PROJECT LIMITS-DRY TURKEY CREEK GRADING AND BANK STABILIZATION

SURVEY LIMITS-75' EACH DIRECTION FROM CL OF STREAM 150' TOTAL WIDTH
NORTH LIMITS-RAILROAD BRIDGE
SOUTH LIMITS-IRON HORSE ROAD

CART PATH CROSSING TO BE REPLACED
CART PATH CROSSING TO BE REPLACED
CART PATH CROSSING TO BE REPLACED
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CART PATH CROSSING TO BE REPLACED
EXHIBIT 'A'

SCOPE OF SERVICES
DRY TURKEY CREEK BANK STABILIZATION AND GRADING 2019

This Scope of Services identifies the tasks and subtasks which Alfred Benesch & Company (the "Consultant") will follow in assisting the City of McPherson, Kansas (the “Client”) in performing design services for the modeling and re-grading of Dry Turkey Creek from Iron Horse Road (south limits) to the south Union Pacific Railroad Right of way line (north limits), approximately one (1) mile in length. The project will include construction documents for the replacement of five (5) golf cart bridges, grading the bank to 3.5:1 slopes or less, seeding, and bank stabilization efforts.

Exclusions:

1. Geotechnical Investigations will not be performed as a part of this contract.
2. Retaining walls and retaining wall design. If it is determined retaining walls are needed an additional fee can be negotiated at a later date.
3. Bridge Design. Effort assumes use of Pre-Fabricated Bridge unit designed by others.
4. It is assumed the City will be completing and assembling the contract documents, advertising, and bidding the project. No bidding services are included in this contract.
5. Preparation of and submittal of a Letter of Map Revision (LOMAR).
6. Construction staking information or Construction Administration Services.
7. Significant design changes from the information provided at the time of scope preparation.
8. It is assumed no railroad coordination will be needed. It is assumed the project will begin south of the existing railroad right of way.

Michael Heigert, P.E. will represent the Consultant as Project Manager in the performance of this agreement. No one else will be assigned to act in this capacity without the Client's prior written approval. The Project Manager shall be responsible for directing and coordinating the consultant’s activities necessary to complete this project. Mr. Heigert is a registered Professional Engineer licensed to practice in the State of Kansas. As part of this contract, Benesch will prepare and submit the following deliverables. Each element will be analyzed to the extent required to produce a meaningful product for the City of McPherson.

DELIVERABLES

Field Check Design Package
Office Check Plans & Specification Package
Final Plans & Specifications
Cost Estimates: Created for Field Check, Office Check, and Final Plans

SCHEDULE

<table>
<thead>
<tr>
<th>Assumed Notice to Proceed</th>
<th>July 8, 2019</th>
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<tbody>
<tr>
<td>Field Check Plans</td>
<td>November 25, 2020</td>
</tr>
<tr>
<td>Office Check Plans</td>
<td>February 3, 2020</td>
</tr>
<tr>
<td>Final Plans &amp; Technical Specifications</td>
<td>April 6, 2020</td>
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Dry Turkey Creek Bank Stabilization | 1
COMPENSATION

Work completed by the Consultant shall be compensated for time and materials with a cost Not-To-Exceed amount of $110,037.00.

SCOPE OF SERVICES

TASK 1 – Concept Development/Project Initiation/Survey

Objective:
This task includes initiating project understanding and communication with team members, collecting pertinent data including survey control as well as developing and documenting a clear direction for the design effort.

Activities:
1. Conduct a survey of the project per Garber Surveying attached scope, establishing a base line for design use, locations of visible utilities and as marked by one-call locates, information requested based on the site visit, and other observable data necessary for the plan development. Survey will be performed by Garber Surveying Service P.A. and their proposal is attached below.
2. Process the field data into usable information in the office and document on plan sheets in preparation for plan development.

TASK 2 – Drainage HEC-RAS Modeling

Objective:
This task will include the efforts necessary to create additional cross sections from Task 1 through the Golf Course and use existing available LiDAR south of Iron Horse Road to Highway 61, insert this information into the existing HEC RAS model created during the Dry Turkey Creek Watershed study and calibrate to determine the existing hydraulic conditions of the stream section. The proposed cross sections will then be inserted to determine change in water elevations during the 10, 25, and 100-year runoff events. Velocities will also be determined to evaluate bank stabilization efforts needed during design. Additional cross sections between Iron Horse Road and Highway 61 are necessary to evaluate potential downstream impacts.

