ATTACHMENT "A"
SCOPE OF SERVICES

Crackerneck Creek - Stream Stabilization Improvements
Independence, MO

This scope of services describes the items and tasks required for completion of final design and bid related services for stream stabilization projects within the Crackerneck Creek watershed in Independence, Missouri. The project area includes the following locations, as described in more detail within the "Crackerneck Creek Watershed Geomorphology Study – Phase 1" (Olsson March 2023):

- Crackerneck Creek (89+25)
- Tributary 2 (13+40)
- Tributary 2 (42+25)
- Tributary 2 (64+75)
- Crackerneck Creek (146+00)
- Tributary 3 (11+50)

The work tasks will be performed by Olsson Inc ("Olsson") for the City of Independence, Missouri ("city").

Olsson shall be fully responsible for the professional quality, technical accuracy, readability, and completeness including coordination of designs, drawings, and specifications as is ordinary possessed and exercised by a professional consultant in the same community under similar circumstances. If Olsson fails to meet the foregoing standard, Olsson will perform at its own cost, and without reimbursement from the city, the professional services necessary to correct errors and omissions which are caused by Olsson's failure to comply with the above standard. Prior to each submittal of plans to the city for review, Olsson shall provide quality control on the plans by the project manager. A letter is required from Olsson's project manager to the city, stating that the final plan quantities have been calculated and checked for accuracy to the best of the firm's ability. The professional services, necessary to correct errors and omissions during construction, shall include any data, property descriptions, surveying, plans, designs, and specifications. Olsson shall provide such services as expeditiously as is consistent with professional performance.

General Design Requirements
Olsson shall furnish and perform the various professional duties and services required for the construction of the project as outlined in this scope. All plan development stages shall be completed no later than the current project's schedule, exclusive of delays beyond Olsson's control.

Olsson shall design the project in conformity with the most current version of the following criteria:

- City's Public Works Design Standards (Updated: May 2021)
- APWA 5600 design criteria.
- The current version of the Manual on Uniform Traffic Control Devices (MUTCD) as adopted by the city.

The design plans shall be signed and sealed by the licensed professional engineer responsible for the preparation of the design plans. Right-of-way and easement descriptions shall be signed and sealed by a Missouri Registered Professional Land Surveyor responsible for the preparation of these descriptions.

General Survey Requirements
Vertical Control: Elevations for plans must be obtained from a benchmark on the MoDOT Vertical Control Network. Benchmark and elevation data will be included on the plans.

Horizontal Control: Section corner and quarter section corner locations must be referenced to the MoDOT Horizontal Control Network. As part of the survey all section corners and quarter section corners within the project area and others used for the project control must be located, referenced and state plane coordinates determined with GPS equipment. The coordinates and referenced ties shall be shown on the plans and the standard corner reference report submitted to the State Historical Society, the County Engineer and city's project engineer with 30 days of the survey as required by state law.

Plan Notes - Any benchmarks, horizontal control monuments and any section corner and quarter section corners within the area surveyed for the project must be conspicuously indicated on the plans. All benchmarks and section and quarter section corners and property pins within the construction limits shall include a note for the re-establishment of the monuments.

Phase 100 – Project Management and Coordination

Task 101 – Project Kickoff Meeting
Attend a kick-off meeting with city representatives to introduce the project team (two Olsson staff will attend), confirm the project extents, and review the design criteria and overall project schedule.

Task 102 – Design Schedule
Develop detailed design schedule for the entire project and discuss at the project kickoff meeting. Provide schedule updates at project progress communications. Include at least the following major project milestones in the schedule:

- Survey complete.
- Utility coordination meetings.
- Public involvement meetings.
- Preliminary plans submitted for review.
- Easement/Right-of-way documents to city.
- Final plans submitted for review.
- Project ready for bid.

Task 103 – Project Management
Prepare monthly project progress reports and invoices.

Phase 200 – Field Data Collection

Task 201 – Field Survey

Olsson will complete a Unmanned Aerial Vehicle (UAV) Lidar Survey of the project locations later this fall when the leaves are off the vegetation.

Intent: Generate a Digital Terrain Model (DTM) from LiDAR data collected by a high precision LiDAR sensor mounted to an Olsson UAV platform. This DTM will be tested for accuracy using survey validation points to ensure it meets the national mapping accuracy standards for 1-foot contours.

