

STATE OF TEXAS §
 §
COUNTY OF FORT BEND §

**FIFTH AMENDMENT TO AGREEMENT FOR
PROFESSIONAL ENGINEERING SERVICES**

THIS FIFTH AMENDMENT, is made and entered into by and between Fort Bend County (hereinafter “County”), a body corporate and politic under the laws of the State of Texas, and Cobb, Fendley & Associates, Inc., (hereinafter “Contractor”), a company authorized to conduct business in the State of Texas.

WHEREAS, the parties executed and accepted that certain Agreement for Professional Engineering Services on February 24, 2015, (hereinafter “Agreement”) pursuant to SOQ 14-025, as amended by documents executed on December 1, 2015, (hereinafter “Amendment”), March 23, 2021 (hereinafter “Second Amendment”), May 13, 2021 (hereinafter “Third Amendment”), September 7, 2021 (hereinafter “Fourth Amendment”); and

WHEREAS, the parties desire to further amend the Agreement for additional services to be provided and increase the total Maximum Compensation for the completion of such additional services.

NOW, THEREFORE, the parties do mutually agree as follows:

1. The County shall pay the Contractor an additional Eight Hundred Sixty-Nine Thousand Six Hundred Nineteen and 70/100 dollars (\$869,619.70) for the additional services, as described in the proposal dated February 5, 2024, attached hereto as Exhibit “A-5” and incorporated herein for all purposes.
2. The Maximum Compensation payable to Contractor for Services rendered is increased to an amount not to exceed One Million Nine Hundred Eighty-Two Thousand Seven Hundred Forty Nine and 26/100 dollars (\$1,982,749.26), authorized as follows:
 - \$ 853,908.00 under the Agreement;
 - \$ 5,881.87 under the Amendment;
 - \$ 0.00 under the Second Amendment;
 - \$ 230,164.69 under the Third Amendment;
 - \$ 23,175.00 under the Fourth Amendment; and
 - \$ 869,619.70 under this Fifth Amendment.

3. In no case shall the amount paid by County for all Services under the Agreement and any subsequently executed amendment exceed the Maximum Compensation without an amendment executed by the County and the Contractor.

4. Human Trafficking

BY ACCEPTANCE OF AGREEMENT, CONTRACTOR ACKNOWLEDGES THAT THE COUNTY IS OPPOSED TO HUMAN TRAFFICKING AND THAT NO COUNTY FUNDS WILL BE USED IN SUPPORT OF SERVICES OR ACTIVITIES THAT VIOLATE HUMAN TRAFFICKING LAWS.

Except as provided herein, all terms and conditions of the Agreement and any subsequently executed amendment shall remain unchanged.

FORT BEND COUNTY

COBB, FENDLEY & ASSOCIATES, INC.

KP George, County Judge



Authorized Agent – Signature

Date

Brad Matlock

Authorized Agent – Printed Name

ATTEST:

Senior Vice President

Title

April 2, 2024

Date

Laura Richard, County Clerk

APPROVED:



J. Stacy Slawinski, P.E., County Engineer

AUDITOR'S CERTIFICATE

I hereby certify that funds are available in the amount of \$_____ to accomplish and pay the obligation of Fort Bend County under this contract.

Robert Edward Sturdivant, County Auditor

EXHIBIT A-5



February 5, 2024

Mr. Stacy Slawinski, P.E.
Fort Bend County Engineer
C/O Kevin Mineo, P.E.
Binkley & Barfield | DCCM
3600 W Sam Houston Parkway S
Suite 600
Houston, Texas 77042

Re: FM 762/10th Street bridge (UPRR Overpass)
From US 90A to Fields Street composed of,
Structural bridge components, roadway paving &
drainage improvements in North Richmond, Texas
Mobility Bond Program, PCT 4, Project No. 13106

Subject: Proposal for Preliminary & Final Design & Limited Construction Phase Services

Dear Mr. Slawinski:

We are pleased to provide you with this proposal to perform professional engineering and surveying services in connection with construction of a bridge structure along the proposed FM 762/10th Street extension alignment from US 90A to Field Street. The proposed grade separated bridge structure will span Morton Street, the Union Pacific Railroad track(s) (UPRR), and Preston Street rights-of-ways, in PCT 4, designated as the Fort Bend County Mobility Bond Program Project No. 13106. The 10th Street at Clay Street roundabout will be incorporated into the Clay Street and 2nd Street reconstruction plans.

Enclosed please find attachments A and B for Cobb, Fendley & Associates, Inc. (CobbFendley) level of efforts breakdown including a detailed scope of services for completing preliminary design, final design, contract and bidding, and limited phase III construction administration services. The proposal also includes scope and associated compensations for additional services to perform the required geotechnical investigation, topographical survey, subsurface utility engineering (SUE), and traffic engineering. The scope of services include incorporating the 10th Street at Clay Street roundabout into the Clay Street and 2nd Street plans.

Additionally, the proposal includes the anticipated scope and associated fees budgeted for optional additional services, if necessary, upon completion of the preliminary engineering phase, for completion of the project's construction documents.

CobbFendley proposed budget are as follow:

Basic Services (CobbFendley, Prime Consultant)

Phase I & II Preliminary & Final Design Services (Lump-Sum).....	\$610,010.00
10 th St. Roundabout Incorporation into Clay St. Plans (Lump-Sum)	\$ 24,939.00
Phase II Contract & Bidding Services (Lump-Sum)	\$ 10,220.00
<hr/>	
Subtotal Phase II Services.....	\$645,169.00



Phase III Limited Construction Phase Services (Time & Material) \$ 50,000.00

Subtotal Phase I, II & III Services, Prime \$695,169.00

Additional Services (Subconsultants)

Geotechnical Terracon Consultants, Inc. (Lump-Sum)..... \$112,760.00

Traffic Data Collection (CJ Hinch) (Lump-Sum)..... \$ 1,850.00

Subtotal Subconsultants Additional Services Fee \$114,610.00

Additional Services (Prime)

Topo Survey including existing ROW envelope (Lump-Sum) \$ 38,535.00

Subtotal CobbFendley Additional Services, Prime Fee \$ 38,535.00

Optional Add Services (Prime) (Anticipated for budgetary purpose, if required)

Parcels Acquisition Exhibits 2 @ \$3,183/Parcel (Lump-Sum)..... \$ 6,366.00

Subsurface Utility Engineering (SUE)(Level "A:") 4 @ \$2,500/EA (Lump-Sum) \$ 10,000.00

Construction Baseline Staking (Lump-Sum) \$ 9,500.00

Right-of-Way Staking (Clearing Contractor) (Lump-Sum) \$ 9,500.00

Lighting Design & CenterPoint Energy Coordination (Lump-Sum)..... \$ 75,000.00

Subtotal Optional Additional Services, Prime Fee (If required) \$ 110,366.00

Reimbursables & Direct Expenses (Prime)

Reimbursables & Direct Expenses \$ 2,500.00

Reimbursables & Direct Expenses – 10th St. Roundabout \$ 1,200.00

Subtotal Reimbursables & Direct Expenses, Prime \$ 3,700.00

Subtotal Basic, Additional & Optional Additional Services and Reimbursables \$ 962,380.00

Estimated Credit/Unused Funds in Existing Contract..... \$ (92,760.30)

TOTAL PROFESSIONAL SERVICES, PRIME & SUBCONSULTANTS \$869,619.70

The current 10th Street Extension contract has \$92,760.30 available unused funds remaining in the current contract for the final design services, construction baseline staking, ROW staking, and lighting design which is credited towards the requested budget.

We respectfully request a total budget of \$869,619.70 for the abovementioned professional services. Detailed scope of services and the level of effort for the basic, additional, and optional services are attached. Also attached are the proposals from subconsultant for the geotechnical investigation services.



Please note that optional additional services tasks and associated fees are for budgetary purposes for anticipated ROW parcel sketches for required parcels, subsurface utility engineering services and traffic data collection, if deemed necessary, at the completion of the preliminary design phase. The optional additional services will only be performed with prior written authorization by the Fort Bend County Engineer and/or Binkley & Barfield | DCCM, the Fort Bend County designated managing consultant.

We will commence upon receipt of the written notice to proceed with the work. Please call at your earliest convenience should you have any questions, or require additional information,

Sincerely,

COBB, FENDLEY & ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read "Mahmoud Salehi".

Mahmoud Salehi, P.E.
Vice President | Senior Project Manager

Attachments:

"A" Scope of Services

"B" Level of Efforts

Exhibit 'A'

SCOPE OF SERVICES

10th Street and Bridge at UPRR

Existing Conditions:

The existing 10th & 11th Streets, north of US 90A, are 2-lane asphalt with roadside ditches and storm sewer pipes & boxes of variable sizes from US 90 A north to the end of the project at the Powell/Field Streets intersection with the 10th Street. The existing right-of-way (ROW) varies for the existing 11th & 10th Streets; however, the existing ROW appears to be a nominal 60-ft wide. US 90A is a 4-lane divided curb & gutter roadway with storm sewer system within an existing 100-ft ROW.

The UPRR track is a single-track ballast located between Morton and Preston Streets and traverses in an east-west direction with a prescriptive variable ROW from 40-ft to 80-ft wide intermittently throughout Downtown Richmond. Existing 10th Street has an at-grade crossing of the UPRR track. There is a total of seventeen (6) intersecting streets within the project limits, of which US 90 A is the only signalized intersection.

Proposed Scope:

The proposed scope is comprised of 3 phases: preliminary engineering, final design, and construction phase services. The scope of services will include professional engineering, surveying, ROW mapping, and geotechnical investigation for a grade separated bridge structure spanning the existing UPRR track(s) and Preston Street. Additionally, the scope will include modification of the vertical grades of westbound lanes approaches to US 90A and FM 762 signalized intersection including modernization of the existing traffic signal hardware. The paving and drainage work along US 90A are needed to minimize the proposed bridge overpass grade south of the UPRR track(s).

The proposed bridge section will depend largely on the proposed roadway section; however, at a minimum it will be configured to accommodate 4-lanes of traffic, divided configuration, with 6' or 8' sidewalks.

The proposed bridge will be designed based on 30 MPH design speed. Final Posted speed will be determined after the completion of the project.

During the 30% plan production, the existing US 90A intersection layout and traffic signal will be evaluated in coordination with the TxDOT Fort Bend County area office engineer and the Houston District for installation of a modernized traffic signal hardware. The proposed condition of the permanent traffic signal, any intersection modifications, and temporary signal for the traffic control plan will be designed and incorporated into the plans during the final design phase. A TxDOT Driveway Permit and local on-system improvements agreement (LOSA) will be prepared during the study & final design phases of the project.

During the preliminary engineering phase, the existing and proposed drainage area maps with outfall locations will be identified for both bridge overpass and US 90A in addition to preliminary

storm sewer sizes for the on-site drainage and off-site conveyance, if necessary. The project's drainage design will be performed and prepared in coordination with the Fort Bend County drainage district & County Engineers, TxDOT's Rosenberg Area Office Engineer, and the City of Richmond public works.

During the preliminary engineering phase, the horizontal and vertical location of existing public and private utilities along the proposed bridge alignment, US 90A, and FM 762 will be identified in coordination with TxDOT, City of Richmond public works, and the private utility owners. If there are no existing records available, then subsurface utility engineering (SUE) test holes will be proposed during final design to avoid potential utility conflicts with the proposed roadway paving, storm sewer, sanitary sewer, water line improvements, bridge foundations, and retaining walls. The City of Richmond will assist in locating the existing and proposed water and wastewater facilities along the corridor.

The construction documents and design will be performed and prepared in accordance with the Fort Bend County, TxDOT, and the City of Richmond Criteria, Guidelines, and Specifications as applicable.

It is mutually understood, should TxDOT, Fort Bend County, and the City of Richmond request additional work, CobbFendley will draft a separate proposal with associated compensation for such additional services.

The anticipated basic services during the study, final design, and contract phases are as follow:

BASIC SERVICES

Phase II – DESIGN SERVICES

1. PROJECT MANAGEMENT, MEETINGS/COORDINATION

The Engineer shall participate in the following meetings with Fort Bend County engineering staff, the City of Richmond, TxDOT, and pertinent stakeholders as necessary:

1. Project Kick-Off meetings
2. Monthly coordination meetings with Fort Bend County/Program Manager
3. Meeting with the TxDOT Fort Bend County Area Office Engineer Office & Houston District if deemed necessary.
4. Meeting with the UPRR manager of the public infrastructure
5. Proposed alignment meeting at 50% plans
6. Prepare and coordinate a TxDOT Driveway Permit and Local On-System Agreement (LOSA). Coordination of the Permit and LOSA will be with the Houston District Permit Office.