Activities
1. Insert Additional Cross Sections into the existing model and calibrate.
2. Insert proposed cross sections into the model and calibrate.
3. Analyze storm events for the 10, 25, and 100-year storms, determine velocities, and surface water elevation changes from existing conditions.
4. Perform a quality control check by a senior level engineer.
5. Develop a one-page memo to submit to the city discussing the findings.

TASK 3 – Field Check Design Package

Objective:
This task will include the efforts necessary to provide construction documents to Field Check stage. Field Check plans will be delivered to the Client for review and comment. Concurrence that the project is progressing appropriately and meeting the Client’s expectations will be sought. This task will end with a
Activities:
1. Develop title, typical sections, and general notes plan sheets.
2. Develop Horizontal Alignment and Survey Control.
3. Develop Removal Sheets.
4. Develop grading plans
5. General Site Bridge or low water crossing layout (5 Locations). It is assumed the same bridge design or low water crossing will be used at all five (5) locations.
6. General Construction Bridge Layout Sheet [Detailed Bridge design by Others]
7. Bridge Foundation Details
8. Low Water Crossing Details
9. Bridge General Notes and specifications.
10. Develop quantity sheet that includes recap tables and summary of quantities.
11. Develop Cross sections along the stream channel at 50’ intervals and display approximate construction limits.
12. Create an Engineer’s Opinion of Probable Construction Cost. Benesch will calculate construction quantities and develop an Engineers Estimate of Probable Project Costs. An Engineers Estimate of Probable Costs outlines the estimated costs for the construction of the design plan. This estimate is based on construction costs during the year of estimate development. It is possible that the construction process may reveal conditions at the site which could not be anticipated or known, and which could alter the necessary services and actual construction costs. The Consultant has no control over the cost of labor, materials, equipment, or services furnished by others or over the Contractor(s) methods of determining prices, or over competitive bidding or market conditions. Consultant makes no warranty that the Client’s actual Total Project or Construction Costs will not vary from the Consultant’s estimate.
13. Quality Control review of the plan set before delivery to Client.
14. Deliver plans to City for review. Plans will be submitted electronically.
15. Attend one (1) Field Check meeting with the Client.

TASK 4 – Office Check Plan Package

Objective:
Based on comments from the Client during Field Check Review the plans will be modified and brought to Office Check stage. Details and specifications will be added to the construction documents. Easement locations will be confirmed during this task and exhibits will be created for each easement parcel.

Activities:
1. Update plan sheets based on field check comments and design progression.
2. Finalize bridge details.
3. Develop erosion control plans and standard details per KDHE requirements.
4. Insert Standard detail sheets.
5. Update quantity tables and estimate.
6. Write easement legal descriptions for up to two (2) parcels. It is assumed the City will negotiate and bear the costs of any title work or fees required. Any Additional easements required can be completed at a set price per parcel as described in Garber Surveying attached scope of services.
7. Schedule and attend one (1) utility coordination meeting on site with utility companies.
8. Create specifications and special provisions as needed for the project. It is assumed the City of McPherson’s technical specifications will be used. Items that are not covered by the City’s specifications will be then covered by the 2015 Kansas Department of Transportation standard specifications for State Road and Bridge Construction.
9. Quality Control review of the plan sets before delivery to the Client.
10. Submit Office Check plans to Client for review. Plans will be submitted electronically.
11. Develop a presentation and attend one (1) Public Meeting. The meeting will be organized and conducted by the Client.

**TASK 5 – Final Plan Package**

Objective:
This task entails finalizing the design and construction documents based on the Client’s comments.

Activities:
1. Finalize plans based on final comments from Client.
2. Finalize specifications based on final comments from Client.
3. Update quantities and Engineer’s Opinion of Probable Construction Cost.
5. Submit final Plans to Client for concurrence. Plans will be submitted electronically.

**TASK 6 – SHOP DRAWING REVIEW PERMITTING AND PROJECT MANAGEMENT/COORDINATION**

Objective: Under this phase of the contract the Consultant will assist the Client in reviewing shop drawings received from the Contractor prior to construction. The phase will also include the project management and effort to coordinate and deliver the project to meet the Clients expectations.