Project Supervision: The UAV LiDAR Survey will be conducted under the supervision of a professional land surveyor and certified commercial UAV pilot.

Client Responsibility: The Client will provide access to the site and permit the use of UAV's above the property.

Units: The survey units shall be US Survey Feet.

Coordinate System: Horizontal coordinates shall be based on the State Plane Coordinate System scaled to ground. Vertical coordinates shall be based on the North American Vertical Datum (NAVD88) using GEOID 12A CONUS.

LiDAR Point Cloud Classifications: The LiDAR point cloud will be separated into the following levels Vegetation, Structures, Ground, and Noise.

LiDAR Point Colorization: Aerial photos collected by the UAV will be used to colorize the LiDAR point cloud.

Validation Points: The DTM will be tested for accuracy using check points for non-vegetated areas.

DTM Vertical Accuracy: The targeted Vertical Accuracy Class will be 5 cm for non-vegetated areas as defined by ASPRS Mapping Standards.

Contour Interval: The contour interval shall be 1-foot.

Deliverables:

- AutoCAD .dwg file
- Digital Terrain Map and contours at 1-foot intervals
- Orthorectified aerial image with 3"/pixel resolution.

Olsson shall survey the project with the city supplying Olsson with benchmark records as near to the project location as possible. Olsson shall set any other needed permanent benchmarks for the project. All vertical datum must be NAVD 88 and tied to the city controls. It is assumed that private property access will be granted so that field survey data can be collected. Olsson will be responsible for notifying private property owners about field survey activities. Specific survey work items included in this scope is as follows:

1. Establish land corners, and horizontal and vertical control.

2. Survey size, type, location, and elevation of all storm sewer and sanitary sewer including pipes, structures, inlets, headwalls, channels, and culverts.
3. Perform topographic survey of entire project area needed for design of the project, including dwellings/structures, sheds, fences, walls, streets, curbs, ditches, sidewalks, decks and patios, size and species of trees 2 inches and larger, shrubs, bushes, landscaping, and property pins.
4. Where there is a group of trees, show the outside limits and label accordingly.
5. Contact Missouri One Call and obtain available mapping from all pertinent utilities for locates of existing utilities and tie then into the topographic survey. Include sizes of utility lines.
6. Prepare survey base map depicting above information, including property lines, ownership and easement dimensions and information.

Task 202 – Ownership and Abutting Property Information

1. Acquire plats and incorporate into the basemap.
2. Obtain ownership information. Olsson shall obtain ownership information from Jackson County's records. The city will provide, from a title company, full ownership and encumbrance reports for each property where easements are required by this project (ownership and encumbrance reports for 20 properties are assumed). Title information will be provided in electronic format.

Phase 300 – Preliminary Design

Task 301 – Geotechnical Evaluation

Olsson to contact Missouri One Call to locate underground utilities. To ensure the safety of the crew on site, Owner must inform Olsson of the location of all private utilities and private utility service connections. The cost of locating private utility lines and private service connections is the Owner's responsibility. Olsson is not responsible or liable for damage to any private utilities or private service connections. Any fees resulting from clearing operations to achieve access to boring locations is Owner's responsibility and not included in this scope of work.

We propose to use an Olsson field crew equipped with hand augers to complete five (5) borings to a depth of 5 feet each. The borings will be advanced to the depths proposed, or to refusal, whichever is shallower. This proposal is based on a total drilling footage of 30 linear feet. Grab samples may be collected from the borings for visual observations. We will obtain groundwater levels in the test borings at the time of drilling and upon completion of the drilling operations. After obtaining groundwater level readings, we will backfill the borings with soil cuttings and sand.
A geotechnical engineering drilling letter will be prepared under the direction of a registered professional engineer based on the findings of the field exploration. The report will include a boring location plan, computer-generated boring logs, and a description of the surface and subsurface conditions encountered at each boring location.