Additionally, the following Project Management duties will be performed:

1. Prepare invoices, meeting minutes, clerical (monthly) (12)
2. Update project status (12)

2. PRELIMINARY ENGINEERING DESIGN (30% SUBMITTAL)

This phase will include collection of supporting documents, findings, alternatives, and recommendations for the design phase. The Engineer shall perform the engineering design and related supporting services described below, as necessary, to develop preliminary design exhibits including identification of any critical path issues specific towards completion of design and preparation of the construction documents. The preliminary engineering design phase will also include development of engineering recommendations with feasible resolutions and acceptable alternatives for advancing towards the final design of the project.

A. DATA COLLECTION

1. Obtain TxDOT's record drawings, as-builts, utility information, prior drainage studies and traffic models associated with the US 90 A through the City of Richmond.
2. Conduct field visits to field truth the topographical survey along the US 90A within the project limits.

B. PRELIMINARY DESIGN SUMMARY

An executive summary will be prepared with scaled drawings/exhibits containing:

1. Proposed horizontal alignment and its impact(s) on existing ROW
2. Proposed vertical alignment impact on the existing businesses, street system, traffic circulation, and accessibility to future overpass
3. Evaluation of roadway and bridge typical sections including pedestrian amenities
4. Identifying the drainage outfalls along US 90A within the project limits with preliminary drainage impact on the existing storm sewer conveyance within the study area.
5. Preparation of preliminary bridge sections and bridge layout to span the following:
 - a. UPRR ROW and,
 - b. Preston Street ROW

It must be noted that this analysis will evaluate the proposed bridge approximate dimensions for bridge length, bridge width, span length and span type for the bridge openings mentioned in item 5a & 5b. In addition to the UPRR required 23'- 4" vertical clearance from top of rail, the structure should provide a minimum of 25-ft horizontal clearance from nearest centerline of each track to avoid installing crash proof walls in front of the proposed columns/supports.

6. Identification of existing utilities along US 90A and preparation of utility conflict table for any/all potential utility conflict within the project limits.
7. Preparation of the preliminary construction cost estimate associated with the

engineering recommendations.

8. Prepare existing condition and proposed traffic signal configuration for the FM 762/10th Street traffic signal.
9. Conceptual traffic control & construction phasing plan
10. Prepare 30% complete plans which will include roadway & bridge horizontal and vertical geometrics, preliminary drainage layout, sight triangles and sight distances.

C. SURVEYING AND ROW MAPPING

1. Horizontal & Vertical Control and Topographical Surveying Topographic Surveying and Roadway Cross-Sections will include not limited to the following:
 - a. Establish horizontal & vertical project control. Control shall be relative to the North American Datum of 1983 (NAD 83, 2001 adjustment) and the North American Vertical Datum of 1988 (NAVD 88, Orthometric, Geoid 12B).
 - b. Visible property delineators such as fence corners and other existing features to evaluate alignment alternatives within project limits.
 - c. The linear Topographical survey along the US 90 for approximately 300 feet to the east and west of the FM 762 intersection including approximately 200 feet along intersecting public streets and for a total of approximately 1,200 linear feet.
 - d. Obtain roadway cross sections at 100 ft. intervals. Cross-sections shall extend 30-ft beyond the existing/apparent right-of-way lines as applicable.
 - e. Identify locations and elevations of physical features to include buildings, fences, walls, trees, sidewalks, driveways and driveway curbs, power poles, light poles, water meters, water wells, ponds, sprinklers, off-site drainpipes.
 - f. Horizontally and vertically locate existing utilities within, crossing and adjoining project limits. Utilities will be located and tied based on visual evidence and utilities based on maps and plans provided by the Client and marked by "One Call" within the project's limits, Flow line elevations, sizes, material types and directions of pipes will be obtained on storm sewer lines, sanitary sewer lines and culverts. The rim (top) and flow line elevations will be obtained on inlets, manholes, and drainage structures.
2. Right of Way Mapping - Existing ROW envelope Determination. The existing ROW envelope will be performed upon completion and acceptance of the study phase findings and will include the following tasks:
 - a. Perform abstract survey; obtain deeds of records, and plats for the US 90A and FM 762 south approaching US 90 A.
 - b. Establish the existing US 90A and FM 762 right-of-way including that of intersecting streets.

D. ENVIRONMENTAL REPORT

Fort Bend County conducts environmental work on County projects on a program- wide basis, therefore; the environmental efforts is not included in the scope of services for this project; however, if deemed necessary, the County's designated environmental consultant will perform the required scope of environmental work.

E. GEOTECHNICAL INVESTIGATION

The scope of services covered in this proposal consist of field exploration, laboratory testing and the preparation of a geotechnical engineering report for the proposed pavement, retaining walls, and bridge.

1. Field Exploration

The field exploration will consist of obtaining borings for the proposed bridge, retaining walls, and existing US 90A pavement coring. The following field exploration program is proposed.

Planned Location ¹	Number of Borings (Boring IDs)	Planned Boring Depth (feet) ²
Existing pavement areas along US 90A	4 (P-1 through P-4)	5
Proposed MSE retaining wall areas	2 (RW-1 and RW-2)	20
Proposed bridge foundation and MSE retaining wall areas	2 (B-1 and B-4)	100
Proposed bridge foundation areas	2 (B-2 and B-3)	120
Total	10	500

1. The planned boring locations are shown on the attached **Anticipated Exploration Plan**.

2. Below grade at the time of our field program.

Planned Location ¹	Number of CPTs (CPT IDs)	Planned CPT Depth (feet) ^{2, 3}
Proposed MSE retaining wall areas	2 (CPT-1 and CPT-4)	20
Proposed bridge foundation and MSE retaining wall areas	2 (CPT-2 and CPT-3)	30
Total	4	100

1. The planned CPT locations are shown on the attached Anticipated Exploration Plan.

2. Below grade at the time of our field program.

3. The CPTs will be terminated at the proposed termination depth or to depth of refusal, whichever occurs first.

Our exploration team will prepare field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant

sampling information. Field logs include visual classifications of materials observed during drilling and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation, and include modifications based on observations and laboratory tests. CPT logs will be prepared by the Geotechnical Engineer

2. Laboratory Testing

The project engineer will review field data and assign laboratory tests to understand the engineering properties of various soil strata. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods are applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test to be performed. Exact types and number of tests cannot be defined until completion of fieldwork, but we anticipate the following laboratory testing may be performed:

- Tex-103-E Determining Moisture Content in Soil Materials
- Tex-104-E Determining Liquid Limits of Soils
- Tex-105-E Determining Plastic Limits of Soils
- Tex-106-E Calculating Plasticity Index of Soils
- Tex-110-E Particle Size Analysis of Soils
- Tex-111-E Determining the Amount of Material in Soils Finer than the 75 micrometer (No. 200) Sieve
- Tex-118-E Triaxial Compression Test for Undisturbed Soils
- ASTM D2166 Unconfined Compressive Strength of Soil
- ASTM D2435 One Dimensional Consolidation Properties of Soil

Our laboratory testing program includes observation of soil samples by an engineer. Based on the results of our field and laboratory programs, we will describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

3. Engineering and Project Delivery

The results of our field and laboratory programs will be evaluated, and a geotechnical engineering report will be prepared under the supervision of a licensed professional engineer. The geotechnical engineering report will provide recommendations for the following:

- Earthwork including site and subgrade preparation.
- Bridge foundation design parameters and construction
- Wincore capacity curves
- LPILE parameters (LPILE analyses to be performed by others)

- Settlement analyses for the bridge approach embankments
- Global stability analyses for MSE retaining walls
- External stability analyses for MSE retaining walls

In addition to our signed and sealed Geotechnical Engineering report, we also plan to provide the following deliverables.

- Wincore CLG files
- Signed/sealed MSE design data (MSEDD) sheets (sheets prepared by others)
- Signed/sealed soil boring data sheets (sheets prepared by others)

3. FINAL DESIGN (70%, 95%, 100% & FINAL SUBMITTAL)

The design submittal will address and incorporate pertinent comments from Fort Bend County staff on the preliminary design (30% Submittal). The engineer will perform a detailed design of the approved recommendations made from the preliminary design. The design submittal will include the submittal of electronically signed and sealed 11" x 17" construction documents which will include paving and drainage plan & profile sheets, traffic control plans and construction sequencing (TCP), temporary and permanent traffic signal plans, signing and pavement marking plan, roadway cross sections, bridge structural layout and detail design, UPRR Exhibit "A", and an estimate of the probable construction cost for each subsequent submittal. The design phase will have 70%, 95%, 100%, and final submittals. The project manual, including the final construction cost estimate, will be a part of 100% deliverables.

A. TRAFFIC ENGINEERING

1. Temporary Traffic Signal Design - The engineer will prepare PS&E design documents for the installation of temporary traffic signalization at the intersection of 10th Street and US 90 A (Jackson Street).

The temporary traffic signal design will be based upon roadway's existing and proposed geometric design with associated construction phasing plans. The temporary traffic signal design will follow the approved traffic control plans and will support the traffic throughout the various phases and sequences of construction. Based upon coordination with Fort Bend County and TxDOT, at this time 3 phases of construction are anticipated. Wooden poles are anticipated to be installed for the temporary signals which are deemed as both cost effective and efficient.

2. Permanent Traffic Signal Design- The engineer will also prepare full PS&E design documents for installation of modernized traffic signal hardware assembly at the intersection of the FM 762/10th Street and US 90 A (Jackson Street).
3. Traffic Control Plans- Detailed Traffic control plans (TCP) will be prepared based on the approach and the number of construction phases decided in the conceptual TCP as part of the study. TCP will be designed according to the latest edition of The Texas Manual on Uniform Traffic Control Devices.

4. Traffic Engineering Coordination- The design of the project's temporary and permanent traffic signals will be coordinated with TxDOT's Rosenberg area office engineer, Fort Bend County engineer, and Traffic Engineering staff.

B. SWPPP

Storm water pollution prevention plans (SWPPP) will be prepared and included in the construction documents and project manual based on FBC and/or HCFCD criteria.

C. BRIDGE DESIGN

1. Bridge Layout

- The Engineer shall prepare a bridge layout plan sheet for each bridge and bridge class culvert.
- The Engineer shall conduct preliminary studies as necessary prior to producing the bridge layout. Preliminary studies will include the following:
 - Locate utilities. Determine the locations of utilities that affect placement of bridge substructure elements.
 - Determine extents of right of way.
 - If necessary, review existing documentation and information for rehabilitation, widening, or replacement of existing structures. Available information may include:
 - Original plans and shop drawings.
 - Existing specifications.
 - Documentation of previous repairs.
 - Routine Bridge Inspection Report.
 - Inspection reports/condition surveys. Conduct additional inspections as required to fully determine extent of repairs, structural adequacy, and existing condition of structure. Coordinate with the State project manager to arrange any necessary inspections.
 - Load rating reports.
 - Soil borings and pile driving record.
- The Engineer shall submit each preliminary bridge layout early in the plan preparation process to obtain approval from the County. The Engineer shall comply with all relevant sections of the latest edition of the State's *LRFD Bridge Design Manual*, *Bridge Project Development Manual*, *Bridge Detailing Guide*, and *AASHTO LRFD Bridge Design Specifications*. Each bridge layout sheet must include bridge typical sections, structural dimensions, abutment and bent locations, superstructure and substructure types, and any pertinent information from the Bridge Detailing Guide layout checklists. The Engineer shall locate and plot all soil borings and utilities, show proposed retaining walls, and, for staged construction, indicate limits of existing bridge for removal and reconstruction.

Bridge layout must include the following:

- Plan View

- Horizontal Curve data
- Bearing of alignment
- Bridge and Culvert skew angles
- Control Stations at the beginning and end of structures
- Dimensioned widths of bridge or culvert, roadway, rail, and shoulders
- Type and limits of riprap
- Location of profile grade line
- Direction of flow
- North arrow
- Roadway functional class
- Design Speed
- Traffic data
- Existing and proposed structure numbers
- Cross-slope and superelevation data
- Traffic flow directional arrows
- Railing type
- Bent stations and bearings
- Retaining wall locations
- Approach pavement crown width
- Typical bridge section showing beam type and spacing
- Joint and seal type and spacing
- Locations of soil borings
- Phased construction
- Profile View
- Profile grade
- Vertical curve data
- Finished roadway elevation at beginning and end of bridge
- Overall structure length
- Type and overall length of railing
- Existing and proposed ground lines clearly labeled
- Profile view grid elevations and stations
- Station of structure compatible with grid stations
- Applicable standard titles

- Type of riprap
- Type of foundation; number, size, and length of foundation elements
- Length and type of span unit
- Bent numbers
- Bearing seat elevations
- Soil bore data
- Fixed or expansion condition at each beam end
- Column heights
- Any other information required in the State's Bridges and Structures Operation and Planning Manual, Bridge Design Manual, and Bridge Detailing Manual.

