ENGINEERING SERVICES AGREEMENT

THIS AGREEMENT is made and entered by and between COLLIN COUNTY, TEXAS, a political subdivision of the State of Texas, hereinafter referred to as "County", and,_BGE, Inc., a _Texas_ Corporation, hereinafter referred to as "Engineer", to be effective from and after the date as provided herein.

WITNESSETH:

WHEREAS, the County desires to engage the services of the Engineer for CR 398 "Project"; and

WHEREAS, the Engineer desires to render such engineering services for the County upon the terms and conditions provided herein.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That for and in consideration of the covenants contained herein, and for the mutual benefits to be obtained hereby, the parties hereto agree as follows:

1. Retention of the Engineer

The County hereby agrees to retain the Engineer to perform professional engineering services in connection with the Project; Engineer agrees to perform such services in accordance with the terms and conditions of this Agreement, exercising the same degree of care, skill, and diligence as is ordinarily possessed and exercised by a member of the same profession, currently practicing, under similar circumstances.

II. Scope of Services

2.1 The parties agree that Engineer shall perform such services as are set forth herein and described in Exhibit “A”, which is attached hereto and thereby made a part of this Agreement. Work for each phase shall be preceded by a Notice to Proceed issued by County. The parties understand and agree that deviations or modifications in the form of written change orders may be authorized from time to time by the County.

2.2 The Engineer will serve as County’s professional engineering representative under this Agreement, providing professional engineering, consultation, advice and furnishing customary services incidental thereto. The Engineer agrees to cooperate and coordinate with other design professionals, the County and its contractors to help facilitate efficient construction of the Project and maintain the Project schedule.

2.3 The Engineer shall advise the County with regard to the necessity for subcontract work such as special surveys, tests, test borings, or other subsurface investigations in connection with design and engineering work to be performed hereunder. The Engineer shall also advise the County concerning the results of same. Such survey, test, and investigations shall be furnished to the County.

2.4 The presence or duties of the Engineer’s personnel at a construction site, whether as on-site representatives or otherwise, do not make the Engineer or its personnel in any way

responsible for those duties that belong to County's construction contractors or other entities, and do not relieve the construction contractors or any other entity of their obligations, duties, and responsibilities, including but not limited to, all construction methods, means, techniques, sequences and procedures necessary for completing all portions of the construction work in accordance with the Contract Documents and any health or safety precautions required by such construction work. The Engineer and its personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with their work or any health or safety precautions.

2.5 The Engineer will make periodic recommendations for periodic construction progress payments to the construction contractor. Recommendations by the Engineer to the County for periodic construction progress payments to the construction contractor will be based on the Engineer's knowledge, information, and belief from sampling and observation that the work has progressed to the point indicated. Such recommendations do not represent that there are not other matters at issue between the County and the construction contractor that affect the amount that should be paid.

2.6 The Engineer agrees to provide a complete and coordinated set of drawings and specifications for the construction of the Project, exercising the same degree of care, skill, and diligence as is ordinarily possessed and exercised by a member of the same profession, currently practicing, under similar circumstances. Construction drawings, specifications, and other construction documents prepared by the Engineer or its consultants and submitted to the County for approval or contractors for bidding or negotiation purposes shall be complete and capable of construction "as is". While the utility of communications between design professionals and construction contractors for the purpose of clarifying design intent is recognized, the Project should be capable of construction without the necessity of formal revisions or contract modifications to provide missing design information after construction contracts are awarded. Said documents shall comply with all applicable codes, ordinances, statutes, and regulations governing the design of the Project.

2.7 The Engineer shall assist the County in the preparation and filing of documents required for the approval of governmental authorities having jurisdiction over the Project.

III. Schedule of Services

3.1 The Engineer agrees to commence its services immediately upon execution of this Agreement, or as otherwise directed in writing by the County, and to proceed diligently with said services to completion as described in the Completion Schedule attached hereto as Exhibit "B" and thereby made a part of this Agreement. Engineer shall not be considered in default of this Agreement for delays in performance caused by circumstances beyond its reasonable control. Should such circumstances occur, the Engineer shall, within a reasonable time of being prevented from performing, give written notice to the County describing the circumstances preventing continued performance and the efforts being made to resume performance of this Agreement.

3.2 In the event that the Engineer is delayed in the progress of the work on the Project by an act or neglect of the County, County's employees, or separate contractors employed by the County, or by changes ordered in the Project, fire, adverse weather conditions not reasonably anticipated, unavoidable casualties or other causes beyond the Engineer's control, or delay authorized by the County pending arbitration, or by other causes which the County and Engineer agree may justify delay, then the Contract Time shall be reasonably extended by Contract Amendment. The County shall have the right at any time to delay or

suspend the work or any part thereof for any reasonable time and if this happens, the Engineer's sole remedy for any delays or suspension shall be any extension of time. However, should the delay continue for more than one year past the original completion date in the completion

schedule, the Engineer may request to renegotiate their professional fee provided that the fee is reasonable and substantiated by documents showing the need for the requested increase. Any request for a fee increase shall be submitted to County for final approval. The County shall not be independently liable to the Engineer for any delay or interference caused by circumstances beyond the County's control or any delay caused by any other person or entity.

IV. Compensation and Method of Payment

The parties agree that Engineer shall be compensated for all services provided pursuant to this Agreement in the amount and manner described and set forth in the Payment Schedule attached hereto as Exhibit "C" and thereby made a part of this Agreement. Engineer further agrees that it will prepare and present such monthly progress reports and itemized statements as are described in said Exhibit "C". Payment will be made in accordance with The Texas Government Code, Title 10, Subtitle F, Chapter 2251. Engineer further agrees to the following terms prior to payment being due by County:

A. Invoice and Payment

(1) The Engineer shall provide the County sufficient documentation to reasonably substantiate the invoices.
(2) The Engineer will issue monthly invoices for all work performed under the Agreement.
(3) In the event of disputed or contested billing, only that portion so contested will be withheld from payment, and the undisputed portion will be paid. The County will exercise reasonableness in contesting any portion thereof. NO interest will accrue on any contested portion of the billing until mutually resolved.
(4) In the event of any conflict between Paragraph IV and Chapter 2251 of the Texas Government Code, The Texas Government Code shall prevail.

V. Information to be provided bv the County

5.1 The County agrees to furnish to Engineer, prior to the Engineer's commencement of its services, all that information set forth and described on Exhibit "D", which is attached hereto and thereby made a part of this Agreement.

5.2 The County will make its facilities accessible to the Engineer as required for the Engineer's performance of its services. The Engineer represents that it understands the scope of this Agreement and has reviewed and inspected the Project sites, and can fully perform its obligations pursuant to this Agreement. Any failure of the Engineer to acquaint itself with the available information will not relieve the Engineer from its responsibilities pursuant to this Agreement.

5.3 The County shall disclose, to the extent known to the County, the results of prior tests, inspections or investigations conducted for the Project upon request by the Engineer.

VI. Progress Meetings

In addition to providing the monthly progress reports as required under Paragraph IV herein above, Engineer agrees to attend all monthly progress meetings scheduled by County,

and at such meetings to outline work accomplished and special problem or delays encountered in connection with the Project during the previous report period, as well as planned work activities and special problems and delays anticipated for the next report period. The Engineer agrees to

cooperate and coordinate with other design professionals, the County and its contractors to help facilitate efficient construction of the Project and maintain the Project schedule.

VII. Insurance

Engineer agrees to meet all insurance requirements as set forth on Exhibit “E” which is attached hereto and thereby made a part of this Agreement.

VIII. Indemnity

Engineer agrees to indemnify the County to the fullest extent allowed by section 271.904 of the Texas Local Government Code, including payment of the County’s reasonable attorneys’ fees to the extent such is allowed under 271.904(b).

The Engineer must be in compliance with the provisions of Section 2254.0031 of the Texas Government Code, which incorporates by reference Section 271.904(d) of the Texas Local Government Code. The Engineer shall perform services (1) with professional skill and care ordinarily provided by competent Engineers practicing under the same or similar circumstances and professional license, and (2) as expeditiously as is prudent considering the ordinary professional skill and care of a competent Engineer.

IX. Independent Contractor

In the performance of services hereunder, the Engineer shall be deemed an independent contractor and shall not, with respect to its acts or omissions, be deemed an agent, subcontractor or employee of the County.

X. Assignment and Subletting

The Engineer agrees that neither this Agreement nor the services to be performed hereunder will be assigned or sublet without the prior written consent of the County. The Engineer further agrees that the assignment or subletting or any portion or feature of the services required in the performance of this Agreement shall not relieve the Engineer from its full obligations to the County as provided by this Agreement.

XI. Audits and Records/Prohibited Interest

11.1 The Engineer agrees that at any time during normal business hours, and as often as County may deem necessary, Engineer shall make available to representatives of the County for examination all of its records with respect to all matters covered by this Agreement, and will permit such representatives of the County to audit, examine, copy and make excerpts or transcripts from such records, and to make audits of all contracts, invoices, materials, payrolls, records of personnel, conditions of employment and other data relating to all matters covered by this Agreement, all for a period of three (3) years from the date of final settlement of this Agreement or of such other or longer period, if any, as may be required by applicable statute or other lawful requirements.

11.2 The Engineer agrees that it is aware of the conflict of interest requirements of the state law which are applicable to persons entering into contracts with the County and will abide by the same. Further, a lawful representative of Engineer shall execute the Affidavit shown in Exhibit “F”. Engineer understands and agrees that the existence of a conflict of interest during the term of this Agreement will render the agreement voidable.

11.3 The Engineer acknowledges to the County that it has made full disclosure in writing of any existing conflicts of interest or potential conflicts of interest, including personal financial interest, direct or indirect, in property abutting the proposed Project and business relationships with persons or entities with interest in abutting properties.

XII. Contract Termination

The parties agree that County shall have the right to terminate this Agreement without cause upon thirty (30) days written notice to Engineer. In the event of such termination without cause, Engineer shall deliver to County all finished or unfinished documents, data, studies, surveys, drawings, maps, models, reports, photographs or other items prepared by Engineer in connection with this Agreement. Engineer shall have the right to terminate this Agreement upon thirty (30) days written notice to County in the event of the County's breach of any material term of this Agreement, including but not limited to compensation and method of payment. Regardless of which party initiates termination, Engineer shall be entitled to compensation for any and all services completed to the satisfaction of County in accordance with the provisions of this Agreement prior to termination.

XIII. Cost Estimates

The parties recognize and agree that any and all Engineer's estimates of probable construction costs (estimates) prepared by Engineer in connection with the Project represent the best judgment of Engineer as a design professional familiar with the construction industry, but that the Engineer has no control over costs or the price of labor, equipment or materials or over the Contractor's methods of pricing and does not guarantee that any bids solicited or received in connection with the Project will not vary from estimates prepared by Engineer.

XIV. Ownership of Documents

Original drawings and specifications (Instruments of Service) created by Engineer are the property of the Engineer; however, the Project is the property of the County, and Engineer may not use the drawings and specifications for any purpose not relating to the Project without County's consent. County shall be furnished with such reproductions of drawings and specifications as County may reasonably require. Upon completion of the services or any earlier termination of this Agreement under Article XII, and payment in full of all monies due Engineer, Engineer will revise drawings to reflect significant changes made during construction as per the marked-up prints, drawings, and other data furnished to the Engineer by or through the County or Contractor. Engineer will promptly furnish the County with one (1) complete set of reproducible record prints. All such reproductions shall be the property of the County who may use them without the Engineer's permission for any proper purpose relating to the Project, including but not limited to, maintenance of the Project, additions to the Project, or completion of the Project. The aforementioned revisions will be based upon information supplied by the County's construction contractor and will be assumed by Engineer to be complete and accurate. As such, Engineer shall not be responsible for errors or omissions resulting therefrom. Prints shall be furnished, as an additional service, at any other time requested by County. The County may use such drawings in any manner it desires; provided, however, that the Engineer shall not be liable for the use of such drawings for any project other than the Project described herein.

XV. Complete Contract

15.1 This Agreement, including the exhibits hereto numbered "A" through "F", constitute the entire agreement by and between the parties regarding the subject matter hereof and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified or canceled by a duly executed written instrument, signed by the County and the Engineer.