Crackerneck Creek (146+00) Only
We propose to use a truck-mounted drill rig to complete one (1) boring to practical auger refusal on bedrock or 10 feet into shale/limestone plus an additional 15 feet of rock core. Split spoon samples shall be collected from the borings. We will obtain groundwater levels in the test borings at the time of drilling and upon completion of the drilling operations. Upon encountered auger refusal, the borings will be advanced into the bedrock stratum using rock coring

procedures. Once the borings have been completed, each boring will be backfilled auger cuttings.

Laboratory Services
At our laboratory, unconfined compressive strength, moisture content, and in-place unit weight tests will be performed on representative portions of selected Shelby tube samples. Moisture content tests will be performed on all samples. Atterberg limits tests will also be performed upon representative samples of typical subsurface conditions encountered across this site. The rock cores will be photographed and may be broken to determine the unconfined compressive strength of the rock.

Evaluation and Geotechnical Report
A geotechnical engineering report will be prepared under the direction of a registered professional engineer based on the findings of the field and laboratory programs. The report will include a boring location plan, computer-generated boring logs, results of the laboratory testing program and a description of the surface and subsurface conditions encountered at the site. In addition, the report will present our opinions and recommendations regarding recommended foundation design parameters, including bearing pressures and depths for the utility location. Anticipated total and differential settlement of structural elements for the bridge. Seismic site coefficient per the International Building Code and lateral earth pressures

Task 302 – Preliminary Plans

Preliminary plans shall be clearly stamped "preliminary", or otherwise indicated. All plans shall be prepared in accordance with the latest editions, supplements, and revisions of the city's storm drainage design criteria and APWA Section 5600, as adopted. The construction drawings shall be prepared in AutoCAD format. A transmittal letter shall accompany this submittal. The city project number shall be included upon all correspondence. The proposed system will be modeled utilizing the available floodplain mapping completed for the Crackerneck Creek watershed.

1. At a minimum the Consultant shall include the following sheets:
    i. Cover Sheet and General Project Notes
    ii. Watershed Map and Design Data
    iii. General Layout Plan
    iv. Typical Channel Sections
    v. Channel Plan and Profiles
    vi. Bank Stabilization Plans
    vii. Cross Sections
2. Any comments from the City regarding the Concept Design Report shall be incorporated into the preliminary plans.
3. Prepare and submit and preliminary opinion of project costs (OPCC).
4. Conduct a Field Check meeting with City staff.
5. Distribute Plans to utility companies for feedback and notification of the project intent.

Task 303 – Preliminary Submittal and Review Meeting
Olsson shall submit two (2) copies of half-size (11x17-inch) plans and one (1) full size (22x34-inch) set of the preliminary plans and OPCC for formal city review. Following the city review, two (2) Olsson staff will attend a review meeting to go over comments from the city.

Task 304 – Project Permitting
Assess state and federal environmental regulations and permit conditions.

Nationwide permits (NWPs) are general department of army (DA) permits that meet a set of nationwide standards that have minimal individual and cumulative environmental impacts. NWPs are required when jurisdictional aquatic impacts occur related to a project. Olsson will follow the Clean Water Act regulations (33 CFR Parts 320-332) and Section 404(b)(1) Guidelines (40 CFR Part 230). Nationwide permits include a description of the Project, aquatic impacts, threatened and endangered species (desktop evaluation), and cultural resources (desktop evaluation).

Olsson will submit a Clean Water Act, Section 404, NWP pre-construction notification (PCN) to the U.S. Army Corps of Engineers (USACE) for each of the six (6) Project locations within the Crackerneck Creek watershed. Prior to submittal of each NWP PCN, Olsson will complete a site visit at each location to document site conditions and delineate streams, wetlands, and other waters. Olsson's findings will be documented in a single wetland delineation and stream assessment report, which will accompany each NWP PCN. Olsson will submit the permit request to the USACE for permit issuance.

Olsson will follow-up with additional USACE requests within the limitation of the assumptions outlined below.

- Each of the six (6) projects are separate and complete projects, each requiring a separate nationwide permit pre-construction notification.
- All six (6) projects will each qualify for a nationwide permit (individual permit is excluded from this scope of services).
- Each NWP PCN will be submitted using an ENG 6082 form.
- Site visits will be completed during the fall of 2023, with permitting to follow.

1. A land disturbance permit and Stormwater Pollution Prevention Plan is anticipated for the project and included in the scope.
2. Floodplain Development Permit. The Consultant will complete forms provided by the City and provide appropriate information for the City to issue a Floodplain Development Permit for the project.