2. Bridge Detail Summary

The Engineer shall prepare total bridge quantities, estimates, specifications, and summary sheets for proposed bridge structure and bridge class culvert.

3. Bridge Structural Details

The Engineer shall prepare each structural design and develop detailed structural drawings of all required details in compliance with the State's *LRFD Bridge Design Manual*, *Bridge Detailing Guide*, *TxDOT Preferred Practices for Steel Bridge Design, Fabrication, and Erection*, and *AASHTO LRFD Bridge Design Specifications*. The Engineer shall prepare any project-specific modified standards necessary for inclusion in the PS&E package. The Engineer shall sign, seal, and date all project-specific modified standards.

a. Additionally, the Engineer shall:

- Perform calculations for design of the substructure.
- Perform calculations for bridge slab design if required.
- Perform calculations to determine elevations of bridge substructure and superstructure elements.
- Perform calculations for bridge superstructure design.
- Prepare necessary foundation details and plan sheets.
- Prepare plan sheets for abutment and bent design and additional details.
- Prepare framing plan and slab plan sheets.
- Compute and prepare tables for slab and bearing seat elevations, dead load deflections, etc.
- For prestressed concrete superstructure, design beams and prepare beam design tables.

- Prepare special provisions and special specifications in accordance to the above-listed manuals and guidelines.
- Prepare any additional required details specific to the project.

4. Bridge Specifications

The Engineer shall prepare any special provisions and special specifications necessary for inclusion in the PS&E package. Whenever possible, the Engineer shall use the State's standard drawings, standard specifications, or previously approved special provisions and special specifications. The Engineer shall submit any specifications developed by the Engineer to the State for approval prior to inclusion in the PS&E package.

D. RETAINING WALLS

Retaining wall layouts will be prepared and included in the construction documents and project manual based on FBC and TxDOT criteria. The retaining wall layouts will be submitted early in the plan preparation to obtain approval from the County. The Engineer shall incorporate all necessary information from the TxDOT *Geotechnical Manual* and respective checklists into the retaining wall layouts. For stage construction, the Engineer shall indicate limits of existing retaining walls for removal and reconstruction, and determine limits of temporary retaining walls to be shown on the TCP.

1. The approximate limits of each retaining wall shall be based on Station or length. The Engineer shall design the following retaining wall type:
 - a. Mechanically Stabilized Earth (MSE) Walls. The Engineer shall prepare the retaining wall layouts showing plan and profile of the retaining wall(s) for design by a State approved vendor. The Engineer is responsible for design of geometry and wall stability. The Engineer shall incorporate a slope of 4:1 or flatter from the finished ground line elevation to the face of the retaining wall.
2. The Engineer shall provide layouts (scale 1" = 100'), elevations, quantity estimate, summary of quantities, typical cross sections and structural details of all retaining walls within the project. The approximate lengths of the retaining walls as shown on the schematic are listed below. The Engineer shall determine if any additional walls are required and verify the need for and length of the retaining walls as shown on the schematic.
3. If applicable, the County will provide architectural standard drawings. The Engineer shall incorporate architectural standard drawings into design details. The specific requirements for each item are as follows:
 - a. Layout Plan
 - Designation of reference line
 - Beginning and ending retaining wall stations
 - Offset from reference line

- Horizontal curve data
- Total length of wall
- Indicate face of wall
- All wall dimensions & alignment relations (alignment data as necessary)
- Soil boring locations
- Drainage, signing, lightning, etc. that is mounted on or passing through the wall.
- Subsurface drainage structures or utilities which could be impacted by wall construction.

b. Elevation:

- Top of wall elevations
- Existing and finished ground line elevations
- Vertical limits of measurement for payment
- Type, limits and anchorage details of railing (only if Traffic Railing foundation standard is not being used on this project)
- Top and bottom of wall profiles plotted at correct station & elevation.
- Underdrains
- Any soil improvements, if applicable.
- Drainage, signing, lighting etc. as noted above
- Drainage structures and utilities as noted above

c. Sectional View:

- Reinforced volume
- Underdrain location
- Soil improvements, if applicable.

d. General Guidelines for Retaining Walls

- The Engineer shall perform design calculations to check the external stability of the walls including slope stability, bearing, sliding and overturning and detail drawings in accordance with the standard requirements of the State.
- For retaining wall submittals, the Engineer shall check State's Bridge Division website for current requirements.

E. Subsurface Utility Engineering (SUE)

The Engineer shall perform investigations, research, and other activities necessary to identify potential utility/pipeline conflicts within the project limits including but not limited to:

1. Locating and identifying existing utilities/pipelines including casings and vent pipes within the existing and proposed rights-of-way, including obtaining information from

utility owners record drawings and site reconnaissance, as well as shooting elevations marked or uncovered by others, and providing Subsurface Utility Engineering Level B effort to locate all subsurface utilities within the existing and proposed ROW.

2. Meeting with the utility companies and providing information and schematics as necessary.
3. Identifying major utilities (i.e. pipelines, concrete incased conduits, water, sanitary sewer, storm sewer, or other utilities of this nature) that may require relocation.
4. Identifying any utilities that are within dedicated easement that will be within the proposed right-of-way (i.e. utilities for which the County may be responsible for the cost of any adjustments and/or relocations).
5. Providing a table listing each utility identified with an ID number for, station number (at the left right-of-way, centerline, and right right-of-way), utility owner, contact person (name, address, phone number, and email address), notes in regards to potential conflict, and notes in regards to making recommendations for addressing potential conflicts.

The Engineer, upon prior written authorization from the County Engineer, shall furnish the following services in accordance with the applicable guidelines as set forth below:

1. Level A Subsurface Utility Engineering (SUE)

The Engineer shall perform, if required, quality level A subsurface utility engineering services at \$260.00 per hour (4 hours minimum) for test hole(s) within the project limits, designated by the design engineer, generally from US 90 A to Clay Street.

a. Quality Level A

Subsurface Utility Locate (Test Hole) Quality Level A locate means to obtain precise horizontal and vertical position, material type, condition, size and other data that may be obtainable about the utility facility and its surrounding environment through exposure by non-destructive excavation techniques that ensures the integrity of the utility facility.

Subsurface Utility Locate (Test Hole) Services (Quality Level A) are inclusive of Quality Levels B, C, and D. The utilities shall be referenced by the type of utility, utility company or agency name, telephone number and contact person and color coded to American Public Works Association standards. These services include meeting and contacting all utilities on the project.

F. CONTRACT/PROJECT BIDDING

The project construction cost estimate and bid sheets will be prepared as defined by Fort Bend County Purchasing template. The project will be advertised by Fort Bend County Purchasing department. The following tasks will be performed during bid phase:

1. Respond to contractors' questions and issue clarifications & Addenda.

2. Attend Pre-Construction meeting.

Phase III – CONSTRUCTION PHASE SERVICES

1. CONSTRUCTION PHASE SERVICES

The project's estimated construction duration is estimated to take 18 months. Fort Bend County has indicated that an initial amount of \$50,000.00 (time & material) will be authorized for construction administration phase services. The level of effort for the construction phase services will be compensated based on Time & Material up to the initially authorized amount of \$50,000.00. It is our understanding that compensations for the required level of effort may exceed this initially authorized funds through completion of the project. At such time, it is also our mutual understanding that Fort Bend County would ask for a proposal to augment the \$50,000.00 allocated funds for compensation toward the required level of effort through completion of the construction. The construction phase services will be performed and continued with prior Fort Bend County authorization.

The following services will be performed during the construction phase services:

1. Attend Construction Progress meeting (limited 6 quarterly meetings)
2. Review Shop Drawings (including detailed structural components)
3. Respond to contractors RFI's (justifiable number of RFI's)
4. Prepare any/all required change order documents

PS&E Deliverables

Upon acceptance of the study phase recommendations, 3 submittals will be made during the final design phase of the project according to the design schedule prepared by the engineer. The following deliverables will be provided to Fort Bend County:

1. FIRST SUBMITTAL (70% MILESTONE)

The following submittal will be made electronically in pdf format

- A. Refined Horizontal and vertical alignment sheets
- B. Preliminary Utility conflict resolutions with utility relocation/adjustments
- C. Cover sheet/Index Sheet
- D. Layout sheet
- E. Typical sections
- F. Drainage area map
- G. Drainage calculations
- H. Traffic control plan

- I. Plan & profiles
- J. Preliminary traffic signal design
- K. Bridge layout
- L. Bridge structural detail design
- M. Retaining Walls Plan & Profile
- N. Retaining Walls structural detaining
- O. Preliminary RR Exhibits “A”
- P. Quantities summary
- Q. Preliminary Construction Cost Estimates
- R. QA/QC

2. SECOND SUBMITTAL (95% MILESTONE)

The following submittal will be made electronically in pdf format

- A. Cover sheet/Index Sheet
- B. General notes
- C. Layout sheet
- D. Typical sections
- E. Drainage area map
- F. Storm sewer design with calculations
- G. Survey Control Sheets
- H. ROW maps
- I. Horizontal Data Sheets
- J. Off-Site mitigation plan (if required)
- K. Traffic Control Plan
- L. Traffic signals
- M. Bridge layout
- N. Bridge structural detail design
- O. Retaining Walls Plan & Profile
- P. Retaining Walls structural detaining
- Q. Plan & Profiles
- R. Plan & Profile (Existing and proposed utility layouts)
- S. Utility conflict resolutions along with utility relocation/adjustments
- T. Storm water pollution prevention plans

- U. Signing & pavement markings
- V. Cross sections
- W. Illumination
- X. UPRR Exhibit "A"
- Y. Miscellaneous Details
- Summary of Quantities
- Construction Cost Estimates including the excel worksheet
- Prepare project manual (SS, SP, and list of technical specifications)

3. FINAL SUBMITTAL (100% MILESTONE)

The following submittal will be made electronically in pdf format

- A. Cover sheet/Index Sheet
- B. General Notes and Fort Bend County General Conditions
- C. Layout sheets
- D. Survey Control Sheets
- E. ROW maps
- F. Horizontal Data Sheets
- G. Drainage area map
- H. Storm sewer design with calculations
- I. Off-Site mitigation plan (if required)
- J. Typical sections
- K. Plan & Profiles (Roadway)
- L. Plan & Profiles (Existing and proposed utility layouts)
- M. Traffic control plan
- N. Storm water pollution prevention (SWPPP) plans
- O. Traffic signals (Temporary and Permanent)
- P. Signing & pavement markings
- Q. Final UPRR Exhibit A
- R. Bridge layout
- S. Bridge structural detail design
- T. Retaining Walls Plan & Profile
- U. Retaining Walls structural detaining
- V. Illumination (if required)

W. Cross sections

X. Miscellaneous Details

Agency approvals (TxDOT, FBC Drainage District, TDLR)

Summary of Quantities

Construction Cost Estimates including the Excel Worksheet

Complete project manual (specs, bid forms, front end docs, SS, & SP) The manual will include the geotechnical report

4. BID READY SUBMITTAL (SIGNED & SEALED)

The following tasks will be performed:

- A. The plan modification(s) based on the review and comments on the final (100%) submittal.
- B. Submittal of signed & sealed (11" x 17") reproducible mylar of Construction documents
- C. Electronic submittal of the PS&E package in pdf format

SCOPE OF SERVICES

10th Street Roundabout to Clay & Second Street Paving & Drainage Project

The proposed 10 Street at Clay Street roundabout will be incorporated into the Clay & Second Street Paving & Drainage Improvements project and plan set. Construction Management & Administration, along with Material Testing will also be provided for incorporating the roundabout into the Clay & Second Street project.

The anticipated basic services for incorporating the roundabout into the Clay & Second Street Paving & Drainage Project are as follow:

1. BASIC SERVICES

A. Design

1. Plan Production & Project Management

B. Construction Phase Services

1. Construction Administration
2. Construction Management
3. Construction Inspection

2. REIMBURSABLE EXPENSES

A. Mileage & Direct Costs

ENGINEER TEAM ACKNOWLEDGEMENT

The following is the group of providers selected to perform the obligations described in the Agreement:

- A. Prime Consultant – Cobb, Fendley & Associates, Inc.
- B. Geotechnical Investigation – Terracon Consultants Inc. Houston
- C. Traffic Counts – CJ Hinch

The Engineer understands that it is solely responsible and liable to the County for the completion of all obligations under this Agreement.

