CobbFendley

March 29, 2019

Exhibit A
Scope of Services

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 in 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 Mirabella Boulevard over Bowman Branch (S048-00-001)
  - 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 Mirabella, both sides
  - Install erosion protection wall around existing bridge abutments, both sides
  - Install slope paving on embankments adjacent to new erosion protection wall
  - No slope paving will be placed in the bottom of the channel
- Box Culvert on South Carrier Parkway over Kirby Creek Tributary (F214-36-012)
  - Remove and replace all 4 parallel wingwalls
  - Remove and replace the curb inlet near the east end of the culvert, in the northbound lane of South Carrier Parkway
  - Replace sidewalk over culvert near the east end of the culvert
  - Install concrete slope paving between the sidewalk and top of culvert, both ends
  - Replace guard rail as needed, both sides of South Carrier Parkway
  - Install concrete slope paving approximately 30' upstream and downstream of the box culvert

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.

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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.

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. Typical Section
      iv. Removal Sheet
      v. Plan Sheet
      vi. Details
      vii. Construction Cost Estimate

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

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

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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 Web Site for advertisement. Also provide the bid summary sheets in excel (no formulas) to be posted to the City web site.

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

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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.

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. PERMITTING

1. The Maribelle Bridge falls within the ACOE Jurisdiction of Joe Pool Lake. We have been coordinating with the ACOE to determine the permit and construction coordination requirements. The ACOE had initially stated they do not think an individual permit will be required. Obtaining an individual permit can take over 12 months review by the ACOE. It appears this project will fall under Nation Wide Permit 13. They have indicated the City will have to obtain temporary construction easements. Construction Easements can take up to 6 months review by the ACOE after the 60% design plans have been completed.

   This proposal does not include any permitting with the ACOE or any other regulating services. If permitting is required, this will be performed as an additional service.

   This proposal includes preparing 3 temporary construction easements.

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E. 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.

F. 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.

    a. ACOE 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.

G. 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

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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	$ 56,595
Bidding Services	$ 7,600
Construction Services	$ 13,655
Topographic Survey	$ 8,000
Geotechnical Investigation	$ 5,500
Construction Easement (4)	$ 12,000
Grand Total	**$ 105,350**

COBB, FENDLEY & ASSOCIATES, INC.

By: Ted Sugg

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

COBB FENDLEY:_____ CLIENT:_____

4.0 South Carrier Parkway Bridge

The concrete multiple box culvert crossing at the Kirby Creek Tributary on South Carrier Parkway is located approximately ½-mile east of President George Bush Turnpike and 1-mile north of Interstate 20.