Phase 400 – Final Design

Task 401 – Final Plans
Final design plans and specifications shall be clearly stamped "Final" or otherwise indicated. A transmittal letter shall accompany this submittal addressing city staff's comments on the preliminary design. The city's project number shall be included upon all plans and correspondence.

Prepare final plans, incorporating all preliminary plan review comments from city staff. At a minimum, the final plans shall include all information from the preliminary plans plus the following detailed design additions:

1. Cover Sheet
2. Watershed Map and Design Data
3. General Layout Plan
4. Project Requirements and Summary of Quantities
5. Easement Plan
6. Typical Channel Sections
7. Channel Plan and Profiles
8. Bank Stabilization Plans
9. Landscape and Planting Plans
10. Cross Sections
11. Construction Details
12. Erosion Control Plan

Task 402 – Project Specifications
Prepare a complete set of contract special provisions and technical specifications to address specific elements of this project. Incorporate the front-end documents provided by the city into a single and complete specifications PDF.

Task 403 – Final OPCC
Prepare a final OPCC for the project to reflect the final plans.

Task 404 – Easement Documents
Describe easements necessary to complete project.

1. Furnish legal descriptions sealed by an RLS licensed in the state of Missouri. Legal descriptions are also to be provided in a digital format compatible with Microsoft Word (20 legal descriptions are assumed).
2. Furnish an ownership and easement spreadsheet to include Owner Name; Owner Address; Site Address and proposed easements to include type and square footage.
3. Prepare permanent and temporary construction easement descriptions and figures in accordance with the city's acquisition requirements.
4. Prepare tract maps (20 tract maps assumed), including.
    - Title block, including a graphical scale and north arrow.
    - Ownership boundaries and information.
    - Existing rights-of-way and easements.
    - Proposed takings identified with text and graphically.
5. Submit 8 1/2 x 11-inch exhibits and legal descriptions of each property required for easement acquisition to the city. Up to 20 properties are included in the scope.

Task 405 – Final Submittal and Review Meeting
Consultant shall submit final plans, specifications, and OPCC as described herein for formal city review, attend one (1) review meeting with city staff, and revise per city criteria and review comments. Two (2) copies of half-size (11x17-inch) plans and one (1) full size (22x34-inch) set of plans will be submitted for review. Following the city review, two (2) Olsson staff will attend a review meeting to go over comments from the city.

Task 406 – Public Meeting
Following city review and updates to the easement documents and tract maps, Olsson will attend a public meeting to discuss the easement documents, tract maps, and project design. Olsson will prepare exhibit boards, drawings, and plans, as necessary. The invitations for this meeting and coordinating a meeting location will be the responsibility of the city.

Task 407 – Utility Coordination
Olsson shall contact and work closely with utilities to determine the locations of existing and planned facilities to be shown on the plans. Olsson shall prepare correspondence to all utility companies at the proper times during the design phase and will provide plans to utilities prior to the utility coordination meeting. This tasks also includes tracking and documenting the progress of utility relocation plans and relocation schedule. With the preparation of final plans, Olsson will schedule a final utility coordination meeting. This meeting will confirm if utilities have successfully relocated or their schedule for completing their relocations.

Task 408 – Project Bid Plans
Upon completion of the easement acquisition phase, Olsson shall incorporate into the drawings the easement acquisition related notes; and then submit construction bid documents, two (2) sets of the full-size bid plans (assuming a maximum of 32 sheets), two (2) half size bid plans, final specifications, and the final OPC. The project bid plans, specifications, and OPC will be updated to address all remaining outstanding review comments. All documents must be signed and sealed by a Missouri Registered Professional Engineer.

Task 409 – Bidding and Construction Services
Olsson will respond to project related technical questions from the city during the bidding and construction phases of the project. Olsson shall also address errors without any additional compensation.