Fee Summary
2023 Fort Bend County Mobility Program
FM 762/10th Street Bridge Overpass on UPRR
Fort Bend County Project No. 13106

Sponsor: Fort Bend County

Description: Bridge overpass on UPRR tracks & modification of US 90A approaches to the FM 762/90A intersection and including a modernized traffic signal at FM 762 and US 90A intersection. Incorporation of 10th St. at Clay St.

Roundabout into Clay St. Plans

Date: 2/05/2024

<u>Basic Services, CobbFendley (Prime Consultant)</u>	
Preliminary & Final Design	\$ 610,010.00
10th St. Roundabout Incorporation Into Clay St. Plans	\$ 24,939.00
Contract & Bidding Services	\$ 10,220.00
Subtotal Preliminary & Final Design, Contract & Bidding Services	\$ 645,169.00
Limited CPS (Time & Material)	\$ 50,000.00
Subtotal Limited CPS	\$ 50,000.00
<u>Additional Services (Subconsultants)</u>	
Geotechnical Investigation (Terracon. Houston)(Lump-Sum)	\$ 112,760.00
Traffic Data Collection (CJ Hinch)(Lump-Sum)	\$ 1,850.00
Subtotal Additional Services, Subconsultants	\$ 114,610.00
<u>Additional Services (Prime)</u>	
Topo Survey including abstracting & existing 90A ROW envelope (Lump-Sum)	\$ 38,535.00
Subtotal Additional Services, Prime	\$ 38,535.00
<u>Optional Additional Services (Prime)</u>	
Parcel Acquisition Exhibits 2 @ \$3,183/Parcel	\$ 6,366.00
Subsurface Utility Engineering (SUE) services (Level "A") for 4 Test Holes @ \$2,500 Each	\$ 10,000.00
Construction Baseline Staking	\$ 9,500.00
Right-of-Way Staking (Clearing Contractor)	\$ 9,500.00
Lighting Design & CenterPoint Energy Coordination	\$ 75,000.00
Subtotal Optional Additional Services, Prime	\$ 110,366.00
<u>Reimbursables Expenses (Prime)</u>	
Reimbursable Expenses	\$ 2,500.00
Reimbursable Expenses - 10th St. Roundabout	\$ 1,200.00
Subtotal Reimbursable Expenses, Prime	\$ 3,700
Subtotal Basic, Additional & Optioanl Additional Services and Reimbursables	\$ 962,380
Available Funds in Existing Contract	\$ (92,760.30)
PROJECT GRAND TOTAL	\$ 869,619.70

FM 762/10TH STREET BRIDGE OVERPASS OF UPRR - DESIGN & BID PHASE: MANHOUR & FEE ESTIMATE

TASK NO.	TASK DESCRIPTION	1	2	3	4	5	6	7	8	9	TOTAL MH'S PER WORK TASK & COSTS	ESTIMATED PLAN SHEET REQUIREMENTS		MANHOUR PER SHEET	
		TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION										QNTY	SCALE		
		PRINCIPAL	PROJ MGR	SENIOR HYDRO ENGR	PROJ ENGR III	PROJ ENGR I	SENIOR TECH II	CAD OPERATOR	UTILITY SPECIALIST	CLERICAL					
		\$330.00	\$307.00	\$275.00	\$199.00	\$142.00	\$164.00	\$121.00	\$164.00	\$119.00					
	BASIC SERVICES - PROJECT MGMT FOR DURATION OF PROJECT														
1	PROJECT KICK-OFF MEETING (1)		2		2						4				
2	ATTEND STATUS MEETINGS (10)		12		12						24				
3	PROJECT COORDINATION (FBC ENG., TxDOT, FBC GEC, CITY OF RICHMOND)		40		40	16					96				
4	PROJECT COORDINATION (TERRACON, CJ HINCH)		16		24	24					64				
5	PUBLIC & PRIVATE UTILITY COORDINATION		4		6				16		26				
6	TxDOT DRIVEWAY PERMIT & LOSA (DEVELOPMENT & COORDINATION)		16		32	24				8	80				
7	UPDATE REPORT & EXHIBITS														
8	PRESENTATION TO STAKEHOLDERS		12		12	12					36				
9	RAILROAD COORDINATION		16		40	12					68				
	HOURS SUB-TOTAL		118		168	88			16	8	398				
	TOTAL LABOR COSTS		\$36,226.00		\$33,432.00	\$12,496.00			\$2,624.00	\$952.00					
	SUBTOTAL PROJECT MGMT TASKS											\$85,730.00			
	BASIC SERVICES - DESIGN TASKS & PLAN PRODUCTION														
	RAODWAY														
	ROADWAY - DESIGN														
10	HORIZONTAL & VERTICAL ALIGNMENTS		4		8	8	16				36				
	ROADWAY - PLAN PRODUCTION														
11	PROJECT TITLE SHEET, LOCATION & VICINITY MAP							4			4	1	N/A	4	
12	INDEX OF SHEETS				1		1	2			4	1	N/A	4	
13	GENERAL CONSTRUCTION & PRIVATE UTILITY NOTES				1			2			3	3	N/A	1	
14	TYPICAL SECTIONS - EXISTING, PROPOSED (10TH STREET)		2		6		6	12			26	1	N/A	26	
15	TYPICAL SECTIONS - EXISTING, PROPOSED (US 90A)		2		6		6	12			26	1	N/A	26	
16	DEMOLITION PLAN											2	1"=40'		
17	PLAN & PROFILE LAYOUT SHEET					1	1	8			10	1	1"=100'	10	
18	HORIZONTAL ALIGNMENT DATA SHEET		1			1	1	2			5	1	N/A	5	
19	PAVEMENT GEOMETRICS						4	4			8	1	1"=40'	8	
20	PLAN & PROFILE SHEETS (10TH ST)		4		4	16	32	40			96	6	1"=40'/1"=4'	16	
21	PLAN & PROFILE SHEETS (US 90A)		2		2	8	12	24			48	2	1"=40'/1"=4'	24	
22	PLAN & PROFILE SHEET (PRESTON ST)		1		1	2	4	8			16	1	1"=40'/1"=4'	16	
23	PLAN & PROFILE SHEET (FERRY ST)		1		1	2	4	8			16	1	1"=40'/1"=4'	16	
24	INTERSECTION GRADING LAYOUT		1		1	6	16	16			40	5	1"=20'	8	
25	DRIVEWAY SUMMARY					2	2	4			8	1	N/A	8	
26	MISCELLANEOUS DETAILS		2		2	6	2	4			16	8	N/A	2	
27	CROSS SECTION SHEETS		4		8	16	8	24			60	6	1"=5'	10	
28	QUANTITIES ESTIMATES (70%, 95% & FINAL SUBMITTALS)					24	16				40				
29	COST ESTIMATES (70%, 95% & FINAL SUBMITTALS)		4		4	16					24				
30	PREPARE PROJEC T MANUAL (SPECIFICATIONS, BID FORMS)		4		8	16				4	32				
31	QA/QC PROJECT SUBMITTALS (70%, 95% & FINAL SUBMITTALS)	24	40	8	8						80				
	HOURS SUB-TOTAL	24	72	8	61	124	131	174		4	598				
	TOTAL LABOR COSTS	\$7,920.00	\$22,104.00	\$2,200.00	\$12,139.00	\$17,608.00	\$21,484.00	\$21,054.00		\$476.00					
	SUBTOTAL ROADWAY TASKS											\$104,985.00			
	DRAINAGE														
	DRAINAGE - STUDY														
32	IDENTIFY EXISTING DRAINAGE CONDITIONS & OUTFALLS			1		2					3				
33	DELINEATE DRAINAGE AREAS			1	2	4					7				
34	EXISTING CONDITION HYDROLOGIC CALCULATIONS				1	2					3				
35	DEVELOP EXIST XP-SWMM MODELS			1	4	12					17				
36	DEVELOP PROP XP-SWMM MODELS			2	4	16					22				
37	DEVELOP MITIGATION ALTERNATIVES FOR INCREASED PEAK FLOW AND WSEL			1	2	12					15				
38	PREPARE & PRESENT STUDY FINDINGS WITH FBC/FBCDD			1	1	6					8				
39	PREPARE DRAINAGE STUDY REPORT			2	6	24					32				
	DRAINAGE - DESIGN														
40	DELINEATE STORM SEWER DRAINAGE AREAS		2		2	2	4	8			18				
41	DEVELOP RUNOFF PARAMETERS & CALCULATE RUNOFF		2		2	2	2	4			12				
42	STORM SEWER DESIGN		2		16	24					42				
	DRAINAGE - PLAN PRODUCTION														
43	OVERALL DRAINAGE AREA MAP				1	2	1	4			8	1	1"=40'	8	
44	DRAINAGE AREA MAPS				2	2	4	8			16	2	1"=200'	8	
45	DRAINAGE CALCULATIONS				2	2	2	6			10	2	N/A	5	
46	STORM SEWER LATERALS				2	4	8	8			22	2	N/A	11	

FM 762/10TH STREET BRIDGE OVERPASS OF UPRR - DESIGN & BID PHASE: MANHOUR & FEE ESTIMATE

TASK NO.	TASK DESCRIPTION	TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION									TOTAL MH'S PER WORK TASK & COSTS	ESTIMATED PLAN SHEET REQUIREMENTS		MANHOUR PER SHEET
		PRINCIPAL	PROJ MGR	SENIOR HYDRO ENGR	PROJ ENGR III	PROJ ENGR I	SENIOR TECH II	CAD OPERATOR	UTILITY SPECIALIST	CLERICAL		QNTY	SCALE	
		\$330.00	\$307.00	\$275.00	\$199.00	\$142.00	\$164.00	\$121.00	\$164.00	\$119.00				HR/UNIT
47	MISCELLANEOUS DETAILS				2	4	4	4			14	1	N/A	14
48	STANDARD DETAILS						2	2			4	8	N/A	1
	HOURS SUB-TOTAL		6	9	47	120	27	44			253			
	TOTAL LABOR COSTS		\$1,842.00	\$2,475.00	\$9,353.00	\$17,040.00	\$4,428.00	\$5,324.00						
	SUBTOTAL DRAINAGE TASKS										\$40,462.00			
	WATER & WASTEWATER - DESIGN													
	WATER & WASTEWATER - DESIGN													
49	UTILITY RESEARCH, CONFLICT ADJUSTMENTS & RELOCATION		1		1	2	4	8	16		32			
50	WATER & WASTEWATER DESIGN		1		1	2	8	8			20			
51	WATER & WASTEWATER - PLAN PRODUCTION													
52	PLAN & PROFILE (WATER & WASTEWATER)		1		1	6	8	16			32	4	1"=40'/1"=4'	8
	HOURS SUB-TOTAL		3		3	10	20	32	16		84			
	TOTAL LABOR COSTS		\$921.00		\$597.00	\$1,420.00	\$3,280.00	\$3,872.00	\$2,624.00					
	SUBTOTAL WATER & WASTEWATER TASKS										\$12,714.00			
	BRIDGE & RETAINING WALL													
	BRIDGE													
53	BRIDGE LAYOUT SHEETS		4		16	32	12	28			92	2	1"=40'/1"=4'	46
54	BRIDGE TYPICAL SECTIONS (CONCRETE & STEEL GIRDERS)		2		8	16	6	16			48	2	N/A	24
55	SUMMARY OF ESTIMATED QUANTITIES		2		4	24	8	12			50	1	N/A	50
56	BEARING SEAT ELEVATIONS		1		2	8	4	8			23	1	N/A	23
57	FOUNDATION LAYOUT		2		8	12	10	22			54	2	1"=50'	27
58	ABUTMENT 1		4		8	16	12	24			64	2	N/A	32
59	ABUTMENT 1 DETAILS		2		4	8	8	12			34	1	N/A	34
60	BENT 2 (TRANSITION CONCRETE TO STEEL GIRDERS)		2		16	20	10	20			68	2	N/A	34
61	BENT 3		4		8	16	12	24			64	2	N/A	32
62	BENT 4		4		8	16	12	24			64	2	N/A	32
63	CRASH WALL DETAILS		2		12	16	8	16			54	2	N/A	27
64	BENT 5 (TRANSITION STEEL TO CONCRETE GIRDERS)		2		16	20	10	20			68	2	N/A	34
65	BENT 6		4		8	16	12	24			64	2	N/A	32
66	BENT 7		4		8	16	12	24			64	2	N/A	32
67	BENT 8		4		8	16	12	24			64	2	N/A	32
68	BENT DETAILS		2		8	12	12	16			50	2	N/A	25
69	ABUTMENT 9		4		8	16	12	24			64	2	N/A	32
70	ABUTMENT 9 DETAILS		2		4	8	8	12			34	1	N/A	34
71	GIRDER LAYOUT UNIT 1 (SPAN 1)(Tx GIRDERS)		1		4	8	8	12			33	1	N/A	33
72	GIRDER LAYOUT UNIT 2 (SPAN 2, 3, 4)(STEEL GIRDERS PLAN LAYOUT)		2		16	24	12	20			74	2	N/A	37
73	GIRDER LAYOUT UNIT 2 (SPAN 2, 3, 4)(STEEL GIRDERS ELEVATIONS)		4		24	40	32	60			160	8	N/A	20
74	STEEL GIRDER DETAILS		1		8	16	4	8			37	2	N/A	19
75	GIRDER LAYOUT UNIT 3 (SPAN 5, 6)(Tx GIRDERS)		1		6	12	8	16			43	1	N/A	43
76	GIRDER LAYOUT UNIT 4 (SPAN 7, 8)(Tx GIRDERS)		1		6	12	8	16			43	1	N/A	43
77	SLAB PLAN & DETAILS (UNIT 1)		1		2	4	4	10			21	1	N/A	21
78	SLAB PLAN & DETAILS (UNIT 2)		2		6	12	12	30			62	3	N/A	21
79	SLAB PLAN & DETAILS (UNIT 3)		1		4	8	8	20			41	2	N/A	21
80	SLAB PLAN & DETAILS (UNIT 4)		1		4	8	8	20			41	2	N/A	21
81	PRESTRESSED CONCRETE I-GIRDER DESIGNS		1		2	8	4	10			25	1	N/A	25
82	BORING LOGS					1	2	4			7	6	N/A	1
83	STANDARD DETAIL SHEETS				4		8	16			28	30	N/A	1
84	RAILROAD EXHIBIT A SHEETS		2		8	16	12	28			66	2	N/A	33
85	RAILROAD REQUIREMENTS FOR BRIDGE CONSTRUCTION SHEETS				1		4	8			13	4	N/A	3
86	BRIDGE LIGHTING SUPPORT DETAILS				4	12	8	16			40	2	N/A	20
	RETAINING WALL													
87	RETAINING WALL PLAN & PROFILE		6		12	24	26	62			130	6	1"=40'/1"=4'	22
88	RETAINING WALL DESIGN DATA		2		2	4	2	4			14	1	N/A	14
89	RETAINING WALL STANDARD DETAILS				2		2	6			10	2	N/A	5
90	PEDESTRIAN ACCOMODATION DETAILS		2		4	32	12	28			78	3	N/A	26
91	COMPUTATION BINDER		4		12						16		N/A	
92	QA/QC REVIEWS		24								24		N/A	
	HOURS SUB-TOTAL		107		285	529	364	744			2029			
	TOTAL LABOR COSTS		\$32,849.00		\$56,715.00	\$75,118.00	\$59,696.00	\$90,024.00						
	SUBTOTAL BRIDGE & RETAINING WALL TASKS										\$314,402.00			

