Charges indicated herein is effective as of April 5, 2019. The schedule of Hourly Billing Rates and Charges will be revised and re-issued each April 5th for each subsequent year.

**EXHIBIT C
TO
SUPPLEMENT NO. 1 TO ENGINEERING SERVICES AGREEMENT**

City: City of Lawrence, Kansas; "City"
Consultant: Black & Veatch Corporation; "Consultant"
Project: Naismith Valley Interceptor Sewer and Abandonment of
Pump Station 8

PROGRESS REPORT

**Monthly Naismith Valley Interceptor Sewer and Abandonment of Pump Station 8
 Project Progress Report
 Lawrence, Kansas**

Date: _____

Completed Tasks through [Previous Month]	Anticipated Tasks for [Next Month]
<u>Actions/Issues</u>	<u>Budget Status</u>
<u>Decisions Needed</u>	

EXHIBIT C

**EXHIBIT D
TO
SUPPLEMENT NO. 1 TO ENGINEERING SERVICES AGREEMENT**

City: City of Lawrence, Kansas; "City"
Consultant: Black & Veatch Corporation; "Consultant"
Project: Naismith Valley Interceptor Sewer and Abandonment of
Pump Station 8

TARGET SCHEDULE

**EXHIBIT E
TO
SUPPLEMENT NO. 1 TO ENGINEERING SERVICES AGREEMENT**

City: City of Lawrence, Kansas; "City"
Consultant: Black & Veatch Corporation; "Consultant"
Project: Naismith Valley Interceptor Sewer and Abandonment of
Pump Station 8

STANDARD INVOICE REQUIREMENTS

- A. Invoice shall identify Project Number and Name, and City Purchase Order Number.
- B. Individual Staff to be identified by Name and Title with itemized hours billed.
- C. Copies of Subconsultant invoices and reimbursable expenses to be included for items billed on the invoice.
- D. Invoice shall provide an accounting of Contract Total; Amount Previously Invoiced; Current Invoice Amount; Amount Remaining on Contract.

**EXHIBIT F
TO
SUPPLEMENT NO. 1 TO ENGINEERING SERVICES AGREEMENT**

City: City of Lawrence, Kansas; "City"
Consultant: Black & Veatch Corporation; "Consultant"
Project: Naismith Valley Interceptor Sewer and Abandonment of
Pump Station 8

DESIGN CRITERIA

**EXHIBIT G
TO
SUPPLEMENT NO. 1 TO ENGINEERING SERVICES AGREEMENT**

City: City of Lawrence, Kansas; "City"
Consultant: Black & Veatch Corporation; "Consultant"
Project: Naismith Valley Interceptor Sewer and Abandonment of
Pump Station 8

CAD REQUIREMENTS

1. Project drawings shall be developed by the Consultant through the use of a Computer-Aided Drafting (CAD) System or Geographic Information System (GIS) and made available to the City on digital media (see item #3 below). However, due to the potential that the information set forth on the digital media can be modified by the City, or the City's Consultants, intentionally or otherwise, the Consultant shall remove all indices of its ownership, professional corporation name, seal, and/or involvement from each digital display. For documentation purposes, two sets of an original digital media and two (11" x 17" size or larger) duplicate paper sets will be prepared. One set will be given to the City and one set will be retained by the Consultant.
2. Software Requirement: CAD files shall be submitted in AutoCAD (Version 2013 or later preferred) DWG or DXF file format. Any referenced (XREF) files or tables shall be "inserted" into the CAD file or must accompany the CAD files on the submitted disk.
***NOTE: A LAYER LIST FOR EACH PROJECT SHALL ACCOMPANY THE DIGITAL MEDIA.** GIS files shall be provided to the City in ESRI Arc GIS 9.3 format
3. Acceptable Digital Media: Compact Disk or DVD. *Note: Media will not be returned to the consultant.
4. Compression Utilities: If a compression utility is used, save files(s) as "self-extracting" file(s).
5. Ensure that all objects are on their proper layers.