CobbFendley

Exhibit A
Scope of Services

October 3, 2019

City of Grand Prairie, Texas
Department of Engineering
206 W. Church St.
P.O. Box 534045
Grand Prairie, TX 75053

Re: 2019 Bridge Rehabilitation Projects

Cobb, Fendley & Associates, Inc. ("CobbFendley") is pleased to propose professional engineering services for the referenced project. CobbFendley's services are to be performed for the sole benefit of the City of Grand Prairie, Texas ("Client"), who shall be responsible for payment of those services. When accepted by the signature of Client's authorized representative, the Authorization and the documents referenced herein shall constitute the entire agreement between Client and CobbFendley ("Engineer") with respect to this project.

CobbFendley will provide the City of Grand Prairie (hereinafter called "City") engineering consulting services for the following items:

- Bridge on Corn Valley Road Boulevard over Kirby Creek (F283-38-001)
  - Remove and replace asphalt overlay on existing bridge and approach slabs
  - Replace approach slabs, both ends
  - Install metal guard rail on top of existing concrete guard rail on bridge
  - Remove and replace and extend guard rail on both sides
  - Install erosion protection wall around existing bridge abutments, both sides
  - Install erosion protection/end treatment at storm sewer outfalls
  - Reset existing curb inlet and storm sewer pipe
  - No slope paving will be placed in the bottom of the channel
  - Reinforce and level the existing pedestrian bridge
  - Construct ADA-compliant ramps and install handrail at pedestrian bridge
  - Evaluate aerial water line crossing and provide details to bolster existing hangers

SCOPE OF SERVICES

A. DESIGN PHASE

1. Prepare design plans in accordance with the standard details and specifications for the City of Grand Prairie, North Central Texas Council of Governments, TxDOT, and USACE.

2. Conduct an on-site project meeting with City staff to determine the City's needs and preferences regarding the bridge and channel rehabilitation.

3. Perform topographic survey of project area.

COBB FENDLEY:_____ CLIENT:_____

4. Provide design plans at the Conceptual (30%), Preliminary (60%), Pre-Final (90%), and Final (100%) phases of design. Each submittal will include:

    a. Conceptual (30%)
        i. Cover Sheet
        ii. Removal Sheet
        iii. Plan Sheet (showing limits of improvements)

    b. Preliminary (60%)
        i. Cover Sheet
        ii. General Notes
        iii. Removal Sheet
        iv. Plan Sheet
        v. Details
        vi. Construction Cost Estimate

    c. Pre-Final (90%)
        i. Cover Sheet
        ii. General Notes
        iii. Quantity Summary
        iv. Removal Sheet
        v. Plan Sheets
        vi. Construction Phasing
        vii. Traffic Control Details
        viii. Erosion Control
        ix. Details
        x. Construction Cost Estimate
        xi. Bid Quantities
        xii. Specifications

    d. Final (100%)
        i. Same as Pre-Final

5. Furnish the City with sealed construction drawings and bid documents in both PDF and AutoCAD format.

B. <u>BID PHASE</u>

1. Provide plans, specifications, and bid documents in PDF format to the City Purchasing Department to be posted on the City website for advertisement. Also provide the bid summary sheets in excel (no formulas) to be posted to the City website.

COBB FENDLEY:_____ CLIENT:_____

2. Assist the City in conducting a pre-bid meeting.

3. Assist the CITY by responding to questions and interpreting bid documents. Prepare and issue addenda to the bid documents as required.

4. Assist CITY in the opening, tabulating, and analyzing the bids received. Review the qualification information and check references provided by the apparent low bidder to determine if, based on the information available, they appear to be qualified to construct the Project. Recommend award of contracts or other actions as appropriate to be taken by CITY.

5. Furnish the following conformed contract documents:

    a. City
        i. Contract Documents -
        ii. Full Size (22" x 34") Plans –
        iii. ½ Size (11" x 17") Plans –
        iv. PDF of Contract Documents and Plans
    b. Contractor
        i. Contract Documents -
        ii. Full Size (22" x 34") Plans –
        iii. ½ Size (11" x 17") Plans –
        iv. PDF of Contract Documents and Plans

C. <u>Construction Phase</u>

1. CobbFendley will endeavor to protect CITY in providing these services however, it is understood that CobbFendley does not guarantee the Contractor's performance, nor is CobbFendley responsible for supervision of the Contractor's operation and employees. CobbFendley shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by the Contractor, or any safety precautions and programs relating in any way to the condition of the premises, the work of the Contractor or any Subcontractor. CobbFendley shall not be responsible for the acts or omissions of any person (except its own employees or agents) at the Project site or otherwise performing any of the work of the Project.