2023 Fort Bend County Mobility Program FM 762/10th Street Bridge Overpass of UPRR Project No. 13106												CobbFendley & Associates, Inc. 4424 W. Sam Houston Parkway N, Suite 600 Houston, TX 77041			
FM 762/10TH STREET BRIDGE OVERPASS OF UPRR - DESIGN & BID PHASE: MANHOUR & FEE ESTIMATE															
TASK NO.	TASK DESCRIPTION	1	2	3	4	5	6	7	8	9	TOTAL MH'S PER WORK TASK & COSTS	ESTIMATED PLAN SHEET REQUIREMENTS		MANHOUR PER SHEET	
		TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION										QNTY	SCALE		
		PRINCIPAL	PROJ MGR	SENIOR HYDRO ENGR	PROJ ENGR III	PROJ ENGR I	SENIOR TECH II	CAD OPERATOR	UTILITY SPECIALIST	CLERICAL				HR/UNIT	
		\$330.00	\$307.00	\$275.00	\$199.00	\$142.00	\$164.00	\$121.00	\$164.00	\$119.00					
	TRAFFIC SIGNAL, SIGNING, PAVEMENT MARKINGS &TRAFFIC CONTROL PLAN														
	TRAFFIC SIGNAL DESIGN														
93	AGENCY COORDINATION		5		5	6	4				20				
94	SITE VISIT & SURVEY VERIFICATION				4	4					8				
95	TRAFFIC SIGNAL TIMING (BASED ON COUNTS PROVIDED BY FBC & TxDOT)				8	12					20				
	TRAFFIC SIGNAL - PLAN PRODUCTION														
96	TRAFFIC SINGAL NOTES & STANDARDS				4	6	4	4			18	4	N/A	5	
97	EXISTING CONDITION DIAGRAM		1		3	6	6	6			22	1	1"=40'	22	
98	TRAFFIC SIGNAL PLAN LAYOUT		2		4	2	24	16			48	1	1"=40'	48	
99	ELECTRICAL SCHEDULE, SIGN DESIGN, PHASING DIAGRAM		2		6	9	12				29	1	N/A	29	
	SIGNING &PAVEMENT MARKINGS - PLAN PRODUCTION														
100	SIGNING & PAVEMENT MARKING LAYOUTS				2	4	6	24			36	2	1"=40'	18	
101	MISCELLANEOUS SIGN DETAILS				2	2	4	4			12	1	N/A	12	
102	STANDARD DETAILS						2	2			4	2	N/A	2	
	TRAFFIC CONTROL PLAN														
103	TRAFFIC CONTROL PLAN LAYOUT		2		8	16					26				
104	TRAFFIC CONTROL PLAN NARRATIVE				1		1	2			4	1	N/A	4	
105	TRAFFIC CONTROL PLAN - PHASE I				2	2	4	12			20	2	1"=40'	10	
106	TRAFFIC CONTROL PLAN - PHASE II				2	2	4	12			20	2	1"=40'	10	
107	TRAFFIC CONTROL PLAN - DETOUR LAYOUT				2	2	2	16			22	2	N/A	11	
108	STANDARD DETAILS						2	2			4	14	N/A	0	
	HOURS SUB-TOTAL		12		53	73	75	100			313				
	TOTAL LABOR COSTS		\$3,684.00		\$10,547.00	\$10,366.00	\$12,300.00	\$12,100.00							
	SUBTOTAL TRAFFIC SIGNAL, S&PM , TRAFFIC CONTROL PLAN TASKS										\$48,997.00				
	STORMWATER POLLUTION PREVENTION PLAN														
109	STORM WATER POLLUTION PREVENTION PLAN					2	4	10			16	2	1"=40'	8	
110	STANDARD DETAILS						2	2			4	2	N/A	2	
	HOURS SUB-TOTAL					2	6	12			20				
	TOTAL LABOR COSTS					\$284.00	\$984.00	\$1,452.00			\$2,720.00				
	SUBTOTAL STORMWATER POLLUTION PREVENTION PLAN TASKS										\$2,720.00				
SUBTOTAL DESIGN PHASE MANHOURS (BASIC SERVICES)		24	318	17	617	946	623	1106	32	12	3695				
SUBTOTAL DESIGN PHASE COSTS (BASIC SERVICES)		\$7,920.00	\$97,626.00	\$4,675.00	\$122,783.00	\$134,332.00	\$102,172.00	\$133,826.00	\$5,248.00	\$1,428.00	\$610,010.00				
BASIC SERVICES - CONTRACT & BIDDING															
111	ATTEND PRE-BID MEETING		4		4						8				
112	QUESTIONS & ADDENDA		8		16	8					32				
113	TABULATION & RECOMMENDATION OF BID		2			4				2	8				
	HOURS SUB-TOTAL		14		20	12				2	48				
	TOTAL LABOR COSTS		\$4,298.00		\$3,980.00	\$1,704.00				\$238.00					
	SUBTOTAL CONTRACT & BIDDING TASKS										\$10,220.00				
TOTAL MANHOURS (BASIC SERVICES)		24	332	17	637	958	623	1106	32	14	3743				
TOTALCOSTS (BASIC SERVICES)		\$7,920.00	\$101,924.00	\$4,675.00	\$126,763.00	\$136,036.00	\$102,172.00	\$133,826.00	\$5,248.00	\$1,666.00	\$620,230.00				

2023 Fort Bend County Mobility Program FM 762/10th Street Bridge Overpass of UPRR Project No. 13106										CobbFendley & Associates, Inc. 4424 W. Sam Houston Parkway N, Suite 600 Houston, TX 77041		
10TH STREET AT CLAY STREET ROUNDABOUT (INCORPORATION INTO CLAY STREET) - DESIGN & BID PHASE: MANHOUR & FEE ESTIMATE												
TASK NO.	TASK DESCRIPTION	1	2	3	4	5	6	7	8	TOTAL MH'S PER WORK TASK & COSTS	ESTIMATED PLAN SHEET REQUIREMENTS	MANHOUR PER SHEET
		TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION									QNTY	HR/UNIT
		PRINCIPAL	PROJ MGR	PROJ ENGR III	SENIOR TECH III	CAD OPERATOR	CONSTRUCTION MANAGER	CONSTRUCTION INSPECTOR	CLERICAL			
		\$330.00	\$307.00	\$199.00	\$164.00	\$121.00	\$272.00	\$177.00	\$119.00			
	BASIC SERVICES - PROJECT MGMT & PLAN PRODUCTION											
1	MEETINGS & COORDINATION W/STAKEHOLDERS (FBC ENG & CITY OF RICHMOND)		8	2						10		
2	INCORPORATE ROUNDABOUT HORZ/VERT ALIGNEMENTS & SURVEY CONTROL INTO CLAY ST PLANS			2	4					6		
3	INCORPORATE TYPICAL SECTIONS & STORM SEWER INTO CLAY ST PLANS			2		8				10		
3	ROADWAY SHEETS		2	6	24	16				48	18	3
4	WATER & WASTEWATER			2	3	4				9	3	3
5	CROSS SECTIONS & EARTHWORK CALCULATIONS			2	8					10	5	2
6	TCP INCLUDING CONSTRUCTION PHASING			2		8				10	2	5
7	SW3P					4				4	1	4
8	SIGNING & PAVEMENT MARKING			1		7				8	2	4
9	LIGHTING LAYOUT FOR 500 LF OF CLAY ST			1	6					7	2	4
10	MISC. DETAILS			1	6					7	3	2
11	QUANTITIES			1	6					7		
12	COST ESTIMATES		2							2		
13	QA/QC		6							6		
TOTAL PROJECT MGMT & PLAN PRODUCTION MANHOURS (BASIC SERVICES)			18	22	57	47				144	36	
TOTALPROJECT MGMT & PLAN PRODUCTION COSTS (BASIC SERVICES)			\$5,526.00	\$4,378.00	\$9,348.00	\$5,687.00				\$24,939.00		

2023 Fort Bend County Mobility Program

Fort Bend County Project No. 13106

Sponsor: Fort Bend County

FM 762/10th Street Bridge Overpass on UPRR

Consultant: Cobb, Fendley & Associates, Inc.

Expense Estimate						
Task	Deliveries	Miles	Mileage (\$0.655 per mile)	Reproduction	Review Fees (TDLR)	Total Cost
Project Management						
Project kick-off meeting (1)	\$0	200	\$131	\$0	\$0	\$131
Attend status meetings (6)	\$0	300	\$197	\$0	\$0	\$197
Prepare invoice (monthly) (12)	\$0		\$0	\$0	\$0	\$0
Update project status (12)	\$0		\$0	\$0	\$0	\$0
Project coordination (project staff & subs)	\$0		\$0	\$0	\$0	\$0
Preliminary Design						
Traffic Data collection	\$0		\$0	\$0	\$0	\$0
Conduct field visits	\$0	300	\$197	\$0	\$0	\$197
Typical sections	\$0		\$0	\$0	\$0	\$0
Horz/Vert alignments	\$0		\$0	\$0	\$0	\$0
Alternatives analysis	\$0		\$0	\$0	\$0	\$0
Traffic studies	\$0		\$0	\$0	\$0	\$0
Drainage studies	\$0		\$0	\$0	\$0	\$0
Construction sequencing/TCP	\$0		\$0	\$0	\$0	\$0
Utility coordination	\$0		\$0	\$0	\$0	\$0
Right-of-Way requirements	\$0		\$0	\$0	\$0	\$0
Construction cost estimate	\$0		\$0	\$0	\$0	\$0
Interagency coordination	\$0		\$0	\$0	\$0	\$0
Prepare draft PER	\$0		\$0	\$0	\$0	\$0
Prepare final PER	\$0		\$0	\$1,000	\$0	\$1,000
QA/QC	\$0		\$0	\$0	\$0	\$0
Final Design						
Revise horz/vert alignments	\$0		\$0	\$0	\$0	\$0
Drainage design	\$0	300	\$197	\$0	\$0	\$197
Utility coordination	\$0	300	\$197	\$0	\$0	\$197
Agency approvals (TxDOT, Drainage District, TDLR)	\$0		\$0	\$0	\$0	\$0
Prepare 50% submittal						
Cover sheet	\$0		\$0	\$0	\$0	\$0
Typical sections	\$0		\$0	\$0	\$0	\$0
Layout sheet	\$0		\$0	\$0	\$0	\$0
Drainage area map	\$0		\$0	\$0	\$0	\$0
Plan & profiles	\$0		\$0	\$0	\$0	\$0
Traffic control plan	\$0		\$0	\$0	\$0	\$0
Stormwater pollution prevention plans	\$0		\$0	\$0	\$0	\$0
Traffic signals	\$0		\$0	\$0	\$0	\$0
Illumination	\$0		\$0	\$0	\$0	\$0
Bridges	\$0		\$0	\$0	\$0	\$0
Details	\$0		\$0	\$0	\$0	\$0
Quantities	\$0		\$0	\$0	\$0	\$0
Cost Estimates	\$0		\$0	\$0	\$0	\$0
Technical specifications	\$0		\$0	\$0	\$0	\$0
QA/QC	\$0		\$0	\$0	\$0	\$0

2023 Fort Bend County Mobility Program

Fort Bend County Project No. 13106

Sponsor: Fort Bend County

FM 762/10th Street Bridge Overpass on UPRR

Consultant: Cobb, Fendley & Associates, Inc.