15.2 Warranties contained in this Agreement are in addition to and not in lieu of, any and all other liability imposed upon the Engineer by law with respect to the Engineer's duties, obligations, and performance hereunder. The Engineer's liability hereunder shall survive the County's final acceptance and payment for the Project. All representations and warranties set forth in this Agreement, including without limitation, this paragraph, shall survive the final completion of the Work or earlier termination of this Agreement. The Engineer acknowledges that the County is relying upon the Engineer's skill and experience in performing the services pursuant to this Agreement.

XVI. Mailing of Notices

Unless instructed otherwise in writing, Engineer agrees that all notices or communications to the County permitted or required under this Agreement shall be addressed to the County at the following address:

Tracy Homfeld
Engineering Assistant Director
4690 Community Ave., #200
McKinney, TX 75071

Yoon Kim
Collin County Administrator
2300 Bloomdale #4192
McKinney, TX 75071

Collin County Purchasing
2300 Bloomdale #3160
McKinney, TX 75071

County agrees that all notices or communications to Engineer permitted or required under this Agreement shall be addressed to Engineer at the following address:

Brian Reinhardt, PE
2595 Dallas Parkway, Suite 101
Frisco, Texas 75034
breinhardt@bgeinc.com

All notices or communications required to be given in writing by one party or the other shall be considered as having been given to the date such notice or communication is posted by the sending party.

XVII. Miscellaneous

A. Paragraph Headings

The paragraph headings contained herein are for convenience only and are not intended to define or limit the scope of any provision in this Agreement.

B. Interpret Contract Fairly

Although this Agreement is drafted by County, should any part be in dispute, the parties agree that the Agreement shall not be construed more favorable for either party.

C. Venue/Governing Law

The parties agree that the laws of the State of Texas shall govern this Agreement, and that it is performable in Collin County, Texas. The venue for any litigation related to this Agreement shall be in Collin County, Texas.

D. Parties Bound

County and Engineer, and their partners, successors, subcontractors, executors, legal representatives, and administrators are hereby bound to the terms and conditions of this Agreement.

E. Severability

In the event a term, condition, or provision of this Agreement is determined to be void, unenforceable, or unlawful by a court of competent jurisdiction, then that term, condition, or provision shall be deleted and the remainder of the Agreement shall remain in full force and effect.

F. Effective Date

This Agreement shall be effective from and after execution by both parties hereto.

G. Term of Agreement

The term of Agreement shall conform to the schedule as stipulated in Exhibit "B" attached herein. No other extension shall be authorized unless granted by written agreement between the County and Engineer.

H. Observe and Comply

Engineer shall at all times observe and comply with all federal and State laws and regulations and with all City ordinances and regulations which in any way affect this Agreement and the work hereunder, and shall observe and comply with all orders, laws, ordinances and regulations which may exist or may be enacted later by governing bodies having jurisdiction or authority for such enactment. No plea of misunderstanding or ignorance thereof shall be considered. Engineer agrees to defend, indemnify and hold harmless County and all of its officers, agents, and employees from and against all claims or liability arising out of the violation or any such order, law, ordinance, or regulation, whether it be by itself or its employees.

I. Expenses for Enforcement

In the event either Party hereto is required to employ an attorney to enforce the provisions of this Agreement or is required to commence legal proceedings to enforce the provisions hereof, the prevailing Party shall be entitled to recover from the other, reasonable attorney’s fees and court costs incurred in connection with such enforcement, including collection.

J. Force Majeure

No party shall be liable or responsible to the other party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement, when and to the extent such failure or delay is caused by or results from acts beyond the affected party’s reasonable control, including, without limitation: acts of God; flood, fire or explosion; war, invasion, riot or other civil unrest; actions, embargoes or blockades in effect on or after the date of this Agreement; or national or regional emergency (each of the foregoing, a “Force Majeure Event”). A party whose performance is affected by a Force Majeure Event shall give notice to the other party, stating the period of time the occurrence is expected to continue and shall use diligent efforts to end the failure or delay and minimize the effects of such Force Majeure Event.

2025-325 Engineering Services Agreement

WITNESS OUR HANDS AND SEALS on the date indicated below.

COLLIN COUNTY, TEXAS

Date: _____

By: _____
Michelle Charnoski, NIGP-CPP, CPPB
Purchasing Agent

Court Order No.: _____

Date: July 16, 2025

By: _____

Brian Reinhardt, PE
Print Name

Title: Principal

ACKNOWLEDGMENT

STATE OF TEXAS }
}
COUNTY OF COLLIN }

BEFORE ME, Kerri Fortney on this day personally appeared Brian Reinhardt, PE, of BGE, Inc., a Texas Corporation, known to me (or proved to me on the oath of _____ or through Texas Drivers License (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same as the act and deed of the corporation, for the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 16th day of July, 2025.

_____
Notary Public, State of Texas

KERRI J. FORTNEY
My Notary ID # 132278015
Expires January 3, 2028

Kerri Fortney
Printed Name

My Commission expires on the 3rd day of January, 2028.

STATE OF TEXAS }
}
COUNTY OF COLLIN }

BEFORE ME, _____ on this day personally appeared Michelle Charnoski, Purchasing Agent of COLLIN COUNTY, TEXAS, a political subdivision of the State of Texas, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same as the act and deed of COLLIN COUNTY, TEXAS, for the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this _____ day of _____, 20__.

_____
Notary Public, State of Texas

_____
Printed Name

My Commission expires on the _____ day of _____, _____.

EXHIBIT “A”

SCOPE OF SERVICES

Please see attached.

EXHIBIT “B”

FINAL DESIGN COMPLETION SCHEDULE

Refer to the attached schedule for deliverable/milestone dates. Actual deliverable/milestone dates may be subject to change based on delayed critical path task items that are outside of the control of the Engineer and/or the County. A revised project design schedule will be provided by the Engineer in the event that an adjustment is necessary.

This agreement shall be effective upon execution by both parties and shall be in effect until the project is fully completed.

EXHIBIT "C"

PAYMENT SCHEDULE

Invoices will be transmitted to the County on a monthly basis based on a percentage of completion up to that time, and payments to the Engineer will be made as follows:

A derivation of the total contract fee amount is attached.

EXHIBIT "D"

INFORMATION TO BE PROVIDED BY THE COUNTY

The County will make available to Engineer any and all information, data, etc. as it may have in its possession relating to any project.

EXHIBIT "E"

INSURANCE REQUIREMENTS

1.1 Before commencing work, the vendor shall be required, at its own expense, to furnish the Collin County Purchasing Agent with certified copies of all insurance certificate(s) indicating the coverage to remain in force throughout the term of this contract.

1.1.1 Commercial General Liability insurance at minimum combined single limits of ($1,000,000 per-occurrence and $2,000,000 general aggregate) for bodily injury and property damage, which coverage shall include products/completed operations at $2,000,000 per occurrence. Coverage must be written on an occurrence form.

1.1.2 Workers Compensation insurance at statutory limits, including employers liability coverage at $500,000. In addition to these, the contractor must meet each stipulation below as required by the Texas Department of Insurance, Division of Workers' Compensation. (Note: If you have questions concerning these requirements, you are instructed to contact the DWC at (512)440-3789).

1.1.2.1 Definitions: Certificate of coverage ("certificate"); A copy of a certificate of authority of self-insure issued by the commission, or a coverage agreement (DWC-81, DWC-82, DWC-83, OR DWC-84), showing statutory workers compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractor" in 406.096) includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

1.1.2.2 The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.

1.1.2.3 The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

1.1.2.4 If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must,

prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

1.1.2.5 The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

1.1.2.5.1 A certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

1.1.2.5.2 no later than seven (7) days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

1.1.2.6 The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

1.1.2.7 The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

1.1.2.8 The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

1.1.2.9 The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

1.1.2.9.1 provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;

1.1.2.9.2 provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;

1.1.2.9.3 provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

1.1.2.9.4 obtain from each other person with whom it contracts, and provide to the contractor:

1.1.2.9.4.1 a certificate of coverage, prior to the other person beginning work on the project; and

1.1.2.9.4.2 a new certificate of coverage showing extension of coverage, prior to the end of the coverage

period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

1.1.2.9.5 retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

1.1.2.9.6 notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

1.1.2.9.7 contractually require each person with whom it contracts, to perform as required by paragraphs 1.1.2.1 through 1.1.2.7, with the certificates of coverage to be provided to the person for whom they are providing services.

1.1.2.10 By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

1.1.2.11 The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

1.1.3 Commercial Automobile Liability insurance shall be no less than $1,000,000 combined single limits per accident for bodily injury and property damage, including owned, non-owned, and hired vehicle coverage.

1.1.4 Professional Liability Insurance at minimum limits of $1,000,000. This policy must have a two (2) year extended period of coverage, (i.e. tail coverage). If you choose to have project coverage endorsed onto your base policy, this would be acceptable.

1.2 The required limits may be satisfied by any combination of primary, excess or umbrella liability insurances, provided the primary policy complies with the above requirements and the excess umbrella is following form. The vendor may maintain reasonable and customary deductibles, subject to approval by County.

1.3 With reference to the foregoing insurance requirement, the vendor shall endorse applicable insurance policies as follows:

1.3.1 A waiver of subrogation in favor of County, its officials, employees, volunteers and officers shall be contained in all policies.

1.3.2 The vendor's insurance coverage shall name County as additional insured under the General Liability policy.

1.3.3 All insurance policies shall be endorsed to the effect that County will receive at least thirty (30) days' notice prior to cancellation, non-renewal or termination of the policy.

1.3.4 All copies of Certificates of Insurance shall reference the project/contract number.

1.4 All insurance shall be purchased from an insurance company that meets the following requirements:

1.4.1 A financial rating of A-VII or higher as assigned by the BEST Rating Company or equivalent.

1.5 Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent, and shall contain provisions representing and warranting the following:

1.5.1 Sets forth all endorsements and insurance coverages according to requirements and instructions contained herein.

1.5.2 Sets forth the notice of cancellation or termination to County.

EXHIBIT "F"

AFFIDAVIT OF REGULATION OF CONFLICTS OF INTEREST

The undersigned declares and affirms that during the term of this contract they will maintain compliance as defined in Vernon's Texas Codes Annotated, Local Government Code Title 5, Section C, Chapter 171.

I further understand and acknowledge that the existence of a conflict of interest at any time during the term of this contract will render the contract voidable.

Name of Firm: BGE, Inc.

Title of Officer: Principal

Signature of Officer:

Print Name: Brian Reinhardt, PE

Date: July 16, 2025

ACKNOWLEDGMENT

STATE OF TEXAS }
}
COUNTY OF _____ }

BEFORE ME, on this day personally appeared Brian Reinhardt, PE, known to me (or proved to me on the oath of _____ or through _____ (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this, the 16th day of July, 2025.

Notary Public, State of Texas

KERRI J. FORTNEY
My Notary ID # 132278015
Expires January 3, 2028

Kerri Fortney
Printed Name

My Commission expires on the 3rd day of January, 2028.

EXHIBIT "A"

SCOPE OF SERVICES

CR 398
Preliminary Engineering and Plans, Specifications and Estimate Preparation

PURPOSE

The Scope of Work to be performed by BGE, Inc. (the "ENGINEER") under this contract will consist of preliminary engineering and the preparation of final plans, specifications, and estimates (PS&E) for a 4-lane major arterial. The project limits are from the intersection of CR 398 (the "Project") and FM 546 to the 0.5 miles east of FM 546. Collin County (the "COUNTY") serves as the owner of the Project.