2. Assist CITY in conducting pre-construction conference with the Contractor, review construction schedules prepared by the Contractor pursuant to the requirements of the construction contract.

2801 Network Boulevard, Suite 800 | Frisco, Texas 75034 | 972.335.3214 | fax 972.335.3202 | www.cobbfendley.com
TBPE Firm Registration No. 274 | TBPLS Registration No. 100467

3. Review Contractor's submittals, including, requests for information, modification requests, shop drawings, schedules, and other submittals in accordance with the requirements of the construction contract documents for the Project.

4. Review and sign contractors pay request. CobbFendleys review will be to confirm the quantities installed are reasonable for the phase of the project, retainage is accurate, and mathematical calculations are correct. It is the City's responsibility to field verify the individual quantiles for accuracy as submitted by the contractor.

5. Make visits to the site to observe the progress and the quality of work and to attempt to determine in general if the work is proceeding in accordance with the Construction Contract Documents. In this effort CobbFendley will endeavor to protect the CITY against defects and deficiencies in the work of Contractors and will report any observed deficiencies to CITY.

6. Prepare record drawings in accordance with the information furnished by the City and Contractor reflecting changes in the Project made during construction. Provide 1 set of mylar prints labeled "Record Drawings" to the City.

D. CITY RESPONSIBILITIES

1. The City will provide the following information in a timely manner so as not to delay the services of CobbFendley:

   a. Provide any available design plans, surveys, property information, utility locations, CADD files or any other pertinent information.

   b. The City shall attend meetings and make final decisions on design issues such that questionable matters may be resolved and the Project progress as scheduled.

   c. The City shall provide CobbFendley access to the site and allow access to personnel that have a working knowledge of the facilities within the Project area. If necessary, the City shall make available personnel to assist in the locating of utility lines, if cannot be identified by the Texas One Call system.

E. ADDITIONAL SERVICES

1. Services not included in the description of Scope of Services in this proposal may be provided by CobbFendley. If the City authorizes additional services to be performed by CobbFendley, said services shall be provided in accordance with an agreed upon scope, fee, and schedule between the City and CobbFendley. The following services are not included in this proposal.

COBB FENDLEY:_____ CLIENT:_____

a. USACE permitting, Nation Wide Permitting, Specific Permitting
b. Boundary survey, lot platting, or abstracting the property.
c. ROW and Easement document preparation.
d. Geotechnical investigation or materials testing
e. Hydraulic Analysis of existing or proposed drainage ditch grading.
f. Soil, water, or other environmental testing or environmental assessment of any kind.
g. Subsurface utility exploration.
h. Construction Inspection
i. Any engineering consulting or design services other than those expressly detailed in this proposal.

F. COMPENSATION

1. Compensation to CobbFendley for the Basic Services in the Scope of Services shall be lump sum. If CobbFendley sees the Scope of Services changing so that Additional Services are needed, CobbFendley will notify OWNER for OWNER's approval before proceeding.
2. Other direct expenses are reimbursed at actual cost times a multiplier of 1.15. They include outside printing and reproduction expense, communication expense, travel, transportation and subsistence away from Dallas and other miscellaneous expenses directly related to the work, including costs of laboratory analysis, tests, and other work required to be done by independent persons other than staff members.

Design Services	$53,415
Bidding Services	$5,600
Construction Services	$10,025
Topographic Survey	$4,800
Expenses	$1,000
Grand Total	**$ 74,840**

COBB, FENDLEY & ASSOCIATES, INC.

By: _____

Ted B. Sugg, P.E.
Principal: Regional Municipal Manager

COBB FENDLEY:_____ CLIENT:_____

3.0 Corn Valley Road Bridge

The Corn Valley Road bridge over Kirby Creek is a three-span, concrete pan girder bridge. It is located approximately 1-mile north of Interstate 20 and just over 1-mile east of President George Bush Turnpike.