Expense Estimate						
Task	Deliveries	Miles	Mileage (\$0.655 per mile)	Reproduction	Review Fees (TDLR)	Total Cost
Prepare 100% submittal						
Cover sheet	\$0		\$0	\$0	\$0	\$0
General notes	\$0		\$0	\$0	\$0	\$0
Typical sections	\$0		\$0	\$0	\$0	\$0
Layout sheet	\$0		\$0	\$0	\$0	\$0
Drainage area map	\$0		\$0	\$0	\$0	\$0
Plan & profiles	\$0		\$0	\$0	\$0	\$0
Traffic control plan	\$0		\$0	\$0	\$0	\$0
Cross sections	\$0		\$0	\$0	\$0	\$0
Stormwater pollution prevention plans	\$0		\$0	\$0	\$0	\$0
Traffic signals	\$0		\$0	\$0	\$0	\$0
Signing & pavement markings	\$0		\$0	\$0	\$0	\$0
Illumination	\$0		\$0	\$0	\$0	\$0
Bridges	\$0		\$0	\$0	\$0	\$0
Details	\$0		\$0	\$0	\$0	\$0
Quantities	\$0		\$0	\$0	\$0	\$0
Cost Estimates	\$0		\$0	\$0	\$0	\$0
Prepare project manual (specifications, bid forms)	\$0		\$0	\$0	\$0	\$0
QA/QC	\$0		\$0	\$0	\$0	\$0
Prepare final submittal						
Cover sheet	\$0		\$0	\$0	\$0	\$0
General notes	\$0		\$0	\$0	\$0	\$0
Typical sections	\$0		\$0	\$0	\$0	\$0
Layout sheet	\$0		\$0	\$0	\$0	\$0
Drainage area map	\$0		\$0	\$0	\$0	\$0
Plan & profiles	\$0		\$0	\$0	\$0	\$0
Traffic control plan	\$0		\$0	\$0	\$0	\$0
Cross sections	\$0		\$0	\$0	\$0	\$0
Stormwater pollution prevention plans	\$0		\$0	\$0	\$0	\$0
Traffic signals	\$0		\$0	\$0	\$0	\$0
Signing & pavement markings	\$0		\$0	\$0	\$0	\$0
Illumination	\$0		\$0	\$0	\$0	\$0
Bridges	\$0		\$0	\$0	\$0	\$0
Details	\$0		\$0	\$0	\$0	\$0
Quantities	\$0		\$0	\$0	\$0	\$0
Cost Estimates	\$0		\$0	\$0	\$0	\$0
Prepare complete project manual (specs, bid forms and front end docs)	\$0		\$0	\$500	\$0	\$500
QA/QC	\$0		\$0	\$0	\$0	\$0
Bid Phase						
Attend Pre-Bid Meeting	\$0	126	\$83	\$0	\$0	\$83
Questions & Addenda	\$0		\$0	\$0	\$0	\$0
Tabulation & Recommendation of Bid	\$0		\$0	\$0	\$0	\$0
Total Cost=	\$0		\$1,000	\$1,500	\$0	\$2,500

2023 Fort Bend County Mobility Program

Fort Bend County Project No. 13106

Sponsor: Fort Bend County

Incorporation of the 10th Street Roundabout into Clay & 2nd Street Construction Plans

Consultant: Cobb, Fendley & Associates, Inc.

Expense Estimate						
Task	Deliveries	Miles	Mileage (\$0.655 per mile)	Reproduction	Review Fees (TDLR)	Total Cost
Project Management						
Project kick-off meeting (1)	\$0		\$0	\$0	\$0	\$0
Attend status meetings (6)	\$0		\$0	\$0	\$0	\$0
Prepare invoice (monthly) (12)	\$0		\$0	\$0	\$0	\$0
Update project status (12)	\$0		\$0	\$0	\$0	\$0
Project coordination (project staff & subs)	\$0		\$0	\$0	\$0	\$0
Preliminary Engineering Report						
Traffic Data collection	\$0		\$0	\$0	\$0	\$0
Conduct field visits	\$0		\$0	\$0	\$0	\$0
Typical sections	\$0		\$0	\$0	\$0	\$0
Horz/Vert alignments	\$0		\$0	\$0	\$0	\$0
Alternatives analysis	\$0		\$0	\$0	\$0	\$0
Traffic studies	\$0		\$0	\$0	\$0	\$0
Drainage studies	\$0		\$0	\$0	\$0	\$0
Construction sequencing/TCP	\$0		\$0	\$0	\$0	\$0
Utility coordination	\$0		\$0	\$0	\$0	\$0
Right-of-Way requirements	\$0		\$0	\$0	\$0	\$0
Construction cost estimate	\$0		\$0	\$0	\$0	\$0
Interagency coordination	\$0		\$0	\$0	\$0	\$0
Prepare draft PER	\$0		\$0	\$0	\$0	\$0
Prepare final PER	\$0		\$0	\$0	\$0	\$0
QA/QC	\$0		\$0	\$0	\$0	\$0
Final Design						
Revise horz/vert alignments	\$0		\$0	\$0	\$0	\$0
Drainage design	\$0		\$0	\$0	\$0	\$0
Utility coordination	\$0		\$0	\$0	\$0	\$0
Agency approvals (TxDOT, Drainage District, TDLR)	\$0		\$0	\$0	\$0	\$0
Prepare 50% submittal						
Cover sheet	\$0		\$0	\$0	\$0	\$0
Typical sections	\$0		\$0	\$0	\$0	\$0
Layout sheet	\$0		\$0	\$0	\$0	\$0
Drainage area map	\$0		\$0	\$0	\$0	\$0
Plan & profiles	\$0		\$0	\$0	\$0	\$0
Traffic control plan	\$0		\$0	\$0	\$0	\$0
Stormwater pollution prevention plans	\$0		\$0	\$0	\$0	\$0
Traffic signals	\$0		\$0	\$0	\$0	\$0
Illumination	\$0		\$0	\$0	\$0	\$0
Bridges	\$0		\$0	\$0	\$0	\$0
Details	\$0		\$0	\$0	\$0	\$0
Quantities	\$0		\$0	\$0	\$0	\$0
Cost Estimates	\$0		\$0	\$0	\$0	\$0
Technical specifications	\$0		\$0	\$0	\$0	\$0
QA/QC	\$0		\$0	\$0	\$0	\$0

2023 Fort Bend County Mobility Program


Fort Bend County Project No. 13106

Sponsor: Fort Bend County

Incorporation of the 10th Street Roundabout into Clay & 2nd Street Construction Plans

Consultant: Cobb, Fendley & Associates, Inc.

Prepare 100% submittal						
Cover sheet	\$0		\$0	\$0	\$0	\$0
General notes	\$0		\$0	\$0	\$0	\$0
Typical sections	\$0		\$0	\$0	\$0	\$0
Layout sheet	\$0		\$0	\$0	\$0	\$0
Drainage area map	\$0		\$0	\$0	\$0	\$0
Plan & profiles	\$0		\$0	\$0	\$0	\$0
Traffic control plan	\$0		\$0	\$0	\$0	\$0
Cross sections	\$0		\$0	\$0	\$0	\$0
Stormwater pollution prevention plans	\$0		\$0	\$0	\$0	\$0
Traffic signals	\$0		\$0	\$0	\$0	\$0
Signing & pavement markings	\$0		\$0	\$0	\$0	\$0
Illumination	\$0		\$0	\$0	\$0	\$0
Bridges	\$0		\$0	\$0	\$0	\$0
Details	\$0		\$0	\$0	\$0	\$0
Quantities	\$0		\$0	\$0	\$0	\$0
Cost Estimates	\$0		\$0	\$0	\$0	\$0
Prepare project manual (specifications, bid forms)	\$0		\$0	\$0	\$0	\$0
QA/QC	\$0		\$0	\$0	\$0	\$0
Prepare final submittal						
Cover sheet	\$0		\$0	\$0	\$0	\$0
General notes	\$0		\$0	\$0	\$0	\$0
Typical sections	\$0		\$0	\$0	\$0	\$0
Layout sheet	\$0		\$0	\$0	\$0	\$0
Drainage area map	\$0		\$0	\$0	\$0	\$0
Plan & profiles	\$0		\$0	\$0	\$0	\$0
Traffic control plan	\$0		\$0	\$0	\$0	\$0
Cross sections	\$0		\$0	\$0	\$0	\$0
Stormwater pollution prevention plans	\$0		\$0	\$0	\$0	\$0
Traffic signals	\$0		\$0	\$0	\$0	\$0
Signing & pavement markings	\$0		\$0	\$0	\$0	\$0
Illumination	\$0		\$0	\$0	\$0	\$0
Bridges	\$0		\$0	\$0	\$0	\$0
Details	\$0		\$0	\$0	\$0	\$0
Quantities	\$0		\$0	\$0	\$0	\$0
Cost Estimates	\$0		\$0	\$0	\$0	\$0
Prepare complete project manual (specs, bid forms and front end docs)	\$0		\$0	\$0	\$0	\$0
QA/QC	\$0		\$0	\$0	\$0	\$0
Construction Management Phase						
Construction Inspection	\$0		\$0	\$0	\$0	\$0
Construction Administration	\$0	0	\$0	\$0	\$0	\$0
Miscellaneous Direct Expenses	\$0		\$0	\$1,200	\$0	\$1,200
Total Cost=	\$0		\$0	\$1,200	\$0	\$1,200

Survey Dept. Budget Proposal (2023 Rate Schedule)									<div>CobbFendley</div>				
Date/Prepared By: Project: Location: Client: Proposal #	12/6/2023												
	Existing (See Right)	D\cfa		Note:									
		10th Street											
		FBC - Mahmoud			10 HOUR DAYS FOR FIELD TIME 8 HOUR DAYS FOR OFFICE TIME								
	STAFF TYPE HOURLY RATE	RPLS \$199.00	Sr. Tech II \$164.00	Sr. Tech I \$142.00	Tech III \$121.00	Tech II \$102.00	3-M FC \$184.00	2-M FC \$156.00	RESEARCH \$142.00	CLERICAL \$91.00	GPS TCH \$121.00	GPS \$40.00	TOTALS
Task 1	Design Survey 1,450LF (US90A & FM762/Union/S.10th)	2	0	32	8	8	80	0	0	8	0	0	138
		\$398.00	\$0.00	\$4,544.00	\$968.00	\$816.00	\$14,720.00	\$0.00	\$0.00	\$728.00	\$0.00	\$0.00	\$22,174.00
Task	Boundary (Determine Existing RIGHT-OF-WAY)	16	0	36	2	2	0	18	0	2	0	0	76
		\$3,184.00	\$0.00	\$5,112.00	\$242.00	\$204.00	\$0.00	\$2,808.00	\$0.00	\$182.00	\$0.00	\$0.00	\$11,732.00
Task	Abstracting/Research	0	0	0	0	0	0	0	14	0	0	0	14
		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,988.00	\$0.00	\$0.00	\$0.00	\$1,988.00
Task	Right of Entry (exluded)	4	0	4	0	0	0	0	0	8	0	0	43
		\$199.00	\$0.00	\$568.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$728.00	\$0.00	\$0.00	\$1,495.00
Task	Update RIGHT-OF-WAY Sheet(s) (exluded)	2	8	40	8	0	0	0	0	0	0	0	58
		\$398.00	\$1,312.00	\$5,680.00	\$968.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8,358.00
Task	DTM/TIN (Microstation) (exluded)	4	0	30	0	0	0	0	0	0	0	0	34
		\$199.00	\$0.00	\$4,260.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,459.00
Task 8	Additional Survey (1 day per Engineer request)	1	0	4	1	1	0	10	0	1	0	0	18
		\$199.00	\$0.00	\$568.00	\$121.00	\$102.00	\$0.00	\$1,560.00	\$0.00	\$91.00	\$0.00	\$0.00	\$2,641.00
REIMBURSABLE ESTIMATE													\$0.00
TOTAL HOURS PER STAFF TYPE		23	8	146	19	11	80	28	14	19	0	0	348
TOTAL COST PER STAFF TYPE		\$4,577.00	\$1,312.00	\$20,732.00	\$2,299.00	\$1,122.00	\$14,720.00	\$4,368.00	\$1,988.00	\$1,729.00	\$0.00	\$0.00	\$38,535.00
*Boundary survey amount shown is subject to state sales tax, and is NOT included in the totals listed hereon.													
Option	Parcel Acquisition (Each) (exluded)	2	4	0	40	2	0	4	0	4	0	0	23
		\$398.00	\$656.00	\$0.00	\$1,240.00	\$204.00	\$0.00	\$624.00	\$0.00	\$91.00	\$0.00	\$0.00	\$3,183.00