Activities:
1. Review requested shop drawings received by the contractor. Assumes no more than 16 hours of effort total.
2. Submit to DWR, KDHE, and USACE for review and permitting. The Costs for permit applications are not a part of this proposal and are assumed to be paid directly by the Client. It is assumed that the permits needed will be a NOI from KDHE, a stream modification permit from DWR, and a 404 determination from the USACE. It is assumed the 404 permit from USACE will be covered by a general nationwide permit. The application of an individual 404 permit is not included in this scope of services but if it is determined to be required, fees may be negotiated at a later date for additional services.
3. Attend one (1) City study session to discuss the impacts to the golf course.
4. Project management of the work effort including coordination of team members, and communication with the client on project status or issues.
<table>
<thead>
<tr>
<th>Task</th>
<th>Personnel Hours</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1</td>
<td>Concept Dev/Proc Initiation/Survey</td>
<td>10.00</td>
</tr>
<tr>
<td>Task 2</td>
<td>IRC RSA Modeling</td>
<td>12.00</td>
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<tr>
<td>Task 3</td>
<td>Final Check Plans</td>
<td>12.00</td>
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<tr>
<td>Task 4</td>
<td>Office Check Plans</td>
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<tr>
<td>Task 5</td>
<td>Final Plan Development</td>
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<tr>
<td>Task 6</td>
<td>Shop Drawing &amp; Permitting Services</td>
<td>20.00</td>
</tr>
</tbody>
</table>

**Total Hours = 797.5**

**Total Expenses = $110,037.00**
June 19, 2019

Michael Heigert
Alfred Benesch & Company
3226 Kimball Avenue
Manhattan, KS 66503

RE: Dry Turkey Creek --- McPherson, Kansas

Dear Michael:

This letter constitutes our proposal to provide a topographic design survey for the corridor outlined in your request for proposal “Project Limits” drawing. The scope of work included in this proposal will be in accordance with the provided request for proposal and is generally outlined as follows:

SCOPE OF WORK

Boundary and Topographic Survey

- Provide property boundary lines along the proposed corridor outlined in the request for proposal.
- Indicate recorded easements and rights of way as identified on a current title search for 2 properties located along said corridor.
- Indicate location of roadway, driveways, sidewalks, buildings, ditches, tree and vegetation areas, signs, and other physical features.
- Indicate location of utilities serving the surveyed property, as determined by observed evidence together with evidence from plans obtained from utility companies or provided by client, and markings by utility companies and other appropriate sources (with reference as to the source of information).
- Collect sufficient topographic shots to provide one foot contours for the area of interest;
- Provide creek cross sections at 100’ intervals within project limits.
- Indicate ground topography in order to generate contours at one ft. intervals.
- Provide horizontal control points with NAD 83 Kansas Zone 1502 coordinates and benchmarks in NAVD 88 vertical datum along the project corridor.
- Submit AutoCAD file containing raw survey point data, survey line work features, and property boundaries and associated ownership information. **Note: It is assumed that Benesch will prepare the survey basemap using the survey data provided. Standard Benesch codes will be used for all survey point descriptions. Benesch will provide draft PDF file for review of basemap and a final basemap PDF for final review and surveyor approval.

Daniel E. Garber – Professional Surveyor
Nicholas D. Schmidt -- Professional Surveyor
Caleb G. Rubash – Professional Surveyor
Members: Kansas Society of Land Surveyors
National Society of Professional Surveyors
Proposed Easements

- Prepare legal descriptions and exhibit drawings for proposed easements for approximately 2 properties.
- Provide staking of proposed easements at inter-visible intervals (one time only)

COMPENSATION FOR SERVICES

Boundary and Topographic Survey

Our fee for the outlined boundary and topographic survey scope of work will be a not to exceed fee of Fifteen Thousand, Three Hundred Dollars ($15,300).

Proposed Easements

*Exhibits/Descriptions*
Our fee for the outlined proposed easements scope of work for 2 properties will be $140 per property or a total of Two Hundred Eighty Dollars ($280).

*Staking*
Our fee for the outlined proposed easements scope of work for 2 properties will be $140 per property or a total of Two Hundred Eighty Dollars ($280).

This proposal was prepared under the assumption the project will be completed between July 2019 and November 2019.

Should you have any questions regarding the project or this proposal, please call me at 620-245-4360 or your earliest convenience and I’ll be happy to address them. Thank you for the opportunity to quote our services for this project.

Respectfully,

Nicholas D. Schmidt, PS