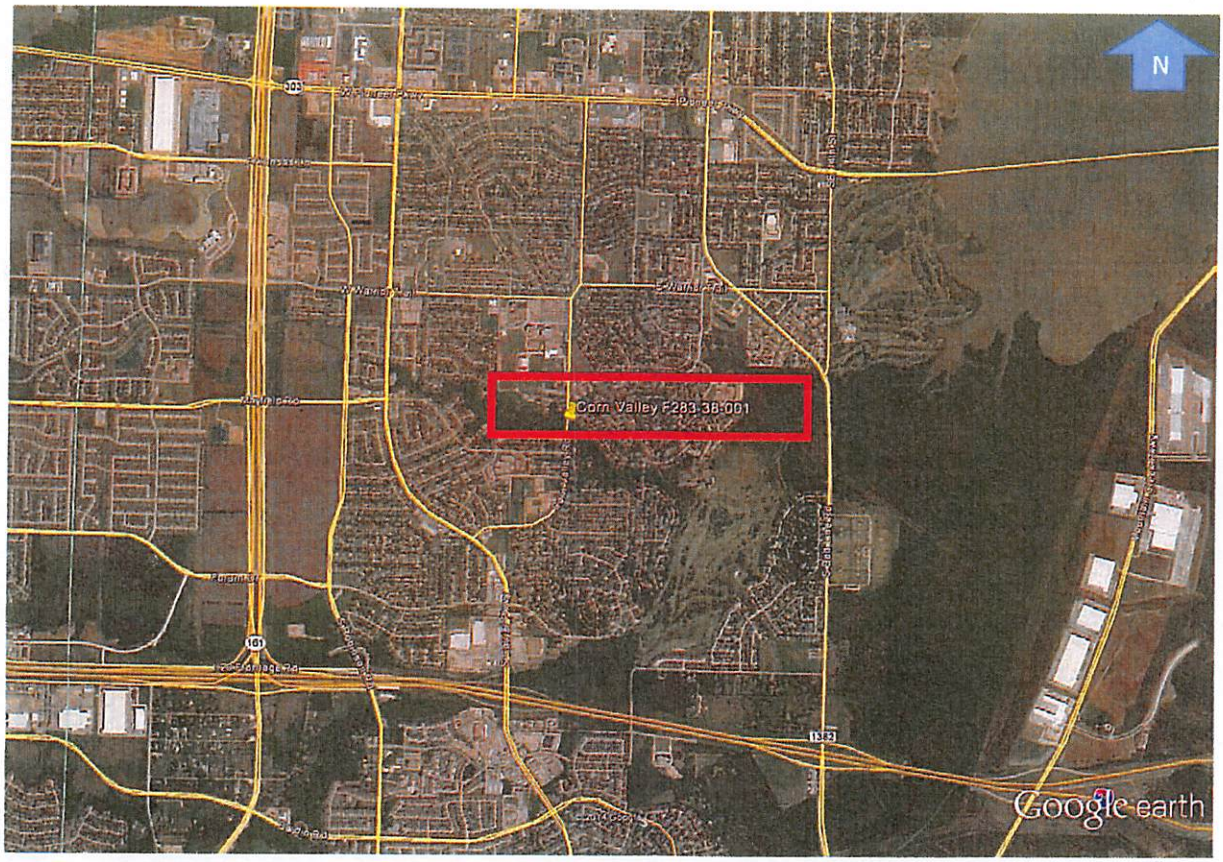

Figure 16: Location of Corn Valley Bridge

3.1 Bridge Observations

The bridge was last inspected September 1, 2011, and received an overall inspection rating of 6.

Deck: The concrete deck is in satisfactory condition and only shows minor hairline cracking consistent with a bridge of this type and age. Several of the form holes located at the midpoint of each span and of each arch between girders are clogged or have minor cracking allowing water to infiltrate the deck instead of passing through the holes. Expansion joints over girder supports are deteriorating and allowing dirt and debris to accumulate in the joints. The approach slabs are failing. The northwest approach slab in particular has completely buckled and multiple layers of HMAC patch are present.

Rail: The steel bridge guard rails do not meet current standards. No MBGF transitions, rail, or end treatments are present. A pedestrian walkway is presently attached to the western side of the bridge and constructed of steel framing with expanded metal mesh walking surface and chain link fence handrail. This

component appears to be in adequate condition but is not ADA accessible. The mesh walkway and the steep approaches at both ends limit accessibility.