Project Name	10 TH Street Extension
Consultant	SUE - COBBFENDLEY
Date	2023-12-06

SUBSURFACE UTILITY ENGINEERING: UNIT COSTS				
	QTY	UNIT	RATE	COST
QL A Test Holes (including SUE, TCP, survey, reports)	4	each	\$ 2,500.00	\$ 10,000.00
SUBTOTAL				\$ 10,000.00



11555 Clay Road, Suite 100
Houston, Texas 77043
P (713) 690-8989
Terracon.com

October 26, 2023

Cobb, Fendley & Associates, Inc.
22316 Grand Corner Drive, Suite 100
Katy, Texas 77494

Attn: Mr. Darrell Kaderka, P.E. – Senior Project Manager
P: (713) 485-8183
E: darrell.kaderka@cobbfendley.com

RE: Cost Estimate for Geotechnical Engineering Services
FM 762 and Tenth Street Bridge Overpass
Richmond, Texas
Terracon Document No. P92235559.Revision1

Dear Mr. Kaderka:

Terracon Consultants, Inc. (Terracon) understands that we have been selected based on qualifications to provide geotechnical engineering services for the above referenced project. This document outlines our understanding of the scope of services to be performed by Terracon for this project and provides an estimate of the cost of our services.

Exhibit A	Project Understanding
Exhibit B	Scope of Services
Exhibit C	Compensation and Project Schedule
Exhibit D	Site Location
Exhibit E	Anticipated Exploration Plan

Our base fee to perform the Scope of Services described in this cost estimate is **\$112,760.** **Exhibit C** includes details of our fees and consideration of additional services as well as a general breakdown of our anticipated schedule.

Cost Estimate for Geotechnical Engineering Services

FM 762 and Tenth Street Bridge Overpass | Richmond, Texas

October 26, 2023 | Terracon Document No. P92235559.Revision1



The scope of services described in this proposal shall be performed in accordance with a mutually agreed-upon client's Subcontract for Professional Services, which will be signed once the budget estimate is accepted, and upon completion of review by our legal department. We will provide you with comments, once our review is complete. If you have any questions, please do not hesitate to contact us.

We appreciate the opportunity to provide this scope document and look forward to the opportunity of working with you.

Sincerely,

Terracon Consultants, Inc.

(Texas Firm Registration No.: F-3272)

A handwritten signature in blue ink that reads 'YenChih Wang' in a cursive style.

YenChih (Mark) Wang, Ph.D., P.E., LEED GA
Project Engineer

A handwritten signature in blue ink that reads 'Karla Stringer' in a cursive style.

Karla I. Stringer, P.E.
Group Manager

A handwritten signature in blue ink that reads 'Adam White' in a cursive style.

Adam White, P.E.
Texas Transportation Program Manager

Exhibit A – Project Understanding

Our Scope of Services is based on our understanding of the project as described by Cobb, Fendley & Associates, Inc. (CobbFendley) and the expected subsurface conditions as described below. We have not visited the project site to confirm the information provided. Aspects of the project, undefined or assumed, are highlighted as shown below. We request the design team verify all information prior to our initiation of field exploration activities.

Planned Construction

Item	Description
Project Description¹	<p>The proposed project consists of the construction of a new four-lane, two-way overpass to extend FM 762 over the existing Union Pacific Railroad (UPRR) easement and Preston Street to the existing intersection of Tenth Street, Powell Street, and Fields Street in Richmond, Texas.</p> <p>Construction is planned to include the following.</p> <ul style="list-style-type: none"> ■ An approximately 80-foot-wide, 750-foot-long, 8-span overpass bridge, with a maximum vertical clearance of about 32 feet. ■ Mechanically stabilized earth (MSE) retaining walls along each bridge approach and abutment (six total walls). The approach retaining walls are planned to extend a maximum of 350 feet from the bridge abutments and have a maximum height of about 20 feet. ■ Associated pavements along the alignment. <p>We also understand the project includes the description of the subgrade soils and existing pavement structure thicknesses along Jackson Street (US 90A) at the intersection with the proposed bridge.</p>
Bridge Foundation Type	Drilled straight shafts
Maximum Loads	Bridge foundation: In accordance with the maximum allowable service loads recommended in the July 2020 TxDOT Geotechnical Manual.

1. We understand the proposed bridge is planned to be designed and constructed in accordance with Texas Department of Transportation (TxDOT) Geotechnical Investigation Guidelines.

Site Location and Anticipated Conditions

Item	Description
Parcel Information	<p>The project extends from the intersection of FM 762 and US 90A approximately 1,450 feet eastward to Powell/Fields Street in Richmond, Texas. (See Exhibit D)</p> <p>We understand that all parcels along the alignment have been acquired by Fort Bend County and that no right-of-entry documentation will be required.</p>
Existing Improvements	Based on available aerial images and drawing provided by CobbFendley, the site is occupied by paved roadways, UPRR railroad tracks, and commercial and residential developments.
Current Ground Cover	Asphaltic concrete, grass, weeds, and scattered trees
Existing Topography	Relatively level
Site Access	We expect the site, and all exploration locations, are accessible with our all-terrain vehicle (ATV)-mounted drilling/Cone Penetration Testing (CPT) equipment and support vehicles during normal business hours.
Expected Subsurface Conditions	Our experience near the vicinity of the proposed development and review of geologic maps indicates subsurface conditions consist of thick interbedded layers of clay, fine sand, and silt from the Beaumont Formation.

Exhibit B - Scope of Services

Our proposed Scope of Services consists of field exploration, laboratory testing, and engineering/project delivery. These services are described in the following sections.

Field Exploration

Based on input provided by CobbFendley and our experience with similar projects, we propose the following field exploration program:

Planned Location ¹	Number of Borings (Boring IDs)	Planned Boring Depth (feet) ²
Existing pavement areas along US 90A	4 (P-1 through P-4)	5
Proposed MSE retaining wall areas	2 (RW-1 and RW-2)	20
Proposed bridge foundation and MSE retaining wall areas	2 (B-1 and B-4)	100
Proposed bridge foundation areas	2 (B-2 and B-3)	120
Total	10	500

1. The planned boring locations are shown on the attached **Anticipated Exploration Plan**.
2. Below grade at the time of our field program.

Planned Location ¹	Number of CPTs (CPT IDs)	Planned CPT Depth (feet) ^{2, 3}
Proposed MSE retaining wall areas	2 (CPT-1 and CPT-4)	20
Proposed bridge foundation and MSE retaining wall areas	2 (CPT-2 and CPT-3)	30
Total	4	100

1. The planned CPT locations are shown on the attached **Anticipated Exploration Plan**.
2. Below grade at the time of our field program.
3. The CPTs will be terminated at the proposed termination depth or to depth of refusal, whichever occurs first.

Boring/CPT Layout and Elevations: We will use handheld GPS equipment to locate exploration points with an estimated horizontal accuracy of +/-25 feet. Field measurements from existing site features may be utilized. If available, approximate elevations will be obtained by interpolation from a site specific, surveyed topographic map.

Based on recent demolition, buried structures may be encountered during drilling. If an obstruction is encountered, we will offset from the original location to complete the boring/CPT.

Subsurface Exploration Procedures: We will advance borings/CPTs with an ATV-mounted drill/CPT rig. Borings will be also advanced using continuous flight augers and/or rotary wash boring techniques. We plan to core the existing pavement to access the underlying base and subgrade materials at proposed borings P-1 through P-4, B-1, and B-3. The borings will be characterized by obtaining soil samples and by performing in-situ strength tests by means of the Texas Cone Penetration (TCP) test using an automatic hammer.

Three to five samples will be obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. Soil sampling is typically performed using open-tube and/or split-barrel sampling procedures. Since TCP tests will be performed, an automatic hammer with a weight of 170-lbs and drop height of 2 feet will be used to advance the split-barrel sampler at the borings. The samples will be placed in appropriate containers, taken to our soil laboratory for testing, and classified by a Geotechnical Engineer. In addition, we will observe and record groundwater levels during drilling and sampling.

Our exploration team will prepare field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials observed during drilling and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation and include modifications based on observations and laboratory tests. CPT logs will be prepared by the Geotechnical Engineer.

Property Disturbance: Terracon will take reasonable efforts to reduce damage to the property. However, it should be understood that in the normal course of our work some disturbance could occur including rutting of the ground surface and damage to landscaping.

We will backfill borings/CPTs with bentonite pellets upon completion. Pavements will be patched with cold-mix asphalt, as appropriate. Our services do not include repair of the site beyond backfilling our boreholes and cold patching existing pavements. Excess auger cuttings will be dispersed in the general vicinity of the boreholes. Because backfill material often settles below the surface after a period, we recommend boreholes to be periodically checked and backfilled, if necessary. We can provide this service, or grout the boreholes for additional fees, at your request.

Site Access: Terracon must be granted access to the site by the property owner. We understand that all parcels along the alignment have been acquired by Fort Bend County and that no right-of-entry documentation will be required. Without information to the

contrary, we consider acceptance of this cost estimate as authorization to access the property for conducting field exploration in accordance with the Scope of Services. Our proposed fees do not include time to negotiate and coordinate access with landowners or tenants. Terracon will conduct field services during normal business hours (Monday through Friday between 7:00am and 5:00pm). If our exploration must take place over a weekend or at night, please contact us so we can adjust our schedule and fee.

Safety

Terracon is not aware of environmental concerns at this project site that would create health or safety hazards associated with our exploration program; thus, our Scope considers standard OSHA Level D Personal Protection Equipment (PPE) appropriate. Our Scope of Services does not include environmental site assessment services, but identification of unusual or unnatural materials observed while drilling will be noted on our logs.

Exploration efforts require borings (and possibly excavations) into the subsurface, therefore Terracon will comply with Texas 811, a free utility locating service, to help locate public utilities within dedicated public easements. We will consult with the landowner/client regarding potential utilities or other unmarked underground hazards. Based upon the results of this consultation, we will consider the need for alternative subsurface exploration methods as the safety of our field crew is a priority.

Private utilities should be marked by the owner/client prior to commencement of field exploration. Terracon will not be responsible for damage to private utilities not disclosed to us.

Terracon's Scope of Services does not include private utility locating services. If the landowner/client is unable to accurately locate private utilities, and it becomes apparent that the risk of private utilities on/near the site exists, then Terracon will initiate these services by forwarding the additional scope and corresponding fee to our client for approval.

The detection of underground utilities is dependent upon the composition and construction of the utility line; some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private utility locate service would not relieve the landowner/client of their responsibilities in identifying private underground utilities.

Traffic Control: For the work scope of this cost estimate we have budgeted for subcontracting traffic control services (signage and flagman) during our drilling activities, which is anticipated to take two days at proposed exploration locations P-1 through P-4, B-1, and B-3. This cost estimate is based on the assumption that one traffic lane can be

closed temporarily within a hundred feet (+/-) of our drill rig during drilling activities. Alternatively, others could provide all required traffic control as a cost savings measure.