DETAILS

- The initial phase of the Project will consist of an alternatives analysis, utilizing public/stakeholder outreach and corridor alternatives analysis to assist in the identification and selection of a recommended alignment to move directly into PS&E.
    - Exhibits and kmz files will be developed for review purposes.
- Upon approval of the recommended alignment, the preparation of final plans, specifications, and estimates (PS&E) will be developed.
- The ENGINEER will prepare plans, specifications, and estimates, to include grading, paving, bridge, cross culvert drainage, storm drain, removals, traffic control/construction sequencing, storm water pollution prevention plans, signing & pavement markings, utility investigation/coordination, and miscellaneous details.
    - Additional improvements may be needed at the intersection of FM 546 and CR 398 and its approaches to accommodate turning movements and signalize intersection. A traffic analysis will be completed as part of Basic Services to confirm the need for these improvements.
    - Increment Services are included as part of this scope of work to accommodate these additional improvements. All scope of work related to Utility Coordination and Investigation (SUE) is also included as part of these services.
- Design Criteria and Standard Specifications for the project shall comply with the latest version of Collin County Roadway Standards, Collin County Drainage Design Standards, North Central Texas Council of Governments (NCTCOG) Public Works Construction Standards, Texas Department of Transportation (TxDOT) Roadway Design Manual, TxDOT Hydraulic Design Manual, the Texas Manual on Uniform Traffic Control Devices (TMUTCD), TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, and other COUNTY approved manuals. When design criteria are not clearly identified in State manuals, the ENGINEER refer to the American Association of State Highways and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets.
- The general parameters for design shall include the following:
    - This Project will be developed using Bentley OpenRoads Designer (ORD) and utilize English units of measure. All final plan sheets will be half size (11"x17").

- Cross sections shall be created at 100-foot increments for the Project and all critical locations, including cross streets with construction beyond existing right-of-way or easements.

- The work described in this scope of services will include the following major work tasks:
  - Basic Services
    - Assembly and Review of Data;
    - Corridor Alternatives Analysis, including Preliminary Engineering;
    - Public/Stakeholder Involvement;
    - PS&E Services, including Roadway Design, Drainage Design, Traffic Design, and Structural Design;
    - Project Management; and
    - Bid Phase Services.
  - Special Services
    - Survey;
      Geotechnical Services; and
    - Environmental Services.
  - Incremental Services
    - Additional PS&E Services, including Roadway Design, Drainage Design, and Traffic Design;
    - Additional Survey;
    - SUE;
    - Utility Coordination; and
    - Environmental Services.
- The ENGINEER will coordinate with and assist the COUNTY in preparing and distributing electronic plan sets to TxDOT, City of Lowry Crossing, and franchise utilities at Project milestones for review purposes.
- The ENGINEER will assist COUNTY in preparing TxDOT Form 1058, Permit to Construct Access Driveway Facilities on Highway Right of Way.

BASIC SERVICES

BS1. ASSEMBLY AND REVIEW OF DATA

Collection of Data, Reports, and Maps

The determination of data requirements, availability, and sources will be coordinated with the COUNTY. Once the data needs and sources are identified, the ENGINEER will contact the appropriate agencies and organizations to obtain the data. Data to be collected will include, but not be limited to:

- Utility plans and documents from appropriate municipalities and franchise utility companies.
- Readily available plan sets for crossing or abutting sections within the Project Limits.
- Readily available flood plain information and studies from the Federal Emergency Management Agency, FEMA, the Corps of Engineers and/or other governmental agencies.
- The ENGINEER will obtain electronic and/or hard copies from the COUNTY: GIS Data, drainage reports, mapping, survey, and improvement plans within the scoped area. The ENGINEER will

acquire from the COUNTY any aerial mapping and soil data for the designated area.

Field Reconnaissance

The ENGINEER will perform a corridor site visit to obtain field notes and digital photos along the project corridor.

Creation and Review of Base Files

The ENGINEER will review the data collected and from this information will:

- Integrate additional data into the study file and evaluate tasks for supporting documentation.
- Develop base CAD files (Bentley ORD) that will be utilized for corridor evaluation including, but not limited to:
    - Consideration of existing features, such as existing roadways, floodplains, streams, developments, environmentally sensitive areas, and major structures.
    - Consideration of future features, such as planned thoroughfares, utility corridors, utility improvements, approved plats, and adjacent engineering studies.
    - Existing utilities from visual analysis and additional SUE research.
    - FEMA flood plain limits converted from GIS.
    - Identified property boundaries and legal descriptions based on GIS data and surveyed data from Task SS1.

Preliminary Design Conference

The ENGINEER will attend a Kick-Off Meeting to review Project requirements, design criteria, communication protocols, scheduling, and other relevant factors that may influence the Project.

Develop Design Criteria

The ENGINEER shall apply appropriate Roadway Design Criteria based on TxDOT 4R guidelines and AASHTO A Policy on Geometric Design of Highways and Streets for urban arterials as appropriate. Design Criteria shall be maintained throughout the duration of the Project. Any major revision needed because of a manual update shall be coordinated with the COUNTY.

The ENGINEER shall prepare a Design Criteria Tabulation for the project and include:

- Identification of desirable values.
- References to manuals or guidelines used to develop design criteria.
- Identification of maximum and minimum values for drainage elements.
- Design criteria shall be submitted to the COUNTY for review and discussion at the Preliminary Design Conference.

BS2. CORRIDOR ALTERNATIVES ANALYSIS

The ENGINEER will utilize up to four (4) alternative alignments to develop an alternatives comparison matrix for further evaluation.

Alternate corridor evaluation will include the following:

1. Identification of impacts will consider, but not be limited to, each of the following categories:
    a. Enhanced Mobility and Safety
        i. Accessibility
        ii. Safety
    b. Cost-Benefit Ratio
        i. Construction Cost
        ii. ROW Acquisition Impact
        iii. Utility & Infrastructure Impacts
    c. Engineering Feasibility
        i. Traffic Impacts
        ii. Drainage Impacts
        iii. Constructability
        iv. Compatibility with Other Projects
    d. Environmental Impacts (See SS3. Environmental Services)
    e. Public Input (See BS4. Public/Stakeholder Involvement)
2. Preparation of Scoring Matrix for each impact (shown above).
    a. Initial results will be presented to the COUNTY for review and comment.
    b. ENGINEER shall prepare a PowerPoint presentation to include results of analysis and recommendations.

The ENGINEER will utilize the recommended corridor alignment to develop preliminary engineering for CR 398, consisting of a 4-lane major arterial, to establish ROW acquisition and easement needs.

The ENGINEER will prepare a preliminary engineering layout depicting the proposed improvements and right-of-way (ROW) needs for the project. The layout shall include:

- Proposed improvements, including intersections, roadway, drainage, driveways, and structural elements
- Station limits
- Lane lines and direction arrows indicating the number of lanes and traffic flow
- Existing ROW limits, drainage and construction easements
- Proposed ROW and easement limits

In addition to preparing the layout, the ENGINEER will:

1. Develop interim and ultimate typical roadway sections for proposed CR 398 facility.
2. Develop a preliminary 3D model of the proposed facility and apply roadway templates and end conditions throughout the corridor according to the proposed design.
3. Evaluate potential utility conflicts based on Level C/D/B/A SUE data.
4. The ENGINEER shall prepare a preliminary planning-level cost estimate.
5. Develop Draft Traffic Analysis Report

The ENGINEER will schedule up to three (3) conferences to discuss one or more of the following tasks: alternatives analysis, recommended alignment, traffic analysis report, and preliminary engineering layout. Paper copies will be provided at in-person meetings unless directed otherwise by the COUNTY.

Project Delivery

Prior to each submission, the ENGINEER will:

1. Log any previous COUNTY or stakeholder review comments in a Comment Response Log spreadsheet and provide a resolution for each comment.
2. Provide a Quality Control (QC) review of plans, calculations, documents, and other supporting design data, if requested by the COUNTY.
3. Provide a Quality Assurance (QA) audit of the QC review to assure all comments were addressed and/or resolved, if requested by the COUNTY.
4. Coordinate production of the milestone deliverables including printing, compiling electronic files, and preparation of a transmittal letter.

Task BS2 Deliverables

All deliverables shall be submitted in electronic format as specified by the COUNTY (PDF, KMZ, etc.).

1. Alternative Alignment Exhibits
2. Results of Comparison Scoring Matrices and Recommendations
3. Draft Traffic Analysis Report
4. Preliminary Engineering Layout
5. QA/QC Documentation, if requested

BS3. PUBLIC/STAKEHOLDER INVOLVEMENT

A. Public Involvement Management

This task provides for the monthly management of tasks and activities in coordination with property owners and stakeholders. The ENGINEER shall develop a tracking spreadsheet to track property owner input and record comments throughout the duration of the Project.

The ENGINEER shall coordinate with the following stakeholders:

- City of Princeton
- Lowry Crossing
- Developers
- TxDOT

The ENGINEER will assist the COUNTY with identifying and managing stakeholder input throughout the corridor area.

B. Meetings with Affected Property Owners

Up to one (1) in-person meeting per affected parcel is anticipated on the Project. 13 property exhibits are estimated. In-person meetings are assumed, but online meetings may be held as an alternate and require COUNTY approval. The ENGINEER shall develop parcel-specific exhibits to discuss impacts with each Property Owners and obtain comment.

C. Additional Property Owner/Stakeholder Coordination: Upon request, ENGINEER will prepare and present up to two (2) technical PowerPoint presentations during the preliminary design phase to provide a formal briefing to stakeholders on project schedule, design development, and future tasks.

Task BS3 Deliverables

1. Property Owner Comments and Responses
2. MAPO exhibits (up to 13 exhibits)
3. Up to two (2) technical PowerPoint presentations

BS4. ROADWAY DESIGN

GENERAL

Typical Sections

The ENGINEER shall prepare the existing and proposed typical sections of the roadway and cross streets. The existing pavement structures shall be based on available as-built plan data provided by the COUNTY.

Miscellaneous Sheets

- Title Sheet
- Index of Sheets
- Project Layout Sheets at 1" =500' scale
- Survey Control Data Sheets
- General Notes
- Estimate & Quantity Summary
- Summary of Quantities

TRAFFIC CONTROL

Traffic Control Plan

The ENGINEER shall prepare traffic control and sequence of construction plans at a scale of 1" = 100'. The TCP plan will show staged construction of the cross streets improvements to maintain local access. The plans shall identify work areas, temporary paving, temporary shoring, signing, detour alignments, barricades, temporary drainage, and other traffic control related items as required. A narrative will be prepared and submitted to the COUNTY for review and incorporation into the plans. Traffic control will utilize TxDOT standard details and meet the requirements of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

- Develop Traffic Control Advance Warning Layout

  In conjunction with the Traffic Control Layouts, the ENGINEER shall develop an overall advance warning layout in conformance with TxDOT standard requirements.

- Develop Traffic Control Typical Sections

  In conjunction with the Traffic Control Layouts, the ENGINEER shall develop typical cross sections showing lane widths, edge conditions, channelization, and proposed construction area. Typical sections will be shown on the traffic control layouts where needed.

- Develop Sequence of Construction, Narrative, and General Notes

  The ENGINEER shall develop a sequence of construction for the proposed improvements including a written narrative and any applicable general notes.

- Traffic Control Layouts

  The ENGINEER shall prepare layouts (1" = 100') showing the travel lanes and construction area for each phase of construction. Included in the layouts will be temporary signing and striping, channelization devices, barricades, and applicable notes.

- Intersection Staging Plans

  The ENGINEER shall develop typical intersection staging plans for similar intersections. Develop custom intersection staging layouts only for special conditions.

- Driveway Staging Plans

  The ENGINEER shall develop a typical driveway staging plan for similar driveways. Develop custom driveway staging layouts only for special conditions.

- TCP Quantities Summary Sheet

  The ENGINEER shall develop TCP Quantity Summary Sheets

- Detour Plans

The ENGINEER shall develop offsite detour routings on existing streets, roads, or highways, provide layouts of proposed routing, showing "trail blazing" signs at intersections.

- Traffic Control Standard Details

  The ENGINEER will select standard details applicable to the traffic control as needed for construction and include in the plans for the 60%, 90%, and final submittals.

ROADWAY

Horizontal Alignment Data Sheet

The ENGINEER shall provide plan sheets with all applicable horizontal alignment data along the project.

Removal Sheets

The ENGINEER shall provide removal layouts showing items to be removed at a 1" = 100' scale on stacked plan layout sheets. Surface features to be removed including driveways, streets, storm sewer piping, storm sewer inlets, abandoned water mains and abandoned sanitary sewer mains will be identified with approximate quantities on the removal sheets. It is assumed the franchised utilities will either remove their own equipment or will abandon it in place. Information on abandoned water mains and sanitary sewer will be provided by others. The removal of buildings and building foundations located within the proposed ROW is assumed to be within the scope of this contract and will be identified for removal.