Figure 17: Bridge Deck and Walkway (Looking North)

Figure 18: Expansion Material Deteriorating

Figure 19: Form Holes are Inadequately Maintained

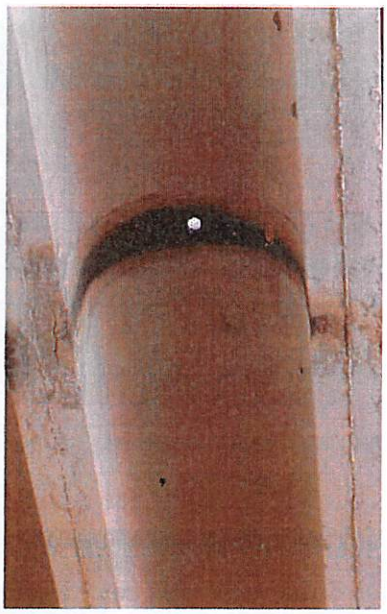

Figure 20: Underside of Arch - Water has begun to Infiltrate the Concrete

Figure 21: No MBGF and Failing Pavement at Northbound Lanes

Figure 22: Broken Approach Slab at Southbound Lanes

Figure 23: Pedestrian Walkway is Not ADA Compliant

Superstructure: The concrete girders themselves appear to be in adequate condition. Minor hairline cracking at midspan of the girders is present in several locations throughout the bridge. Areas of concrete spalling and exposed reinforcement are present in multiple spots.

Substructure: The concrete substructure overall is in fair condition with several areas of concern. At the northwest corner, erosion has undermined the abutment cap and backwall causing the wingwall to separate from the backwall. This erosion and separation has also caused the approach slab to fail and buckle. Adjacent to the approach slab, a concrete curb inlet has also suffered vertical translation due the erosion causing loss of support. A steel ramp has been added to access the pedestrian walkway but remains out of compliance with ADA standards. Additionally, concrete is spalling and reinforcement is exposed at several locations along the interior bent caps and the abutment caps.