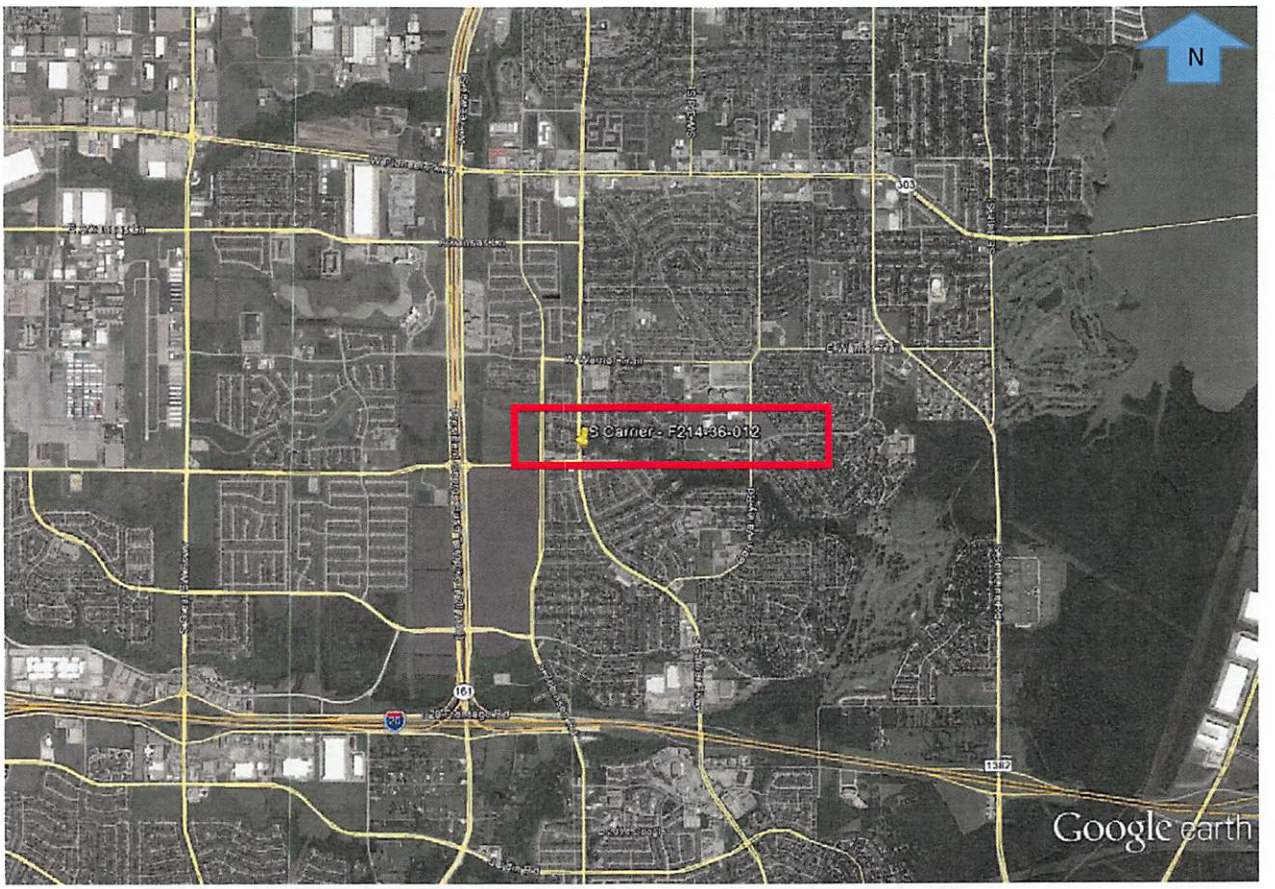

Figure 30: Location of S. Carrier Pkwy. Bridge

4.1 Bridge Observations

The concrete box culvert bridge crossing was last inspected in September 2011, and received an overall inspection rating of 7.

Deck: The HMAC roadway is in good shape at this crossing. Cracks have been maintained and sealed. The curb inlet on the east side of the roadway sitting above the multiple box culvert has settled and separated from the roadway. This vertical separation is almost three inches. Water is also overtopping the inlet and causing erosion under the adjacent sidewalk and down the fill slope. It appears that the western drainage flume may have been added as a replacement for a previous curb inlet. The flume and sidewalk are in good condition.

Rail: MBGF and guardrail terminals are present and in good condition. The fill slope appears to be settling and causing the steel guard rail posts to lean away from the roadway towards the creek.

Culverts: The concrete box culverts are in good condition. The base and walls exhibit very minor cracking and slight spalling throughout. Areas of exposed reinforcement are present due to lack of cover during construction. The northwest wingwall has broken and separated from the structure and will continue to translate away from the roadway. The southwest wingwall is beginning to crack. The southeast wingwall has cracked and is beginning to separate away from the top slab. The northeast wingwall is also cracking. Additionally, a cedar tree is growing on the fill slope directly adjacent to this wingwall.

Figure 31: Western Headwall Showing Failed Wingwall

Channel & Approaches: The channel slopes have rock riprap protection that appears stable. Minor sediment build-up on the box floor (less than one foot) and a few loose stones are present.

Miscellaneous: A portion of the adjacent parking lot at the southwest side has recently been reconstructed and now directs water through a small flume onto the upper bank of the channel. Erosion is occurring under the sidewalk at this area where small diameter gravel has been placed and is washing away. Two existing aerial utility crossings (one on each side of the roadway) are in good condition.