Roadway Plan and Profiles

The ENGINEER shall develop the plan and profile sheets at a scale of 1" = 100' (on 11" x 17" sheets) for the Project and cross streets for this project. The ENGINEER shall refine the vertical alignment for the roadway based upon the approved design criteria and preliminary engineering. The horizontal curve data and vertical curve data shall be shown including "K" values. The vertical profiles shall use the approved preliminary engineering design as the starting profile, with minor adjustments as necessary.

Driveway Profiles / Details Summary

The ENGINEER shall analyze driveways within the project and develop driveway profiles as needed to ensure that driveways function as intended. No commercial driveways identified on project. Delineate the limits of construction outside of the right of way needed to secure an adequate driveway profile. Calculate and summarize driveway quantities.

Driveway details (dimensions, grades, and quantities) will be prepared in a tabular format.

Miscellaneous Roadway Details

Prepare necessary plan details to clarify the construction requirements of the paving facilities.

Roadway Cross Sections

The ENGINEER shall prepare proposed cross sections at a scale of 1" = 10' horizontal and 1" =10' vertical (on 11"X17" format) or appropriate scale for detail and review. Cross sections shall be created at all critical locations and on 100-foot increments and cross streets with construction beyond the radius return. Critical locations are identified as begin and end of each section and at bridge abutments.

The ENGINEER shall determine the quantities of cut and fill for each cross section and provide the earthwork quantities in a tabular format in the plans.

Assembly of Roadway Standards

The ENGINEER will select standard details applicable to the roadway design as needed for construction and include in the plans for the 60%, 90%, and final submittals.

QUALITY CONTROL (ROADWAY)

The ENGINEER will perform a Quality Control / Quality Assurance review based on the requirements in the *Project Quality Management Plan* (PQMP) including the following:

- QAQC will be performed prior to each submittal and the ENGINEER's QAQC review set will be made available for review along with each submittal.

BS5. DRAINAGE DESIGN

HYDROLOGIC AND HYDRAULIC INVESTIGATION

The ENGINEER shall perform drainage tasks to determine the approximate size and type of cross drainage structures. Cross drainage analysis will include a comparison of existing and future land use based on land uses in the watershed and the cross drainage structures needed for both conditions. Drainage tasks will be performed in accordance with COUNTY and TxDOT requirements.

Drainage crossings will be classified as regional or local, as follows:

Regional Crossing - A bridge that is designed for the primary purpose of conveying flows from one side of the roadway to the other. Culverts are classified as bridge class culverts when they provide an opening measured along the center of the roadway of more than 20 feet between the inside face of the culvert(s). Regional crossings should be analyzed using HEC-RAS.

Local Crossing - Any drainage crossing not classified as a regional crossing will be considered a local drainage crossing and will be analyzed using OpenRoads Designer Drainage and Utilities (ORD-DU), HY-8 or similar culvert modeling software.

The following drainage tasks will be performed in coordination with PS&E:

A. Local Cross Drainage

1. Drainage Area Mapping

   Delineate drainage area boundaries based on Collin County GIS data, North Central Texas Council of Governments (NCTCOG) contour maps, Texas Geographic Information Office (TxGIO) Lidar, United States Geological Survey (USGS) contour maps, or other suitable topographic maps, if available. A drainage area map exhibit will be presented on 11”x17” plan sheets at maximum 1" = 1000’ scale with topographic data shown and labeled and included in the Drainage Report.

2. Calculate Discharges

   Determine conveyance paths, channel slopes, time of concentration, Natural Resources Conservation Service (NRCS) curve numbers and other factors as required to determine frequency-discharge relationships using hydrologic models. Determine preliminary design flows for the crossings based on the design frequency and a check of the 100-yr event using the appropriate hydrologic method. Previous studies, including local studies, shall be obtained and considered during the hydrologic analysis. The results of the hydrologic calculations will be tabulated and presented in the Drainage Report.

3. Size & Locate Cross Drainage Structures

   Determine approximate cross drainage structure sizes denoting size, type, orientation, flowlines, tailwater, and headwater conditions. Evaluate existing cross culverts for extension. ORD-DU or HY-8 culvert analysis software will be used to size local culvert crossings. The results of the hydraulic calculations will be tabulated and presented in the Drainage Report. The ENGINEER will provide opinion of probable construction costs.

B. Regional Cross Drainage - 1 crossing (East Fork Trinity River)

1. Obtain and Review Available FEMA Data & Reports

   The ENGINEER will obtain available Flood Insurance Studies (FIS), Flood Insurance Rate Maps (FIRMs), Letters of Map Revisions (LOMR), and electronic data readily available from FEMA for East Fork Trinity River.

2. Drainage Area Mapping

   Delineate drainage area boundaries based on Collin County GIS data, North Central Texas Council of Governments (NCTCOG) contour maps, Texas Geographic Information Office (TxGIO) Lidar, United States Geological Survey (USGS) contour maps, or other suitable topographic maps, if available. A drainage area map will be included in the Drainage Report with topographic data shown and labeled.

3. Calculate Discharges

   Determine conveyance paths, channel slopes, time of concentration, Natural Resources Conservation Service (SCSNRCS) curve numbers and other factors as required to determine frequency-discharge relationships using hydrologic models. Determine preliminary design

flows for the crossings based on the design frequency and a check of the 100-yr event using the appropriate hydrologic method. Previous studies, including FEMA and local studies, shall be obtained and considered during the hydrologic analysis. The results of the hydrologic calculations will be tabulated and presented in the Drainage Report.

4. Develop Hydraulic Models

   The ENGINEER shall develop water surface profile models of open channels for existing/pre-project and proposed design conditions in accordance with COUNTY, TxDOT, and Federal Emergency Management Agency (FEMA) requirements. All relevant conveyance features, (channels, culverts, slab bridges, encroachments) will be included in the hydraulic analysis using the latest version HEC-RAS at the time this scope is executed.

5. Develop Alternative Drainage Schemes (up to 2)

   Based on the results of the discharge calculations and water surface profile models, the ENGINEER shall develop alternative schemes to alleviate potential adverse drainage issues (if any) associated with the roadway construction. An alternatives analysis will be performed to determine if cross drainage structures should be bridge class culverts or span bridges. The ENGINEER will develop preliminary layouts for up to 2 bridge-class culverts. The ENGINEER will provide opinion of probable construction costs.

6. Identify Easement Requirements

   The ENGINEER shall identify any required drainage easements needed to accommodate drainage facilities at inlet and discharge points along the route.

7. Scour Analysis

   A preliminary scour analysis will be preformed using an assumed d_{50} grain size based on known soil types in the project area.

C. Initial Closed Storm Sewer Analysis

The ENGINEER shall provide an approximation of trunk size and inlet spacing for the closed storm sewer system and ensure adequate drainage to an outfall location can be obtained. The ENGINEER shall determine ROW and easement needs and include the system in the opinion of probable construction cost. Summary of findings and associated exhibits shall be included as part of the drainage report.

D. Drainage Report

Upon completion of the hydraulic analyses and alternative evaluations of potential improvements for the project drainage system, the ENGINEER shall prepare a Drainage Report. A preliminary report will be submitted with the 60% PS&E deliverable and the final report will be submitted with the 90% PS&E submittal. The report shall include the following sections:

1. PROJECT FEATURES: location, study objectives, general stream and watershed information, and other pertinent facts.

2. HYDROLOGY: watershed description, soil and land use information, source of hydrologic data and methodology/models used to develop flow data, pertinent input data and parameters for hydrologic analyses; summary table of results for full range of peak discharges for 2-, 5-, 10-, 25-, 50-, 100-, yr events.
3. HYDRAULICS: overview of hydraulic modeling process, including data sources, specific model uses, descriptions of existing drainage structures, discussion of design alternatives and the results of respective hydraulic modeling for the scenarios evaluated; hydraulic model output data including existing, hydraulic data sheet, and proposed conditions summary tables; summary of assumptions made in preliminary closed storm sewer design.
4. SUMMARY OF CONCLUSIONS / RECOMMENDATIONS: summary of study objectives, alternatives being considered, opinions of probable costs and identification of preferred design alternatives.
5. PHOTOGRAPHS, FIGURES AND APPENDICES: all items necessary to support the analysis.
6. ELECTRONIC DATA: computer files of hydrologic and hydraulic modeling with appropriate labeling of location, project reference, and submittal date.
7. FINALIZED DOCUMENT: one (1) copy of final report with electronic submittal to include a PDF of the entire report.

Task BS6 Deliverables

1. Drainage Area Map Exhibits
2. Preliminary Drainage Report at 60% PS&E.
3. Final Drainage Report at 90% PS&E.
4. Opinion of Probable Construction Costs

HYDROLOGY

The ENGINEER shall subdivide the overall drainage areas into sub-areas and calculate the discharge directed to each proposed culvert or inlet. Prepare drainage area map identifying major sub-areas. The ENGINEER shall prepare drainage area maps on standard 11” x 17” plan sheets.

- Offsite drainage area map for the site (Scale of 1” = 1000’)
- Storm sewer inlet area maps. (Scale of 1” = 100’)

The ENGINEER shall show drainage flow calculations and display them in a table in the plan sheets.

The ENGINEER shall design storm sewer improvements for CR 398. The runoff to each inlet will be calculated in accordance with COUNTY criteria using the appropriate design frequency and as defined in the TxDOT Hydraulic Design Manual and as shown on standard TxDOT runoff and inlet computation plan sheets.

HYDRAULIC DESIGN

Hydraulic Design for Culverts, Bridge Waterways & Storm Sewer

The ENGINEER shall perform necessary hydraulic computations for the design of this project utilizing HEC-RAS, OpenRoads Designer Drainage and Utilities, HY-8, and/or other widely accepted hydraulic modeling software. Calculations will include culverts, bridge waterways, channels, storm sewers and inlets.

The ENGINEER shall provide hydraulic calculations to the COUNTY by showing the necessary information in the final plan set.

Bridge Hydraulic Reports

The ENGINEER shall utilize the hydrologic/hydraulic study prepared during the PS&E phase and HEC-HMS (or best available) data to determine discharges at the proposed crossings for the following FEMA regulated waterways:

- East Fork Trinity River Tributary 1

The ENGINEER shall conduct a field investigation to document the creek characteristics in the vicinity of the proposed crossings. The hydrologic model will be developed with existing land use conditions and future developed conditions. It is assumed that no channel realignment design will be required outside the proposed right-of-way.

The ENGINEER shall develop a hydraulic model of the existing channels and conditions using the channel survey data and field observation notes. Calibrate the model using available FEMA maps and information. The ENGINEER shall develop a hydraulic model of the proposed crossing utilizing the existing hydraulic model and incorporating the proposed structure.

The ENGINEER shall analyze and check scour impacts in accordance with the TxDOT Scour Evaluation Guide, September 2023.The ENGINEER shall prepare the Hydraulic Report for East Fork Trinity River Tributary 1 in accordance to the COUNTY and STATE criteria comparing the existing creek conditions with the proposed roadway crossing. The ENGINEER shall prepare working maps, profiles, cross sections, and tables to be included with the hydraulic report.

DRAINAGE STRUCTURE DESIGN

Hydraulic Data Sheets

The ENGINEER shall prepare hydraulic data sheets for any regional drainage structures. The hydraulic data sheets will be shown at 1” = 100’ on 11”x17” plan sheets unless otherwise needed.

Culvert Plan & Profiles

The ENGINEER shall prepare no more than one (1) non-bridge class culvert crossing layout sheets for each cross-drainage structure in accordance with COUNTY standards, the TxDOT Hydraulic Design Manual and the hydraulic computations developed utilizing OpenRoads Designer Drainage and Utilities,

HY-8 or other approved method. Prepare layouts at 1" = 20' on 11"x17" plan sheets unless otherwise needed.

Storm Sewer Plan & Profile Sheets

The ENGINEER shall prepare storm sewer plan sheets and profile sheets depicting storm sewer, inlets, and manholes necessary to drain the facility and convey the runoff to the designated discharge points. The storm sewer plan profiles will be consistent with the hydraulic computations developed using OpenRoads Designer Drainage and Utilities, or other widely accepted method, Collin County Drainage Design Manual, and the TxDOT Hydraulic Design Manual. Inlets, manholes and junctions will be in accordance with TxDOT standard details, unless otherwise noted. Prepare layouts at 1" = 100' on 11"x17" plan sheets unless otherwise needed.