City Responsibilities

The city will be responsible for the following:

- Provide Olsson with pertinent existing studies, record drawings from previous projects (storm sewer, street improvements, sanitary sewer, etc.), GIS shape files - specifically storm sewer, sanitary sewer, streets, parcels, building planimetrics, and project contours, and other available information in the project area.
- **Provide Olsson with benchmark records as near to the project location as possible.**
- **Easement acquisitions from property owners.**
- **Administration of the bidding and construction contract.**
- **Locate the city's water or sewer main horizontally and pothole where appropriate to determine depths of the system.**

Exclusions

The following items are not included with the scope of work. If the City desires to complete these additional services, a supplemental agreement and fee shall be prepared and approved by the City prior to beginning the work.

- FEMA Conditional Letter of Map Revision and Final Letter of Map Revision (CLOMR, LOMR)
- Preparation of USACE Section 404 individual permits. Site visits with the USACE. Agency or client meetings, other than phone calls. Changes in project design or location requiring changes to the NWP PCN. On-site habitat assessment for threatened and endangered species. On-site cultural resources study, survey, or investigation. Permittee-responsible mitigation plan and/or monitoring.
- Sanitary sewer relocation plans or adjustments.
- Phased traffic control plans and detours. An assumption is that full road closures will not be necessary during construction.
- Pre-bid conference.
- Easement staking

ATTACHMENT "B"

Hourly Fee Table
Crackerneck Creek Streambank Stabilization
City of Independence, MO
August 4, 2023

olsson

TASK DESCRIPTIONS	Personnel Classification:	Project Manager	Senior Geotech Engineer	Senior Engineer	Assoc. Engineer	Eng. Technican	Senior Scientist	Assoc. Scientist	Admin. Sec.	RLS Surveyor	Survey Tech.	Survey Crew	Total Hours	Total Fees	Expenses	TOTALS
	Average Hourly Rate:	$225	$170	$210	$130	$110	$185	$125	$85	$180	$115	$165				
Phase 100 - Project Management and Coordination																
Task 101 – Project Kickoff Meeting		4			3								7	$1,290	$60	$1,350
Task 102 – Design Schedule					2								2	$260		$260
Task 103 – Project Management (est. 6 months)		120											120	$27,000		$27,000
Subtotal		124	0	0	5	0	0	0	0	0	0	0	129	$28,550	$60	$28,610
Phase 200 – Field Data Collection																
Task 201 – Field Survey																
Task 202 – Ownership and Abutting Property Information (20 properties assumed)					6					16	20	20	62	$9,260	$12,000	$21,260
Subtotal		0	0	0	12					40	60		112	$15,660		$15,660
		0	0	0	18	0	0	0	0	56	80	20	174	$24,920	$12,000	$36,920
Phase 300 - Preliminary Design																
Task 301 – Geotechnical Evaluation			16		12	16							44	$6,040	$3,000	$9,040
Task 302 – Preliminary Plans					160	50							210	$25,300		$25,300
Structural Design (aerial crossing and encasements)				28	80	80							188	$25,080		$25,080
Task 303 – Preliminary Submittal and Review Meeting					9								9	$1,170	$40	$1,210
Task 304 – Project Permitting (USACE NWP)							20	120	8				148	$18,380	$500	$18,880
Project Permitting (SWPPP and FDP)					24								24	$3,120	$40	$3,160
Subtotal		0	16	28	261	146	20	120	8	0	0	0	599	$77,970	$3,540	$81,510
Phase 400 - Final Design																
Task 401 – Final Plans				40	120	60							220	$30,600		$30,600
Task 402 – Project Specifications				8	24								32	$4,800		$4,800
Task 403 – Final OPCC				2	12								14	$1,960		$1,960
Task 404 – Easement Documents (20 properties assumed)										60	40		100	$15,400		$15,400
Task 405 – Final Submittal and Review Meeting					8								8	$1,040	$60	$1,100
Task 406 – Public Meeting				4	4	6							14	$2,020	$60	$2,080
Task 407 – Utility Coordination				6	24	4							34	$4,620		$4,620
Task 408 – Project Bid Plans				4	40	30							74	$9,340		$9,340
Task 409 – Bidding and Construction Services				4	8								12	$1,880		$1,880
Subtotal		0	0	68	240	100	0	0	0	60	40	0	508	$71,880	$120	$72,000
Total All Tasks		124	16	96	524	246	20	120	8	116	120	20	1410	$203,320	$15,720	$219,040
														TOTAL FEES & EXPENSES		$219,040