Figure 32: Drainage Flume (Looking North)

Figure 33: SGT for Southbound Traffic

Figure 34: Drainage Flume, MBGF, and Channel Riprap (Looking West)

Figure 35: Curb Inlet on East Side (Looking South)

Figure 36: Curb Inlet has Moved

Figure 37: Erosion Behind Inlet Under Sidewalk

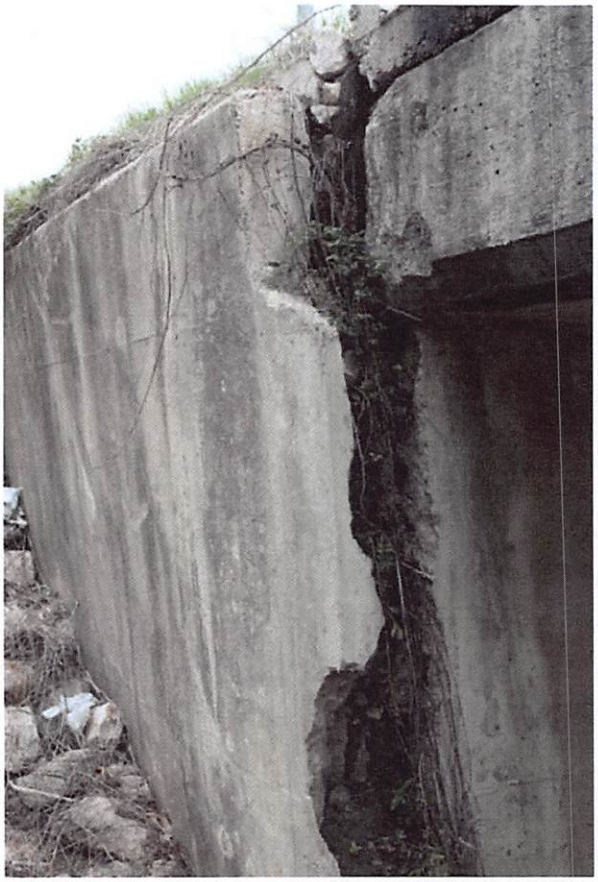

Figure 38: Northwest Wingwall

Figure 39: Southwest Wingwall

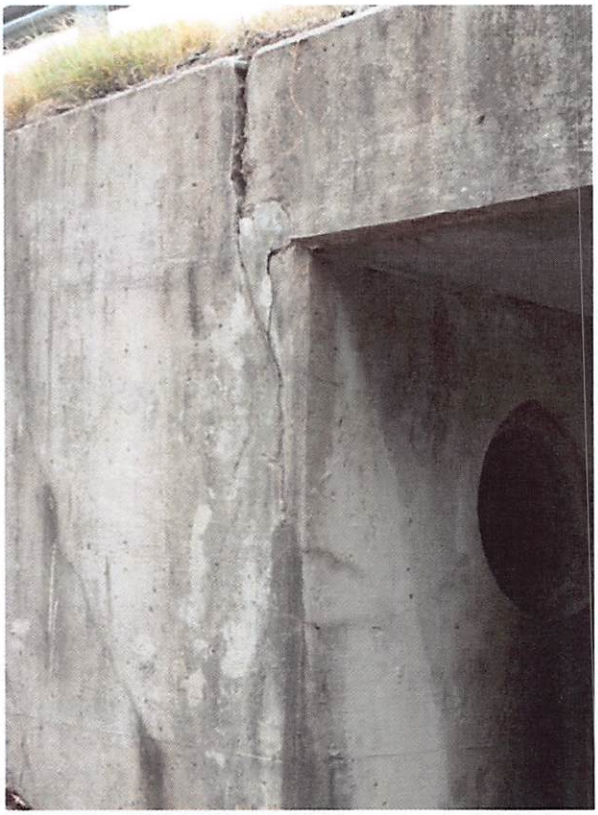

Figure 40: Southeast Wingwall

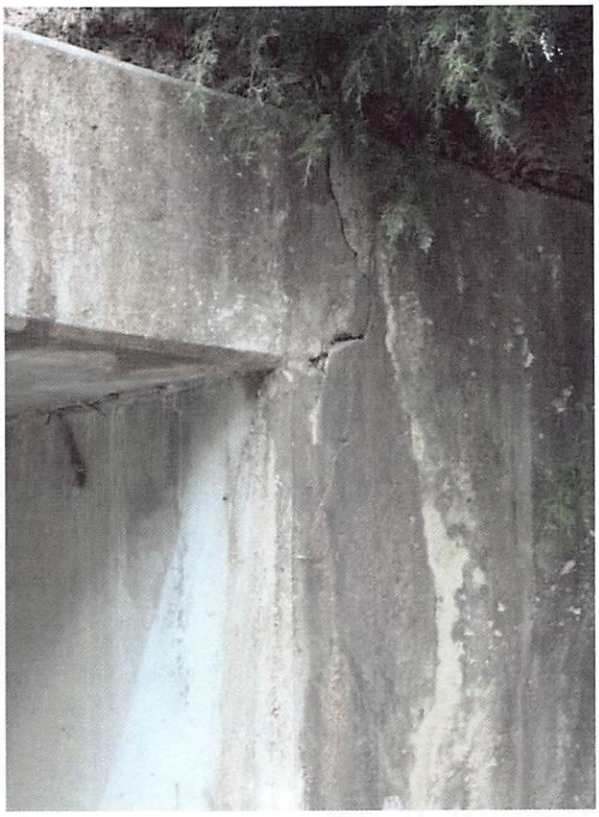

Figure 41: Northeast Wingwall

Figure 42: Separation at Inlet

Figure 43: Exposed and Corroded Reinforcement

Figure 44: Erosion under Sidewalk Near Adjacent Parking Lot

4.2 Recommendations

The 4 lanes available to traffic will allow construction to progress without having to close the road to traffic. The recommended work summarized below should be completed without needing to close more than one lane at a time. After repairing the wingwalls, the inlet on the east side of the roadway can be reconstructed or converted into a flume similar to the west side. Leaning MBGF posts can then be removed and reset. The following summarizes the rehabilitation work recommended for this bridge:

Roadway: No recommendations other than patching at existing inlet.

Rail: Install new MBGF posts and reset terminals.

Culverts: Remove loose and spalled concrete and rub/fill those areas with polymer-modified concrete. Replace northwest wingwall in its entirety; repair the other three wingwall corner connections.

Channel: Replace rock riprap disturbed during construction of new wingwalls.

Miscellaneous: Remove existing cedar tree; Repair and re-set inlet.

5.0 Mirabella Boulevard Bridge

The single-span, prestressed concrete I-Beam bridge over Bowman Branch on Mirabella Boulevard is located just east of State Highway 360/South Watson Road and almost 2 miles south of Sublett/Camp Wisdom Road.