Miscellaneous Drainage Details

The ENGINEER shall prepare necessary culvert details necessary to clarify the construction requirements of the drainage facilities and structural modifications to headwall design

Assembly of Drainage Standards

The ENGINEER shall select standard details applicable to the drainage design as needed for construction and include in the plans for the 60%, 90%, and final submittals.

OPEN CHANNEL DESIGN

Special Ditch/Channel Layout Sheets

East Fork Trinity River Tributary 1 channel grading sheets shall be prepared by the ENGINEER showing the proposed grading around and under the proposed bridge structure within the proposed right-of-way.

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

SW3P Data Sheet

The ENGINEER shall prepare SW3P on standard TxDOT SW3P plan sheet.

SW3P Layouts

The ENGINEER shall design a SW3P erosion control plan consistent with the project construction phases that will minimize sediment discharge from the project site through runoff. The ENGINEER shall prepare an erosion control plan at a 1" = 100' scale for each phase of construction.

Post-Construction Plans (BMP Control for TNRCC Section 401)

The ENGINEER will analyze/design the use of vegetative filter strips, grassy swales, special ditch grading, and other non-structural BMP controls within the proposed corridor. Any other BMP control designs, such as permanent detention and/or sedimentation ponds will be considered as additional services.

Temporary Drainage

The ENGINEER shall review the temporary drainage during phased construction by running cross sections at major phases of the TCP. The ENGINEER shall review drainage for positive flow and perform a low point review. Temporary drainage will not include hydrologic study but may include temporary pipes and ditch flow lines included in the phases of construction.

QUALITY CONTROL (DRAINAGE)

The ENGINEER will perform a Quality Control / Quality Assurance review based on the requirements in the *Project Quality Management Plan* (PQMP) including the following:

- QAQC will be performed prior to each submittal and the ENGINEER's QAQC review set will be provided with each submittal.

BS6. TRAFFIC DESIGN

SIGNING AND PAVEMENT MARKINGS

Signing and Pavement Marking Layout

The ENGINEER shall prepare a traffic signing and pavement marking layouts at a scale of 1" = 100' feet on a standard 11" x 17" plan sheets. The layouts will identify the locations of proposed signing and permanent pavement markings in accordance with applicable TxDOT standards and the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

Summary Tables

The ENGINEER shall prepare a small sign summary table utilizing TxDOT standard sheets.

Assembly of Sign and Marking Standards

The ENGINEER will select standard details applicable to the signing and marking design as needed for construction and include in the plans for the 60%, 90%, and final submittals.

ILLUMINATION

The ENGINEER will refer to TxDOT's Highway Illumination Manual and other deemed necessary State approved manuals for design of safety lighting at the following intersections.

- CR 398 at FM 546

The ENGINEER will prepare circuit wiring diagrams showing the number of luminaires on each circuit, electrical conductors, length of runs, and service pole assemblies.

TRAFFIC ANALYSIS

Development of Traffic Projections and Methodology

The ENGINEER will develop a methodology memorandum outlining the approach for projecting hourly turning movement traffic volumes at FM 546 and CR 398. This memorandum will document key data sources, underlying assumptions, and analytical methods used in the projection process. The ENGINEER will then develop traffic projections for AM, PM, and Average Daily Traffic (ADT) for FM 546 at CR 398 for the Opening Year (2030), Design Year (2050), and Pavement Design Year (2060). Additionally, the ENGINEER will estimate the truck percentage on CR 398 for the Pavement Design Year (2060). The ENGINEER will also develop hourly turning movement traffic projections for FM 546 and CR 398 for the Opening Year (2030), specifically for AM and PM peak hours, to support operational analyses.

Turn Bay Needs Assessment

The ENGINEER will conduct a turn bay needs assessment at FM 546 and CR 398 to evaluate operational performance and capacity requirements for the Opening Year (2030). This assessment will include an analysis of projected turning movement volumes for the AM and PM peak hours. Based on the findings, the ENGINEER will provide recommendations regarding potential turn bay configurations to enhance traffic flow and accommodate projected demand.

Data Collection

The ENGINEER will coordinate with a data collection firm to obtain a 24-hour turning movement count at FM 546 and CR 398. The ENGINEER will conduct a site visit to observe existing conditions, validate data assumptions, and document relevant roadway or traffic characteristics.

Deliverables

- Methodology Memorandum
- Turn Bay Needs Assessment and Recommendations
- 24-hour turning movement counts

SIGNALIZATION

No traffic signals are anticipated for the Project. If they become necessary as a result of Traffic Signal Warrant Analysis, the design will be provided as Incremental Services.

TRAFFIC SIGNAL WARRANT ANALYSIS

The ENGINEER shall perform a traffic signal warrant analysis for up one (1) intersection. The analysis will be performed in accordance with the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

QUALITY CONTROL (TRAFFIC)

The ENGINEER will perform a Quality Control / Quality Assurance review based on the requirements in the *Project Quality Management Plan* (PQMP) including the following:

- QAQC will be performed prior to each submittal and the ENGINEER's QAQC review set will be provided with each submittal.

BS7. STRUCTURAL DESIGN

RETAINING WALLS

No retaining walls are anticipated for the Project. If they become necessary, the design will be provided as Incremental Services.

BRIDGE AT EAST FORK TRINITY RIVER TRIBUTARY 1

The ENGINEER shall produce complete Bridge Layouts and Structural Details for the proposed East Fork Trinity River Tributary 1 Bridge. The structure is a single two-span bridge approximately 200' long and 60' wide with no skew. The structure will consist of prestressed concrete girders supported on a concrete substructure. The bridge layout will accommodate the construction sequence. The bridge will be designed for a 25 year event.

BRIDGE STRUCTURAL DETAILS

The ENGINEER shall prepare structural details for bridge. The details shall include abutment details, bent details, span/unit details and girder details. Design should comply with AASHTO LRFD Bridge Design Specification (9th Edition, 2020), TxDOT Bridge Design Manual-LRFD (Sep. 2024), Detailing Guide (Apr. 2022), and Geotechnical Manual (Jul. 2022). The ENGINEER shall utilize TxDOT approved software, including PGSuper, LEAP, and Lpile, to perform design analysis, and OpenRoads Designer to develop plan sets. The bridge will be designed to accommodate an ultimate two-direction, four lanes, and a sidewalk.

BRIDGE LAYOUTS

The ENGINEER shall prepare bridge layouts in accordance with TxDOT's Bridge Division Manuals. The ENGINEER shall determine the location of each soil boring needed for foundation design in accordance with the TxDOT Geotechnical Manual (Jul. 2022). The ENGINEER shall provide bridge construction sequencing details as needed.

FOUNDATION DESIGN

The ENGINEER shall develop the foundation design in accordance with the TxDOT's Bridge Division Geotechnical Manual (Jul. 2022).

BRIDGE TOTAL QUANTITIES AND COST ESTIMATES

The ENGINEER shall provide all of the bridge quantities and the estimate of probable cost for the bridge.

BEARING SEAT ELEVATIONS

The ENGINEER shall provide bearing seat elevations for each beam.

GENERAL GUIDELINES FOR BRIDGE DESIGN

The ENGINEER shall make final design calculations and provide information to the COUNTY. The bridge designs shall be in accordance with TxDOT's Bridge Division manuals. TxDOT standard details will be used to the extent possible.

BRIDGE CLASSIFICATION CULVERT LAYOUTS

No bridge class culverts are anticipated for the Project, if they become necessary the design will be provided as Incremental Services.

QUALITY CONTROL (BRIDGE)

The ENGINEER will perform a Quality Control / Quality Assurance review based on the requirements in the *Project Quality Management Plan* (PQMP) including the following:

- QAQC will be performed prior to each submittal and the ENGINEER's QAQC review set will be provided with each submittal.

BS8. PROJECT MANAGEMENT

Project Coordination and Resolution Meetings

The ENGINEER shall prepare for and attend the below listed meetings with the COUNTY with up to two (2) team members. Meetings will include the following:

- Design Kickoff Meeting
- 30% Design Status and Coordination Meeting
- 60% Comment Review Resolution Meeting

- 90% Comment Review Resolution Meeting
- Project Coordination Meetings with stakeholders (assume 18 meetings)

PS&E Package Coordination

The ENGINEER shall manage the assembly of the PS&E package to include the following:

- Plan assembly with sheet numbers.
- Coordination with subconsultants for deliverables.
- Printing of complete PS&E submittals for delivery to the COUNTY.
- Develop cost estimate to be provided at the 60%, 90% and final submittal.

Project Quality Management Plan (PQMP)

The ENGINEER shall develop a project management plan that is to be approved by the COUNTY.

Project Administration

The ENGINEER's project manager will be responsible for directing and coordinating all activities and personnel associated with delivering this project. The project manager will prepare project correspondence and monthly progress reports, coordinate with sub consultants, and maintain routine project record keeping.

Bid Preparation

The ENGINEER shall provide the following related to bid preparation of roadway elements including:

- Construction timeline will be prepared using Microsoft Project or similar scheduling software at the 90% and final submittal.
- Roadway General Notes and Special Specifications for the Project at the 90% and final submittal.
- Standard Specifications at the 90% and final submittal..

Invoicing

The ENGINEER shall prepare monthly invoices for the project including a progress report reflecting the overall % complete for the project, and any outstanding issues that need to be addressed.

SPECIAL SERVICES (Lump Sum)

The following special services are considered supplemental to basic as described above and are to be billed by the ENGINEER as outlined below.

SS1. SURVEY AND ROW

The survey performed for the referenced project will consist of three mobilizations for survey needs for design of PS&E. Any additional survey needs will be handled under incremental services on an as needed basis.

General Standards

All surveys shall meet or exceed the standards set in the Professional Land Surveying Practices Act, the General Rules of Procedures and Practices promulgated by the Texas Board of Professional Engineers and Land Surveyors (TBPELS), and shall be accomplished in an organized and workman-like manner, subject to the approval of the COUNTY.

The North American Datum of 1983 (NAD83), Texas Coordinate System of 1983 (State Plane Coordinates), with an applied combined scale factor utilized by TxDOT for COUNTY, with values in U.S. Survey Feet, will be used as the basis for all horizontal coordinates derived, unless otherwise directed by the COUNTY. Elevations will be based on the North American Vertical Datum 88 (NAVD88), unless otherwise directed by the COUNTY. Project control set during the planning phase of this project through agreement no. 2019-210 will be utilized for this contract.

All GPS work, whether primary control surveys or other, shall meet or exceed the current Texas Society of Professional Surveyors (TSPS) Manual of Practice for Land Surveying in the State of Texas, latest edition, to the order of accuracy specified in the categories listed below or in a work authorization. If the order of accuracy is not specified in this contract or in a work authorization, the work shall meet or exceed the order of accuracy specified in the publications listed in this paragraph.

All conventional horizontal and vertical control surveys shall meet or exceed the current Texas Society of Professional Surveyors (TSPS) Manual of Practice for Land Surveying in the State of Texas, latest edition, to the order of accuracy specified, and in the categories listed below or in a work authorization. If the order of accuracy is not specified in this contract or in a work authorization, the work shall meet or exceed the order of accuracy specified in the publications listed in this paragraph.

In order to ensure accuracy and accountability of the services provided under this contract, the Surveyor may be required to certify work performed under this contract as true and correct according to, the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

The Surveyor shall provide temporary signing and traffic control in and around survey operations. All signs, flags and safety equipment shall be provided by the Surveyor. COUNTY shall be notified at least 48 hours in advance of any lane closures.

The Surveyor shall provide all personnel, equipment, and survey supplies necessary for the performance of the activities required by this agreement or by any work authorization.
Data (original and processed) shall be provided to the COUNTY on a compact disk or other approved

medium and shall be in the following formats: Microsoft Word for word processing, MicroStation (Bentley ORD) for graphics applications.

Variations from these software applications or other requirements listed above shall only be allowed if requested in writing by the Surveyor and approved by the COUNTY.

The Surveyor shall perform Quality Control/Quality Assurance on all procedures, field surveys, data, and products prior to delivery to the COUNTY. If, at any time, during the course of reviewing a submittal of any item it becomes apparent to the COUNTY that the submittal contains errors, omissions, and inconsistencies, the COUNTY may cease its review and return the submittal to the Surveyor immediately for appropriate action by the Surveyor. A submittal returned to the Surveyor for this reason is not a submittal for purposes of the submission schedule.