Laboratory Testing

The project engineer will review field data and assign laboratory tests to understand the engineering properties of various soil strata. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods are applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test to be performed. Exact types and number of tests cannot be defined until completion of fieldwork, but we anticipate the following laboratory testing may be performed:

- Tex-103-E Determining Moisture Content in Soil Materials
- Tex-104-E Determining Liquid Limits of Soils
- Tex-105-E Determining Plastic Limits of Soils
- Tex-106-E Calculating Plasticity Index of Soils
- Tex-110-E Particle Size Analysis of Soils
- Tex-111-E Determining the Amount of Material in Soils Finer than the 75 micrometer (No. 200) Sieve
- Tex-118-E Triaxial Compression Test for Undisturbed Soils
- ASTM D2166 Unconfined Compressive Strength of Soil
- ASTM D2435 One Dimensional Consolidation Properties of Soil

Our laboratory testing program includes observation of soil samples by an engineer. Based on the results of our field and laboratory programs, we will describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

Engineering and Project Delivery

The results of our field and laboratory programs will be evaluated, and a geotechnical engineering report will be prepared under the supervision of a licensed professional engineer. The geotechnical engineering report will provide recommendations for the following:

- Earthwork including site and subgrade preparation
- Bridge foundation design parameters and construction
- Wincore capacity curves
- LPILE parameters (LPILE analyses to be performed by others)
- Settlement analyses for the bridge approach embankments
- Global stability analyses for MSE retaining walls

- External stability analyses for MSE retaining walls

We request that the bridge layouts, retaining wall layouts, and cross-sections along the alignment be provided in order to perform the analyses described above.

In addition to an emailed report, your project will also be delivered using our **Client Portal**. Upon initiation, we provide you and your design team the necessary link and password to access the website (if not previously registered). Each project includes a calendar to track the schedule, an interactive site map, a listing of team members, access to the project documents as they are uploaded to the site, and a collaboration portal. We welcome the opportunity to have project kickoff conversations with the team to discuss key elements of the project and demonstrate features of the portal. The typical delivery process includes the following:

- Project Planning – Project information, schedule, and anticipated exploration plan
- Site Characterization – Findings of the site exploration and laboratory results
- Geotechnical Engineering Report

When services are complete, we upload a printable version of our completed Geotechnical Engineering report, including the professional engineer's seal and signature, which documents our services. Previous submittals, collaboration, and the report are maintained in our system. This allows future reference and integration into subsequent aspects of our services as the project goes through final design and construction. In addition to our signed and sealed Geotechnical Engineering report, we also plan to provide the following deliverables.

- Wincore CLG files
- Signed/sealed MSE design data (MSEDD) sheets (sheets to be prepared by others)
- Signed/sealed soil boring data sheets (sheets to be prepared by others)

Exhibit C - Compensation and Project Schedule

Compensation

Based upon our understanding of the site, the project as summarized in **Exhibit A**, and our planned Scope of Services outlined in **Exhibit B**, our base fee is shown in the following table:

Task	Lump Sum Fee
Subsurface Exploration	\$56,073
Laboratory Testing and Data Processing	\$22,442
Geotechnical Consulting and Reporting	\$34,245
Total	\$112,760

Our Scope of Services does not include services associated with pavement design, survey of boring locations, site clearing, special equipment for wet/soft ground conditions, tree or shrub clearing, or repair of damage to existing landscape. If such services are desired by the owner/client, we should be notified so we can adjust our Scope of Services.

We will submit our invoice(s) to the address shown at the beginning of this cost estimate. If conditions are encountered that require Scope of Services revisions and/or result in higher fees, we will contact you for approval, prior to initiating services. A supplemental cost estimate stating the modified Scope of Services as well as its effect on our fee will be prepared. We will not proceed without your authorization.

Project Schedule

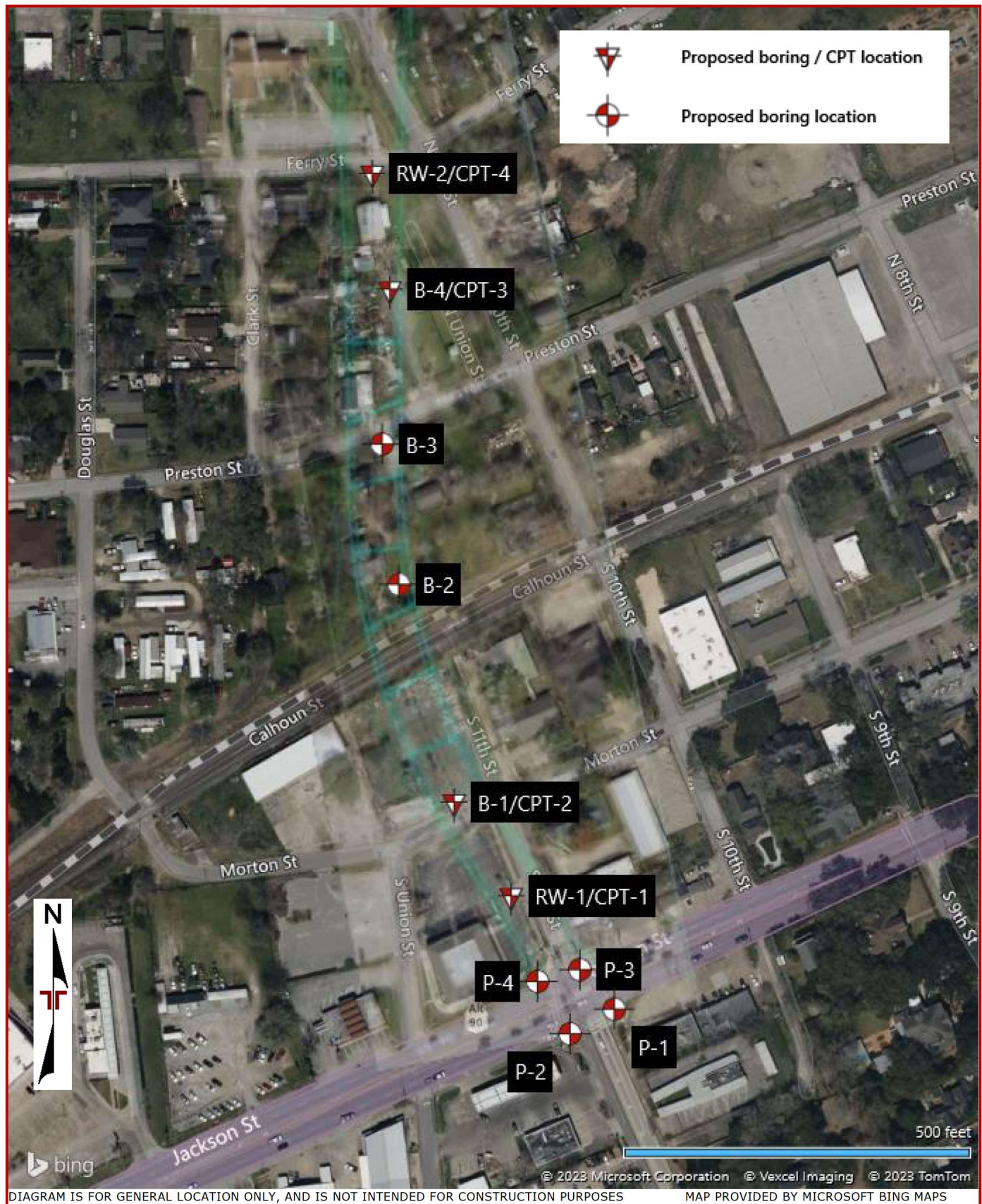
We developed a schedule to complete the Scope of Services based upon our existing availability and understanding of your project schedule. However, our schedule does not account for delays in field exploration beyond our control, such as weather conditions, delays resulting from utility clearance, or lack of permission to access the boring locations. In the event the schedule provided is inconsistent with your needs, please contact us so we may consider alternatives.

Delivery on Client Portal	Schedule ^{1, 2, 3}
Project Planning	10 working days after notice to proceed
Field Work Mobilization	15 working days from notice to proceed
Site Characterization	25 working days after completion of field program

Delivery on Client Portal	Schedule ^{1, 2, 3}
Geotechnical Engineering	20 working days after receipt of design information as described in Exhibit C

1. Upon receipt of your notice to proceed we will activate the schedule component on **Client Portal** with specific, anticipated dates for the delivery points noted above as well as other pertinent events.
2. Standard workdays. We will maintain an activities calendar within on **Client Portal**. The schedule will be updated to maintain a current awareness of our plans for delivery.
3. The schedule is dependent on the receipt of the required design plans to conduct the geotechnical engineering analyses described herein.

Exhibit E – Anticipated Exploration Plan



CJ Hensch & Associates, Inc.

Specializing in Traffic Data Collection

Brian Castille
Brian Castille, PE
Cobb, Fendley & Associates, Inc.
1506 E. Broadway, Suite 201 , TX 77581

Account Number 0059
Quote Number 2024-00027
Issue Date 1/10/2024
Due Date 4/9/2024

Date	Project/Item	Shipping	Time/QTY	Price	Taxes	Total
1/10/2024	Turning Movement Count (Weekday) - 24 Hours	None	2	925.00		1,850.00
Sub-Total:						\$1,850.00
Total:						\$1,850.00
Balance Owing:						\$1,850.00

Net 90

QUOTE ONLY

We need to get a quote for 24-hr TMCs for these two intersections (FM 762 at US 90A and 10th St at US 90A) in Richmond:

ID	Task Name	Duration	Start	Finish	Timeline											
					Qtr 1, 2024 Jan	Feb	Mar	Qtr 2, 2024 Apr	May	Jun	Qtr 3, 2024 Jul	Aug	Sep	Qtr 4, 2024 Oct	Nov	Dec
1	FM 762/10th Street Bridge Design Phase	209 days?	Mon 1/15/24	Thu 10/31/24	<div></div>											
2	Design Phase Kickoff	0 days	Mon 1/15/24	Mon 1/15/24	<div></div>											
3	Geotechnical Investigation	70 days	Mon 1/15/24	Fri 4/19/24	<div></div>											
4	Survey (TOPO/ROW/Control); Level A SUE	30 days	Mon 1/22/24	Fri 3/1/24	<div></div>											
5	TxDOT Driveway Permit	209 days	Tue 1/30/24	Fri 11/15/24	<div></div>											
6	Railroad Coordination	209 days	Tue 1/30/24	Fri 11/15/24	<div></div>											
7	Preliminary Geometrical Layout	5 days	Mon 3/4/24	Fri 3/8/24	<div></div>											
8	Preliminary Bridge Layout	14 days	Mon 3/11/24	Thu 3/28/24	<div></div>											
9	Roadway & Drainage Design	14 days	Mon 3/11/24	Thu 3/28/24	<div></div>											
10	Bridge Design	56 days	Mon 3/25/24	Mon 6/10/24	<div></div>											
11	Water & Sewer Design	10 days	Wed 4/3/24	Tue 4/16/24	<div></div>											
12	Traffic Control & SW3P	21 days	Tue 4/9/24	Tue 5/7/24	<div></div>											
13	Traffic Signal Layout & Design	30 days	Mon 3/11/24	Fri 4/19/24	<div></div>											
14	70% PS&E Preparation	30 days	Wed 5/8/24	Tue 6/18/24	<div></div>											
15	70% PS&E Submittal	0 days	Tue 6/18/24	Tue 6/18/24	<div></div>											
16	70% Submittal Review	30 days	Wed 6/19/24	Tue 7/30/24	<div></div>											
17	90% Submittal Preparation	28 days	Wed 7/31/24	Fri 9/6/24	<div></div>											
18	90% Submittal	0 days	Fri 9/6/24	Fri 9/6/24	<div></div>											
19	90% Submittal Review	30 days	Mon 9/9/24	Fri 10/18/24	<div></div>											
20	100% Submittal Preparation	5 days	Mon 10/21/24	Fri 10/25/24	<div></div>											
21	100% Submittal	0 days	Fri 10/25/24	Fri 10/25/24	<div></div>											
22	100% Submittal Review	10 days	Mon 10/28/24	Fri 11/8/24	<div></div>											
23	Bid Package Preparation	5 days	Mon 11/11/24	Fri 11/15/24	<div></div>											
24	Bid Package Submittal	0 days	Fri 11/15/24	Fri 11/15/24	<div></div>											

Project: FM 762/10th Street Bridge (UPRR Overpass) From US 90A to Fields Street Date: Tue 1/9/24	Task	<div></div>	Project Summary	<div></div>	Manual Task	<div></div>	Start-only	<div></div>	Deadline	<div></div>
	Split	<div></div>	Inactive Task	<div></div>	Duration-only	<div></div>	Finish-only	<div></div>	Progress	<div></div>
	Milestone	<div></div>	Inactive Milestone	<div></div>	Manual Summary Rollup	<div></div>	External Tasks	<div></div>	Manual Progress	<div></div>
	Summary	<div></div>	Inactive Summary	<div></div>	Manual Summary	<div></div>	External Milestone	<div></div>		

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