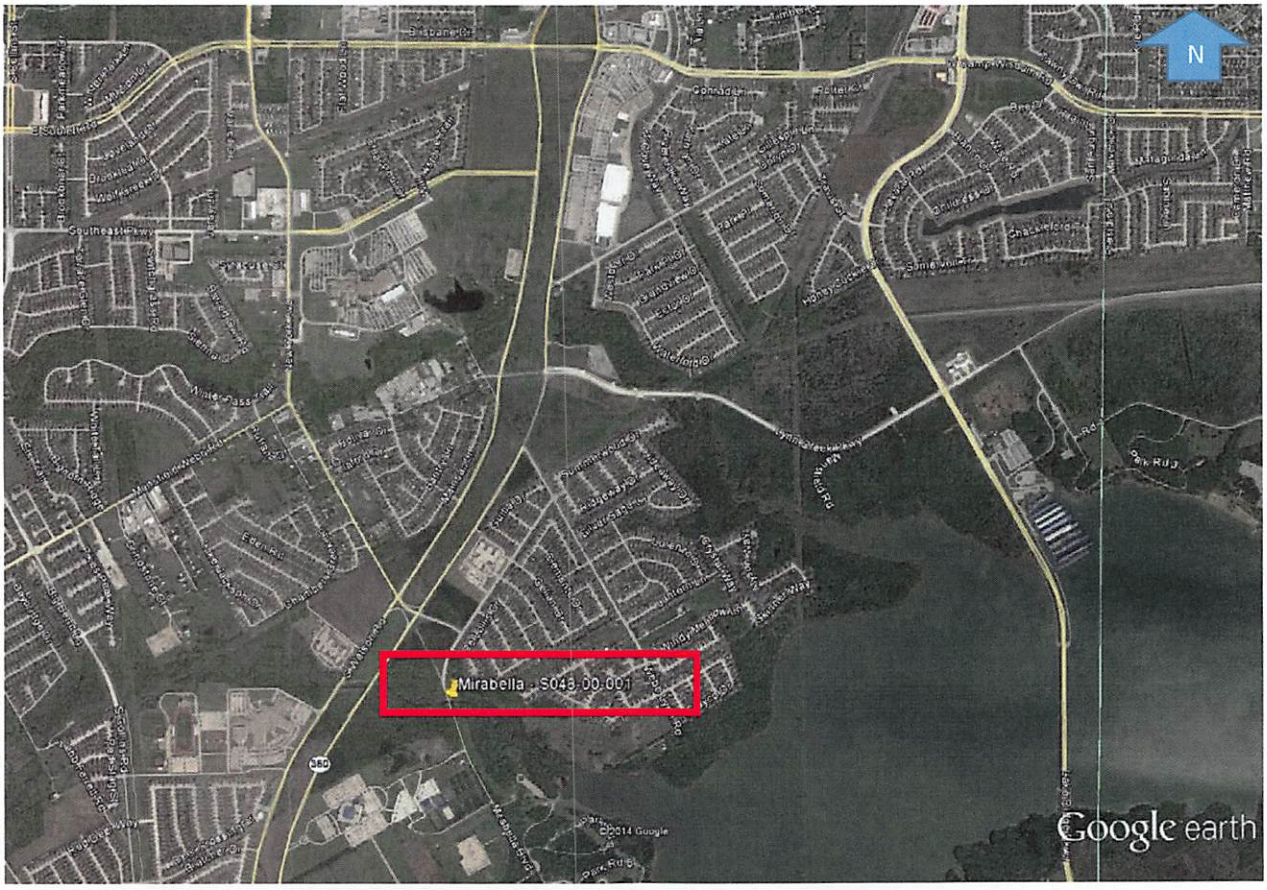

Figure 45: Location of Mirabella Blvd. Bridge

5.1 Bridge Observations

The concrete bridge was last inspected in July 2012, and received an overall inspection rating of 7.

Deck: Overall, the deck is in good condition with only minor hairline cracks visible on the deck underside. The HMAC wearing surface is worn through in several areas. It is apparent that several attempts have been made at patching the roadway over the approach slabs.

Rail: The concrete bridge parapet rail is in good condition with no visible impact damage or repairs. Some visible spalling is noticeable but no reinforcement is exposed. Only one section of MBGF has been attached to the concrete parapet at the northeast corner. The other three corners of the bridge remain exposed and unprotected.

Figure 46: Only One Section of MBGF - Looking South

Superstructure: The precast concrete I-beams are in very good condition and show little signs of age or deterioration.

Substructure: The original concrete bridge abutments from a previous bridge are still present and being used essentially as retaining walls for the current bridge abutments. The current pier cap and abutment have been constructed immediately adjacent to the old abutment. Erosion near the sides of the old abutment is extending up the slope and beginning to undermine the approach slabs.

Channel & Approaches: The channel is eroding. Softer layers of rock are eroding out from underneath harder layers above causing large sections of the bank to fall into the stream. It is not apparent if support for the original abutments exists below the rock or it they were cast on top of/into the surface rock. Areas of grouted riprap have also been undermined and are losing support.

Figure 47: Road Surface with Many Potholes - Looking North

Figure 48: Failed Pavement has been Patched Multiple Times

Figure 49: Original Abutment from Earlier Bridge is Still Present (South Side)