The Standards for services that are not boundary-related but that relate to surveying for engineering projects may be determined by the ENGINEER, construction specifications, or design specifications.

Deliverables for Survey and Task

- 2D topographic data in Bentley ORD format.
- 3D Digital Terrain Model (DTM) in Bentley ORD format.
- Horizontal and Vertical Control Sheets.

Survey Location

Survey will be performed along the approved corridor determined in **Task BS3**.

Specific Work to Be Performed (Survey)

1. The Surveyor shall use the Horizontal and Vertical Control Monuments established in Phase I.
2. Provide cross-sections of any existing public roadways in the corridor with shots being taken at the ROW, ditch line, edge of shoulder, edge of travel lane and centerline.
3. Provide structure details of all visible cross culverts including flow line elevations, inside top of slab elevations, top of road profile and structural dimensions, and downstream channel cross sections within the project limits.
4. Locate existing visible improvements within the project limits, including but not limited to, manholes, water valves, concrete, fences, buildings and other visible utilities.
5. Surveyor shall obtain Right-of-Entry permission prior to physically accessing any private property. Surveyor will utilize public records to determine ownership data and secure permission to enter private property for purposes of performing Land Surveying. A right-of-entry (ROE) letter will be prepared on COUNTY letterhead and mailed to each property owner in the project limits. A written response will be requested either confirming or denying ROE. The Surveyor will make reasonable attempts to contact each landowner verbally prior to conducting any fieldwork if written correspondence is not successful. A log of all contact with landowners will be maintained.
6. Prepare a final design and topographic drawing in MicroStation, Geopak V8i showing all features located in the field, an ASCII coordinate file of the associated points located in the field and a hard copy of all field notes and field sketches.

7. Determine boundary lines and rights-of-way lines for approximately 84 parcels and/or rights-of-way that are within or adjacent to the technically preferred alignment.
8. All Surveying shall be performed under the direct supervision of a Professional Land Surveyor licensed and in good standing with the State of Texas.

Deliverables (Survey)

1. ROE Contact Log, copies of ROE permission letters
2. DGN file containing planimetrics, contours, break lines, and property lines and ownership information
3. Microstation GeoPak DTM file
4. ASCII file of points, field notes and field sketches

Specific Work to Be Performed (Right-of-Way)

1. The Surveyor shall research public records to obtain names, physical addresses, mailing addresses, and telephone numbers, if available, of all property owners that adjoin and are within the ROW Mapping project limits. The surveyor shall fill out an Excel Spreadsheet with the found information. The Surveyor shall obtain copies of all parent tract recorded deeds, current subdivision plats, and recorded easements (75 years; from January 1, 1950 to present) within the project limits.
2. The Surveyor will prepare overall Parcel Exhibit Map. The Surveyor shall use the previously established Aerial mapping image as a backdrop for the new parcel configuration that comprises the length of the new Right-of-Way corridor. The overall Parcel Exhibit Map will show the new right-of-way lines, parcel boundaries, current ownership, bearings and distances and set or found monumentation for the new right-of-way corridor. Each 22”x 34” sheet will cover approximately 5,600 feet of length of the new right-of-way corridor.
3. A virtual version of the Parcel Exhibit Map will be made available to the COUNTY. The map will provide a visual status of the acquisition process for Right-of-Way and Easements, as appropriate. The map, called Tracker, will include parcel specific details, including property owner information, parcel size, area of proposed Right-of-Way or Easement, and responsible party in charge of the current progress for the document.
4. The Surveyor will prepare up to 26 Parcel Exhibits. These will show the individual configurations that comprise the new right-of-way corridor. These will show new right-of-way lines, parcel boundaries, current ownership, bearings and distances and set or found monumentation. They will be reviewed by COUNTY and ENGINEER representatives for correctness and parcel configuration. These will include area designations for any determined prescriptive easement areas within the boundaries of the Parcel Exhibits and shown for appraisal purposes. There are approximately 13 Parcels that need Right-of-Entry permission within the Right-of-Way corridor. If Right-of-Entry can’t be obtained, the Surveyor will be unable to set the new Right-of-Way monuments on those Parcels. The Surveyor could prepare Parcel Exhibits omitting the new Right-of-Way monumentation to be set. New Right-of-Way monuments can be set after COUNTY obtains title to these parcels.
5. The Surveyor will prepare up to 13 Metes and Bounds descriptions that describe the Parcel boundaries. These will be signed and sealed by a Texas Registered Professional Land Surveyor and will become part of each Parcel Exhibit and suitable for acquisition purposes. These will be prepared after Parcel Exhibits have been reviewed and approved by others.

6. The Surveyor shall research public records to obtain names, physical addresses, mailing addresses, and telephone numbers, if available, of all property owners that adjoin and are within the ROW Mapping project limits. The surveyor shall fill out an Excel Spreadsheet with the found information. The Surveyor shall obtain copies of all parent tract recorded deeds and current subdivision plats within the project limits.
7. All Surveying shall be performed under the direct supervision of a Texas Registered Professional Land Surveyor licensed and in good standing with the State of Texas.

Deliverables (Right-of-Way)

1. Excel Spreadsheet that includes information of all property owners within the described limits
2. PDF copies of all pertinent property records (approximately 11 tracts total, per Collin CAD website)
3. DGN files containing bearings, distances, monumentation of each parcel configuration (with easements) required to reproduce the overall Parcel Exhibit Maps.
4. Three (3) copies of signed and sealed Parcel Exhibits that include the associated Metes and Bounds for approximately thirteen (13) Parcels with PDF copies.
5. Two hard copies (22”x34” & 11”x17”) and PDF copies of the overall Parcel Exhibit Map.
6. Excel Spreadsheet that includes information of all property owners within the described limits.
7. PDF copies of all pertinent property records.

SS2. GEOTECHNICAL SERVICES

The geotechnical investigation performed for the referenced project will consist of field and laboratory investigations, engineering analysis, and a report prepared by a Licensed Professional Engineer.

Field Investigation

The field investigation will consist of drilling bridge borings. One bridge boring will be drilled on each end of the proposed bridge near the proposed abutment. A boring plan containing up to 3 pavement bores and 2 bridge bores will be developed and submitted to the COUNTY for review and approval.

The bridge borings will be drilled until 20 feet of unweathered rock is penetrated. Unweathered rock is anticipated to be encountered at average depths of 40 feet below the existing ground surface. Therefore, it is anticipated that the test borings will be drilled to depths of 60 feet below the existing ground surface. If unweathered rock is encountered at average depths of greater than 40 feet, additional drilling footage will be required in order to penetrate 20 feet into unweathered rock.

Subsurface soil samples will be secured with thin walled tube and/or split spoon samples depending on soil type and consistency. Rock encountered within the bridge borings will be continuously rock cored and will also be evaluated using the Texas Department of Transportation Penetrometer (TxDOT Cone). In addition, TxDOT cone testing will be performed on 5-foot intervals for the overburden soils for the

bridge borings. All samples will be properly logged, packaged, sealed, and placed in a core box for transportation to the laboratory. The test borings will be backfilled with soil cuttings and the pavement will be patched upon completion.

The ENGINEER assumes that the boring locations will be accessible to our conventional truck mounted drilling equipment during normal working hours. Should unusual soil conditions be encountered, we will provide the COUNTY with a recommendation and cost estimate to explore these conditions.

The ENGINEER will contact Dig Tess to have them locate underground utilities. However, the ENGINEER is not responsible for damage to underground utilities that are not identified prior to drilling.

Laboratory Investigation

Laboratory tests will be conducted to classify the soil and to evaluate the volume change potential and strength of the soil and rock present at the site. Per TxDOT standards, Atterberg limits, sieve analysis and moisture contents will be performed on every stratum within each of the pavement borings. The volume change potential of the soils will also be evaluated by LL/PI properties. The strength of the soil will be estimated using hand penetrometer tests and unconfined compressive strength tests. Unconfined compressive strength testing will also be performed on the rock cores. Sulfate testing will be performed at 0 to 2 feet and 2 to 4 feet per TxDOT standards. Lime / PI series tests will also be performed on selected clay samples. CU triaxial testing and one-dimensional consolidation testing may be performed for the slope stability and settlement analyses of the proposed embankments.

Engineering Analyses

Results of field and laboratory work will be presented in an engineering report. The report will include our recommendations to guide design and construction of the new roadway and will include the following:

- Generalized soils stratigraphy and groundwater levels. Results of classification and TCP testing with WinCore format boring logs.
- Site Condition.
- Site Geology.
- Visually classify the soil samples by an engineer in the laboratory.
- Straight shaft pier recommendations for the design of the bridges.
- Gradation test results for scour analyses.
- Pavement subgrade stabilization recommendations.
- Concrete pavement section recommendations based upon design traffic data provided by others.
- Comments on the presence and effect of expansive soils on pavement construction will be provided. Alternative methods of reducing any anticipated shrink/swell movements associated with expansive clays will be included for pavement construction, if required.
- Slope stability analyses for proposed embankments.
- Embankment fill and compaction recommendations.

Deliverables (Geotechnical Services)

1. Engineering Report

SS3. ENVIRONMENTAL SERVICES

Section 404 of the Clean Water Act

Waters of the United States Determination (Field Assessment) and Reporting

BGE will conduct an on-site delineation of waters of the U.S. (WOTUS) including ordinary high-water mark and wetland boundary identification as defined in Section 404 of the Clean Water Act (CWA) within the project area. The determination will be conducted according to the protocols established in the U.S. Corps of Engineers (USACE) Wetlands Delineation Manual (1987 Manual) and the interim regional supplement - Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). Field data will be recorded in field notebooks and data sheets will be prepared. All spatial field data will be collected utilizing Collector for GIS connected to a Trimble DA2 Global Positioning System (GPS) receiver capable of submeter accuracy.

BGE will prepare an environmental report sufficient for submittal to the USACE utilizing field data collected during the WOTUS determination to comply with current federal regulations. The environmental report will include the following:

Wetland Delineation

Field data collected by BGE will be assessed and prepared in the wetland delineation section of the environmental report. BGE will prepare figures, photologs, and USACE data forms based on current project designs and will include them as an appendix in the environmental report. At a minimum, a general vicinity map and topographic map will be developed for the project area; a background information map will provide any readily available resource data (e.g., NWI, SSURGO, FEMA), and an additional exhibit will utilize an aerial image as the base map to depict any identified wetlands, WOTUS, other waterbodies, and data points.

Jurisdictional Assessment

BGE will prepare a section of the environmental report assessing the jurisdictional status of the mapped waters identified in the wetland delineation based on current federal regulations in order to evaluate the potential impacts of the project to waters of the U.S.

Threatened & Endangered Species (Endangered Species Act)

In order to comply with the Endangered Species Act and General Condition 18 of Nationwide Permit (NWP) 14 (Linear Transportation) BGE will conduct a threatened and endangered (T&E) species habitat assessment. This will include reviewing databases maintained by the Texas Parks and Wildlife Department (TPWD) and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) System for records regarding T&E species, designated critical habitat, sensitive natural communities, and other features of concern known or suspected to occur in the proposed project area. BGE will assess activities associated with the proposed project and include available information for listed species in the area to determine if the project may potentially impact known T&E species or designated critical habitat(s) and include this information in a section of the environmental report.

Antiquities Code of Texas

Texas Historical Commission Notification Letter

The Antiquities Code of Texas (ACT) requires political subdivisions of the state (e.g., counties) to notify the Texas Historical Commission (THC) before breaking ground on project over 5 acres in size

or with more than 5,000 cubic yards of disturbance. To comply with the ACT, BGE will prepare a notification letter for submittal to the THC. The notification letter will minimally consist of a project description and a cultural resources desktop assessment. The desktop assessment will include a review of the proposed project, including a broader 1-kilometer (0.6-mile) Study Area buffer. The file review will include datasets from the THC and the Texas Archeological Research Laboratory, the National Register of Historic Places (NRHP) database, U.S. Geological Survey historic topographic maps and historic aerial photography, and environmental and geologic characteristics within the project that may affect the probability for cultural resources to be present. If requested by COUNTY, BGE will make a recommendation for survey based on the information and describe the results in a cultural resource desktop assessment letter to be provided to the COUNTY.