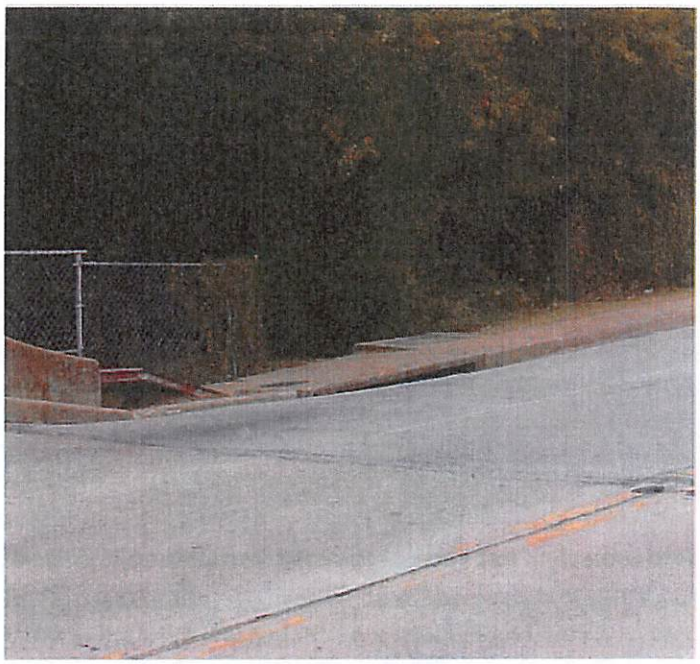

Figure 24: Failed Approach Slab and Curb Inlet due to Loss of Support

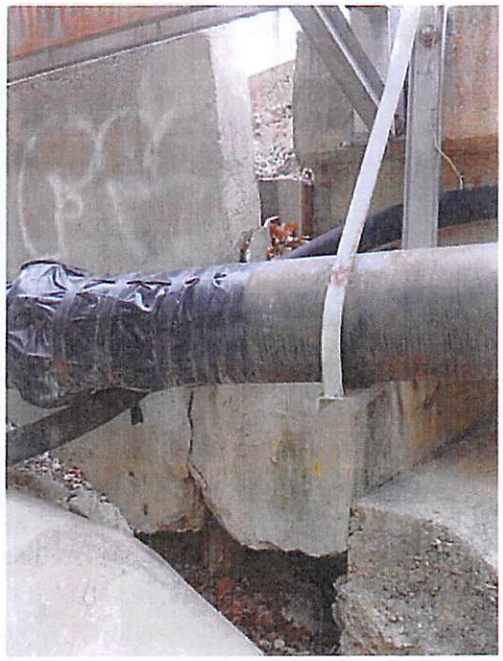

Figure 25: Separation of Wingwall from Abutment Backwall due to Undermining

Figure 26: Concrete Columns and Bents in Satisfactory Condition

Channel & Approaches: Attempts to stabilize both sides of the channel are apparent and is in good condition. The erosion at the northwest side of the abutment is not being controlled by the existing measures. Areas of loose stone have washed into the channel and are collecting debris. Erosion at the channel bottom has exposed concrete encasement or duct bank. The RCP storm outfall for the curb inlet near the northwest aproach slab is almost buried to the the pipe's crown.

Figure 27: Grouted Rock Riprap at East Side of Bridge

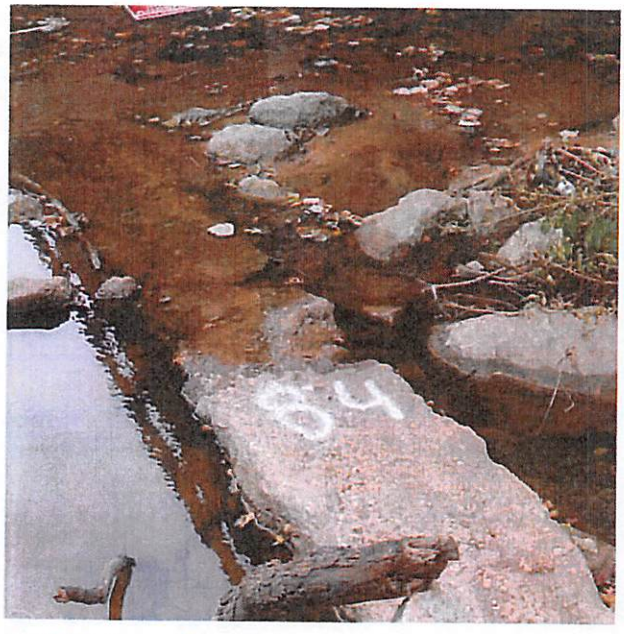

Figure 28: Exposed Concrete Encasement

Figure 29: Buried RCP Pipe and Loose Rock Riprap

3.2 Recommendations

The 4-lane bridge will allow phased construction without having to close the road completely to traffic. The approach slabs and the inlet need to be replaced. The bridge rails shall be replaced and new MBGF added. The approaches to the pedestrian walkway shall be made ADA accessible and the pedestrian bridge repainted. The following summarizes the rehabilitation work recommended for this bridge:

Roadway:	Mill existing asphalt at both sides of bridge and repave
Approaches:	Approach slabs shall be removed and replaced
Bridge Deck:	Clean, blow out, and reseal expansion joints
Rail:	Remove existing rail and install new steel or aluminum guard rail. Install new MBGF, transitions, and terminals.
Substructure:	Remove loose and spalled concrete and rub/fill those areas with polymer-modified concrete.
Channel:	Provide additional stabilization measures as necessary (concrete and rock rip-rap).
Miscellaneous:	Re-set existing curb inlet and associated pipe. Construct proper headwall/end treatment at pipe outfall. Place additional encasement around existing utility crossing. The pedestrian walkway should be reconstructed with ADA-compliant ramps and handrails and repainted.

3.3 Estimate

The estimated cost of construction to rehabilitate the bridge as recommended in Section 3.2 is $353,028. Total design fees are estimated at $84,727. The total project estimate is $437,755. See following page for the complete estimate breakdown.

Glenda Peterson

From: Dane Stovall
Sent: Friday, October 4, 2019 8:44 AM
To: Glenda Peterson
Subject: Analysis

An review of the inspection report for Corn Valley Road bridge over Kirby Creek has revealed deficiencies to the approach slabs, bridge abutments, pedestrian walkway and bridge railings.

Dane Stovall
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