Figure 50: North Side Abutment

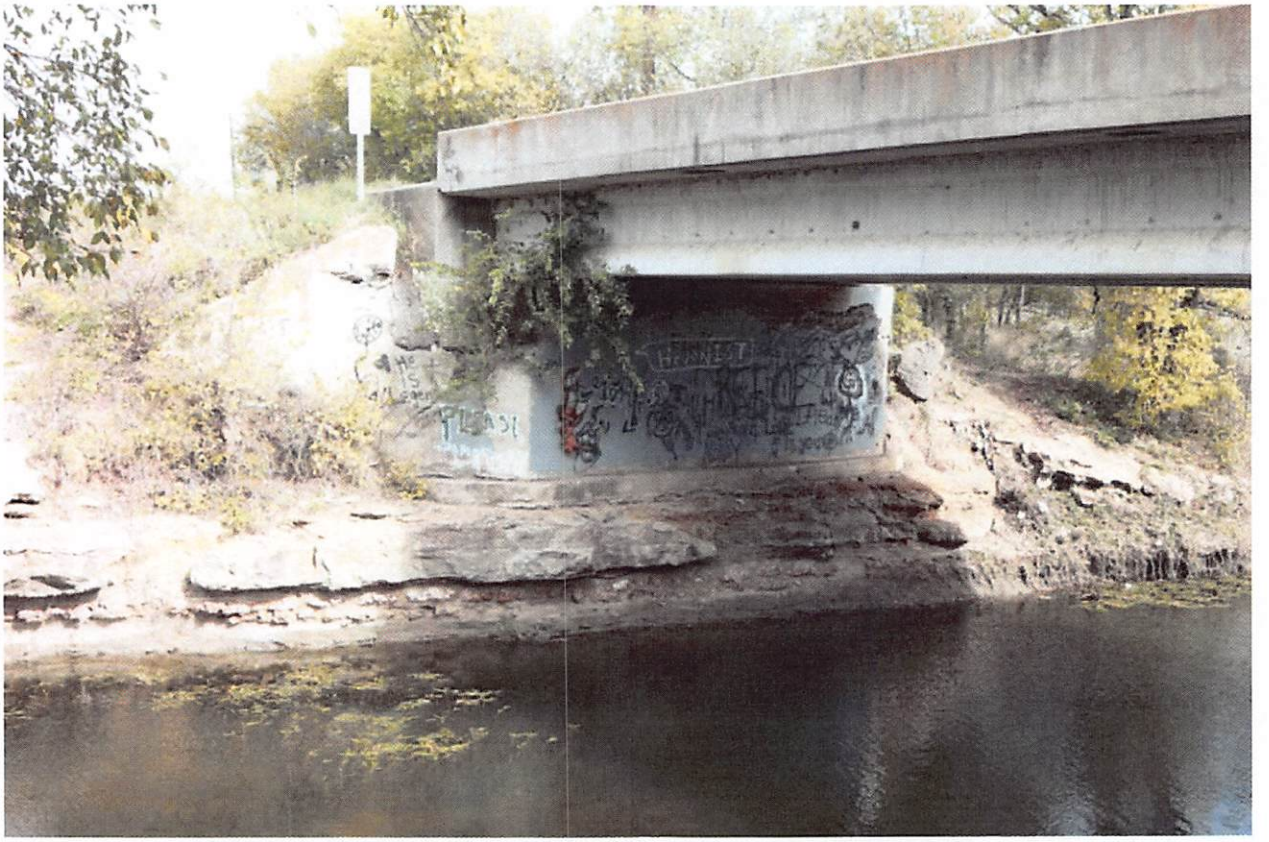

Figure 51: Channel Sides Supporting Original Abutments are Eroding

Figure 52: Concrete Abutment Backwall is Cracked

Figure 53: Pier Cap for Current Bridge is Integral with Original Bridge Abutment

Figure 54: Grouted Riprap is Undermined and Losing Support

Figure 55: Erosion Down Banks has Caused Fence Posts to Wash Out

Figure 56: Erosion Near Approach Slab Undermining HMAC Pavement

5.2 Recommendations

Access to the 2-lane bridge is limited and therefore it is recommended that construction activities occur during off-peak travel times when both lanes could be closed and detours set up to route traffic away from this crossing. The church south of the bridge has access off Highway 360 and from Ragland to Mirabella on the south side. Both lanes would require closure to remove the existing asphalt and approach slabs, construct new support slabs and bearing structures for the slabs if necessary, and resurface the approach and deck. Either prior to or after the full bridge closure, work on the rail replacement and channel bank stabilization could utilize daytime, single-lane closures. 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:	Mill existing asphalt and repave
Rail:	Install new steel guard rail including MBGF transitions and terminals at all bridge corners.
Substructure:	Remove any loose and spalled concrete and rub/fill those areas with polymer-modified concrete.
Abutments:	Install weep holes into original bridge abutment walls. Construct new wingwalls to stop erosion.
Channel:	Provide additional stabilization measures as necessary (grouted rip-rap)
Miscellaneous:	Geotechnical borings at this location are recommended to determine the makeup of the rock layers adjacent to the channel.