BGE understands Higgins Cemetery abuts the current course of CR 398. Initial online research into Higgins Cemetery indicates headstones with burial dates as early as 1875, suggesting there may be unmarked burials and modern cemetery boundaries might not conform to the current cemetery footprint. Based on previous experience, BGE assumes the THC will minimally require review of historical records relating to Higgins Cemetery to help identify possible impacts posed by the project. BGE proposes to conduct archival research into the cemetery to determine if historic land plats are available and identify other maps of documentation that may be available. BGE will include a review of cemetery documents and records in the notification letter for review by the THC.

Once completed, BGE will submit the draft notification letter to the COUNTY for review. Following approval, BGE will submit the letter to the THC for comment or concurrence.

Texas Antiquities Permit Application

COUNTY will need to secure a Texas Antiquities Permit (TAP) for cultural resources field investigations. BGE will submit a TAP application to the THC prepared and signed by a professional archeologist meeting the Secretary of the Interior qualification standards and listed as a Principal Investigator in Texas. In compliance with the Antiquities Code of Texas, BGE will develop field methods based on established Council of Texas Archeologists (CTA) and THC field survey standards. Based on the findings of the notification letter, the permit application will include a background assessment of recorded cultural resources and potential for unrecorded resources that may be impacted by the project, and also include a research design for field investigations, and a TAP Application form to be signed by the Principal Investigator, Project Sponsor, and Landowner. Coordination with the THC will be completed via the eTrac System.

DELIVERABLES

- Environmental Report
- Notification Letter for submittal to the THC
- Texas Antiquities Permit application

ASSUMPTIONS

- BGE will have at their disposal all relevant information that has been collected to date, including electronic project boundary surveys, plan, reports, etc.
- Changes in workspace, concepts, or design that could increase or decrease survey areas will be immediately communicated. Increased level of effort and expenses required by project changes are not included in this scope.
- Weather may cause delays in fieldwork due to safety, access and/or site conditions. Weather delays may affect schedule and cost estimates.

INCREMENTAL SERVICES (Specified Rate)

The following incremental services are considered supplemental to basic or special services as described above and are to be billed by the ENGINEER on a time and materials basis as outlined below. The ENGINEER shall not begin any work until written authorization has been provided by the COUNTY.

IS1. SUBSURFACE UTILITY ENGINEERING (SUE)

Assumptions

The following assumptions were made for the preparation of this Scope of Services. If these assumptions do not prove correct, a modification to the scope and budget for this project may be required.

- This proposal and fee are based on the assumption that crews will be able to proceed unimpeded. Down time or additional mobilization or demobilization caused by restricted access, project changes, weather or other factors that are outside of the ENGINEER's control may be charged per the attached rate schedule.
- The ENGINEER will not perform any work outside of the scope of services herein without written authorization.
- Subsurface Utility Engineering services include comprehensive record research/collection of all known existing utility systems, survey of all visible utility surface features, and field designating using various geophysical equipment for detecting underground utilities. The lowest confidence level of data collected is record information and the highest confidence level is utilities found via excavation. All of the collected information is analyzed and combined to prepare a detailed utility map showing utilities of record that could not be found, active/inactive utilities, utilities that were found using geophysical equipment and precise utility locations that were uncovered.
- The accuracy of depth readings of utilities taken from electromagnetic geophysical equipment depends greatly on soil type, soil moisture content, depth of utility, proximity to other utilities, material of the conduit, etc. It is because of this that the equipment manufactures do not warrant and/or guarantee the accuracy of the equipment's depth readings. The only method of ensuring an accurate depth is to expose the utility for measurement.
- Suitability maps show GPR effectiveness is low in the project area. The ENGINEER will utilize GPR during the utility investigation and will note on the deliverables whether the radar had success detecting known utilities or not.
- The ENGINEER may utilize the following geophysical equipment on the project:

    - Radiodetection RD8100
    - Vivax-Metrotech VM-810
    - Sensit Ultra-Trac APL
    - IDS Opera DUO
    - Tonable rodder
    - Sonde

- All equipment may not be used on each site as equipment is selected based upon geophysical

application necessary to find a target utility

- Normal traffic control, for Subsurface Utility Engineering services, is considered standard placement of traffic cones, freestanding warning signage and vehicle-mounted traffic directional sign. Traffic control requiring lane closures, traffic detouring, flag persons, police, etc., is considered special traffic control. This service will be subcontracted to an approved subcontractor and billed to the Client at cost plus 10%.
- Sanitary and Storm Drain systems will be shown as QL-C based on surveyed invert data.
- It is assumed that no contaminated materials are encountered. If contaminated materials or soils are encountered the COUNTY will be notified immediately and any remediation will be the COUNTY's responsibility and cost.
- Paint markings placed on the ground are to be used for design purposes only and not for construction purposes. The use of QL-B information provided does not relieve any contractor or the COUNTY from the duty to comply with applicable utility damage prevention laws and regulations, including, but not limited to, giving notification to utility owners or the Texas One Call System before excavation.
- Non-metallic piping, inactive electric, and/or communication lines may or may not be found by electromagnetic, sonic, or acoustical designating practices. The ENGINEER does not warrant and/or guarantee that all existing utilities will be found.
- All work will be performed during daytime hours.

The ENGINEER will provide all the following Subsurface Utility Engineering (SUE) services to the standard of care applicable in the SUE profession. The services meet the standard guidelines of ASCE . Standard 38-22 " Standard Guideline for Investigating and Documenting Existing Utilities." Irrigation systems and electrical wiring for landscape lighting are excluded from the scope of this proposal.

Aerial Utility Investigation Services

The ENGINEER shall:

- Compile "As Built" information from plans, plats and other location data as provided by the utility owners.
- Record the horizontal location of existing poles, pole anchors, for aerial Utility facilites and survey to the same accuracies and precisions as required for the topographic data included in the project.
- Determine the Utility Owners and depict the horizontal position of utilities between poles and other structure attachments.
- Determine and inform the COUNTY of the Sag Elevation of overhead utilities at critical locations as determined by the COUNTY for the purpose of ensuring required clearances.
- Provide a monthly summary of work completed and in process with adequate detail to verify compliance with agreed work schedule.
- Clearly identify all utilities that were discovered from Aerial Utility Investigations. The utilities must have a unique line style and symbology in the Aerial Utility deliverable.
- Comply with all applicable COUNTY policy and procedural manuals.

Quality Level A (QL-A) Services

Test Hole services to locate accurate horizontal and vertical positions of subsurface utilities by excavating a test hole using vacuum excavation techniques and equipment that is non-destructive to utilities. In performing test-hole services, SUE provider will:

- Provide up to six (6) test holes.
- Test hole locations will be chosen by the ENGINEER.
- The ENGINEER will use designating equipment to lay out the test hole locations.
- The test holes will be surveyed by ARS.
- Provide all equipment, personnel and supplies required to perform locating services.
- Excavate test hole to expose the utility to be measured in such a manner that ensures the safety of the excavation and the integrity of the utility to be measured. In performing such excavations, the ENGINEER shall comply with applicable utility damage prevention laws. Excavations will be performed using specially developed vacuum excavation equipment that is non-destructive to existing facilities.
- Furnish and install survey markers directly above the centerline of utility structure.
- Investigate, evaluate, measure and record:

    - Actual depth to top of utility referenced to a survey marker installed directly above the centerline of the exposed utility structure.
    - Outside diameter of utility and configuration of non-encased, multi conduit systems.

- Backfill around the exposed facility using the excavated materials compacted in six-inch lifts.
- In grass and landscape areas, restoration shall be as reasonably possible to the condition that existed prior to excavation.
- Any permitting fees will be invoiced to the COUNTY at cost plus 10%.

All areas where test holes are required shall be accessible by standard driving with vacuum excavation vehicle plus the range of a 15-ft hose.

Quality Level B (QL-B) Services

Designate utilities which mean to indicate the horizontal location of underground utilities by the application and interpretation of appropriate non-destructive surface geophysical techniques and reference to established survey control. Designate (Quality Level B) Services are inclusive of Quality levels C and D. Quality Level D – Existing Records: Utilities are plotted from review of available existing records. Quality Level C – Surface Visible Feature Survey: Quality level "D" information from existing records is correlated with surveyed surface-visible features.

The ENGINEER shall:

- Compile "As Built" information from plans, plats and other location data as provided by the utility owners.
- Coordinate with utility owner when utility owner's policy is to designate their own facilities at no

cost for preliminary survey purposes. The ENGINEER shall examine utility owner's work to ensure accuracy and completeness.

- Designate, record, and mark the horizontal location of the existing utility facilities and their service laterals to existing buildings using non-destructive surface geophysical techniques. No storm sewer facilities are to be designated unless authorized by the COUNTY. A non-water base paint, utilizing the American Public Works Association (APWA) color code scheme, must be used on all surface markings of underground utilities.
- Correlate utility owner records with designating data and resolve discrepancies using professional judgment. A color-coded composite utility facilities plan with utility locate (test hole) locations, shall be prepared and delivered to the COUNTY. It is understood by both the ENGINEER and the COUNTY that the line sizes of designated utility facilities detailed on the deliverable are from the best available records and that an actual line size is normally determined from a test hole vacuum excavation. A note must be placed on the designate deliverable only that states "line sizes are from best available records". All above ground appurtenance locations must be included in the deliverable to the COUNTY. This information shall be provided in the latest version of Microstation. The electronic file will be delivered to the COUNTY. A hard copy is required and must be signed, sealed, and dated by the ENGINEER. The designated utility information must be over laid on the design plans.
- Determine and inform the COUNTY of the approximate utility depths at critical locations as determined by the COUNTY. This depth indication is understood by both the ENGINEER and the COUNTY to be approximate only and is not intended to be used preparing the right of way and construction plans.
- Provide a monthly summary of work completed and in process with adequate detail to verify compliance with agreed work schedule.
- Clearly identify all utilities that were discovered from quality levels C and D investigation but cannot be depicted in quality B standards. The utilities must have a unique line style and symbology in the designate (Quality Level B) deliverable.
- Comply with all applicable COUNTY policy and procedural manuals.

SUE DELIVERABLES

A SUE CAD file depicting the QL-A test hole locations will be prepared for this project as well as a file depicting QL-B, QL-C, QL-D and Aerial Utilities. A Test Hole Report and a data summary form will be prepared. The Test Hole Report will be signed and sealed by a Registered Professional Engineer. The utilities will be referenced by the type of utility, color coded to American Public Works Association (APWA) standards. A color-coded composite utility facilities plan with utility locate (test hole) locations, shall be prepared and included in the design plan set.

All electronic project files created, and/or modified will be transmitted via email, or delivered on a CD if requested by the COUNTY. All CAD files will be created in AutoCAD / Civil 3D 2015 or Bentley ORD format.

ESTIMATED FEES

The ENGINEER will provide the services as described above on a **time and materials** fee basis based on the rate schedule below.

Local Mobilization/Demobilization Fee Applies at the rate of once per project assignment. Minor/Standard Traffic Control is included (consists of warning signs and cones). Lane Closures requiring Flashing Arrow Board(s) is additional. Complex or Specialized Traffic Control is additional.

It is the client's responsibility to provide a dump site or a vacuum box/containment vessel for removal of Hydro Vac spoils if no dump site is provided by Client.

Paved areas may require coring to perform vacuum excavation services. In such cases the ENGINEER will provide a Core Rig and Operator. Core rig rate includes materials & equipment to replace and set core (keyhole) following vacuum excavation completion.

SPECIAL NOTES FOR HYDRO EXCAVATION SERVICES

Hydro Vac Services will require metered water recharge fees and authorized spoils disposal locations. All excavated material remains the exclusive property of the client or project owner upon whose land, easement or ROW wherein the excavations are performed. The project owner understands and acknowledges that Hydro Excavation indicates and includes the use of water to aid in the vacuum excavation process and that the resulting excavated materials may be oversaturated with water as a result of the hydro vac process.

If the project requires backfilling with material other than the material excavated via the hydro vac process, such as flowable fill or select backfill, the project owner will be required to provide a spoils box, vacuum box, or stockpiling location within or reasonably close to the project site for the purpose of holding the hydro vac excavated materials. BGE can provide a vacuum box/containment vessel from a third-party environmental services company for removal of Hydro Vac spoils if no dump site is provided by Client. BGE will request a fee proposal from environmental services company and the cost of vac box and spoils disposal will be passed through to client at cost plus 10% based on the fee proposal provided by the environmental services company.

The project owner is required to disclose any known or suspected information regarding the project site and its underlying soil conditions such as; chemical, petrochemical, hydrocarbon, asbestos, naturally occurring radioactive materials (NORM) or any other known or suspected contamination within the project site.

When performing hydro excavation in known, suspected or encountered contamination areas, the ENGINEER staff shall don additional Personal Protective Equipment (PPE). All costs associated with the use of additional PPE dictated by the site conditions and deemed reasonable and prudent, including wash-down, decontamination or disposal of said PPE, shall be charged to the client/project owner as a direct pass through cost. Examples of additional PPE may include but not be limited to; dust masks, respirators, face shields, protective coveralls, protective gloves and rubber boots.

Pothole or Test Hole Option:

Potholes are strictly the excavation and exposure of the subject facility with a measurement of depth and notation of facility size, type and composition painted on the ground and/or provided in a non-certified

report. This report will be provided by Vac Crew onsite upon completion of potholes and typically is handwritten.

Test holes provide the same level of information as pot holes, and are surveyed for a precision x,y & z coordinate and are provided in a test hole report, signed and sealed by an ENGINEER. Test Holes require Survey and ENGINEER review. Vac Crew, Survey and ENGINEER fees will be in accordance with the rates shown in exhibit C.

IS2. UTILITY COORDINATION

Utility Coordination

The ENGINEER shall assist the COUNTY in planning, coordinating, and attend up to ten (10) utility coordination meetings with the identified affected utility companies within the limits of the project. These meetings will establish the preliminary schedule for the respective utility adjustments performed by others. The ENGINEER will provide up to two (2) team members at each meeting. Provide status updates on design progress, schedule, and relocation needs. Provide 60%, 90% and 100% design plans to the franchise utilities for review.

Design Exhibits – Prepare any necessary design exhibits in CAD or PDF which may provide clarification and/or assist franchise utilities with understanding project impacts or relocation needs.

Site Visits – Perform up to three (3) site visits with the COUNTY and/or impacted franchise utility representatives.

Utility Agreements

The COUNTY shall prepare and obtain all necessary Utility Agreements for the project. The ENGINEER shall aid the COUNTY in production of exhibits and estimates for the utility agreements.

ESTIMATED FEES

The ENGINEER will provide the services as described above on a **time and materials** fee basis based on the rate schedule below.

IS3. SURVEY

Additional survey for upstream and downstream tributary conditions at 50 ft interval cross sections. The work performed under incremental services for survey will follow the general standards and deliverables specified under special services survey.

ESTIMATED FEES

The ENGINEER will provide the services as described above on a **time and materials** fee basis based on the rate schedule below.

Local Mobilization/Demobilization Fee Applies at the rate of once per project assignment. Minor/Standard Traffic Control is included (consists of warning signs and cones). Lane Closures requiring Flashing Arrow Board(s) is additional. Complex or Specialized Traffic Control is additional.

IS4. FM 546 INTERSECTION IMPROVEMENTS

Based upon the results of the Traffic Signal Warrant Studies, the ENGINEER shall identify and prepare plans, details, and quantities, to include grading, paving, traffic signals, cross culvert drainage, storm drain, removals, traffic control/construction sequencing, storm water pollution prevention plans, signing & pavement markings, design, and miscellaneous details.

ADDITIONAL PS&E DEVELOPMENT

PS&E developed as part of BS5. Roadway Design, BS6. Drainage Design, and BS7. Traffic Design will be updated to include improvements at the intersection of FM 546 and CR 398 as recommended by the results of the Traffic Signal Warrant Study and approved by the COUNTY.

TRAFFIC SIGNAL PLANS

Traffic Signal Plans will be prepared for all warranted traffic signals at the intersection of CR 398 and FM 546. Traffic Signal Plans will be signed and sealed by a Texas Registered or Licensed Professional Engineer.

Traffic Signal Layout

The ENGINEER shall prepare traffic signal layouts for all warranted traffic signals on standard 11” x 17” plan sheets. The layouts will identify the locations of proposed traffic signal equipment including poles, signal heads, vehicle detection, conduit, ground boxes, luminaires, controller cabinet, electric service meter, power source, and signs in accordance with applicable TxDOT standards and the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

Traffic Signal Details

The ENGINEER shall prepare traffic signal details for all warranted traffic signals on standard 11” x 17” plan sheets. The detail sheets will include schedule of conduit and cables, cable termination details, phasing diagram, pole and signal head placement details, electrical service details, street name sign details, and vehicle detection details.

Assembly of Traffic Signal Standards

The ENGINEER will select standard details applicable to the traffic signal design as needed for construction and include in the plans for the 60%, 90%, and final submittals.

TDLR

1. TDLR Registration. CONSULTANT will select a Registered Accessibility Specialist (RAS) prior to beginning the registration process. An Owner Agent Designation form must be completed prior to registering the project. CONSULTANT or RAS may be designated as Owner Agent. Register project online via TDLR's Texas Architectural Barriers online System (TABS). The Owner Agent Designation form must accompany the Project Registration Form.

2. TDLR Review of Construction Documents. Complete Proof of Submission form in accordance with Texas Administrative Code Chapter 68, Rule 68.50. Submit form and a copy of the plans to a RAS no later than the twentieth business day after the plans and specifications are issued. Plans may be reduced to only include drawings relevant to architectural barriers (pedestrian elements).

3. TDLR/RAS Inspection. Complete Request for Inspection form and submit to the RAS no later than 30 days after the completion of construction. The Owner Agent Designation must accompany the Request for Inspection Form.

IS5. ENVIRONMENTAL SERVICES

Nationwide Permit 14 Pre-Construction Notification (PCN) (*If required*)

BGE will prepare and submit a PCN under NWP 14 (Linear Transportation) to the USACE Fort Worth District. Requirements for the submittal of a PCN to USACE Fort Worth District include documentation and evaluation of impacts to waters of the U.S., threatened and endangered species (and/or their habitats), and cultural/historic resources.

BGE will provide draft copies of permit applications for review. Once all documents are finalized, BGE will re-submit permit applications for signature for agency submission.

Based on current federal practices, it is anticipated that BGE will be requested to perform one on-site visit with the USACE to review on-site ecological features included in the permit submittal.

Cultural Resources Investigation

Archeological Survey

BGE will perform an intensive terrestrial archeological survey under a TAP issued by the THC and directed by a professional archeologist who meets the requirements for Principal Investigator. The investigation will be performed in compliance with the National Historic Preservation Act and ACT; and the guidelines set forth by the CTA and THC. The survey will include, at minimum, pedestrian survey and shovel tests to investigate the project area. The survey will not include any above-ground resources survey or National Register evaluation of buildings, structures, objects, and other non-archeological resources.

Based on the background assessment completed for the notification letter, BGE will attempt to provide available records and documentation, as available, to the THC to identify reliable boundaries for Higgins Cemetery. Further, BGE assumes the project area will avoid recorded boundaries of Higgins Cemetery. However, the THC may require specialized field investigations to identify possible unmarked graves that could be present within the project area. Most commonly, field investigations

for cemeteries include pedestrian survey to identify grave impressions or marker, photo-documentation, and mechanical scraping (i.e., removal of thin layers of soil) until possible grave shafts are revealed if present. The THC or other review agencies may also require remote sensing techniques (e.g., ground-penetrating RADAR). BGE will engage specialized contractors (e.g., heavy equipment operator, remote-sensing operator) as needed to complete specialized investigations if required by the THC.

Cultural Resource Site Delineations (If identified)

If a cultural resource site is identified, site recordation and delineation must be followed according to CTA and THC survey standards. Site recording and reporting will be documented in a Cultural Resources/ Archeological Survey Report. Services under this task are assumed and may change depending on findings from field investigation.

Cultural Resources/ Archeological Survey Report

Based on the intensive archeological survey results, BGE will prepare a survey report according to the Secretary of the Interior's Standards for Archeological Documentation, and the CTA and THC Guidelines for Cultural Resource Management Reports for submittal to the THC for review and approval. Documents and records will be curated at a state-approved facility to comply with the ACT and TAP requirements.

IS6. BID PHASE SERVICES

The ENGINEER will assist the COUNTY with the pre-bid conference and in the final selection of a Contractor for construction of the project. The ENGINEER will prepare and furnish bid documents to prospective bidders and keep record of recipients. The cost for bid package reproduction and delivery will be determined by reproduction cost plus shipping and handling, and will be the responsibility of prospective bidders. The ENGINEER will assist the COUNTY in receiving prospective bidder inquiries, and preparing and issuing addenda as necessary. The ENGINEER will assist the COUNTY in opening and evaluating bids for responsiveness, including developing a tabulation spreadsheet summarizing each bid. The ENGINEER will prepare a Notice of Award; assemble, deliver, and execute contract documents for construction; and prepare a Notice to Proceed. The ENGINEER will incorporate addenda into contract documents and issue a conformed set.

BID PREPARATION

The ENGINEER shall provide the following related to bid preparation of roadway elements including:

- Bid Forms and Contract Documents for the Project at final submittal. Sections to be included are: Advertisement for Bids, Instructions to Bidders, Governing Specifications and Special Provisions, General Notes, Bid Form, Base Bid Schedule, Construction Agreement, Texas Statutory Payment and Performance Bond, Performance Bond and Maintenance Bond.

ADDITIONAL SERVICES

The following additional services are beyond the scope of services described above. However, the ENGINEER can provide the additional services, if required, upon the COUNTY's written request. Any additional amounts paid to the ENGINEER as a result of any material change to the scope of the project shall be agreed upon under a separate contract.

The additional services include, but are not limited to, the following:

Additional Engineering and Construction Services

- Shop Drawing Review
- Construction Phase Services

IS7. LETTER OF MAP REVISION (LOMR)

1. As-built Survey – After the final grading of the site has been completed, an as-built survey will be performed to determine the final topography of the site and incorporate that survey into the LOMR model.

2. Hydrologic and Hydraulic Data – The necessary hydrologic and hydraulic data developed for the LOMR including a signed and sealed topographic workmap and updated shapefiles which show the floodplain data that has been changed in the vicinity of the project.

3. Local Review – BGE will coordinate with the local floodplain administrator to obtain a signed Community Acknowledgement Form. The form is required to be signed by the local community before submittal to FEMA.

4. FEMA Submittal – The as-built survey will be used to update the HEC-RAS model terrain to show the post-construction grading within the affected stream. A submittal package to accompany a request to FEMA for a Letter of Map Revision (LOMR) to officially change the Flood Insurance Rate Map (FIRM), revising the floodplain maps to reflect the post-construction conditions is to be prepared.

5. Review and Processing Fee – FEMA requires a review and processing fee to be submitted along with a request involving the placement of fill within the floodplain. This fee will be paid by client and is included in the base scope of services. The current FEMA review fee associated with LOMR's of this type, as published in the Federal Register, dated January 21, 2015, is $8,000. The FEMA review fees are subject to change and outside of the Engineers control.

IS8. CONSTRUCTION SERVICES

The Scope of Work to be performed by BGE, Inc., here and after referred to as the ENGINEER, under this contract will consist of Pre-Construction Phase Services and 10 months of Construction Management & Inspection Services for the Collin County CR 398, here and after referred to as the PROJECT, for Collin County, here and after referred to as the OWNER.

CONSTRUCTION ADMINISTRATION

A. Construction Administration

a. Perform regular review of project records including inspection reports, geotechnical testing reports and contractor record drawings for conformance with the project plans and specifications.
b. Review and approve shop drawings for conformance with the project plans and specifications.
c. Evaluate and provide recommendations to the OWNER for proposed contractor substitutions, value engineering proposals, contractor requests for information, corrective measures, and earthwork quantity verification.
d. Attend monthly construction coordination meeting and monitor construction schedule progress.
e. Review and recommend monthly construction pay requests.
f. Assist OWNER in the preparation of change orders and associated plan modifications. ENGINEER to provide the estimate of cost of the change order and all supporting documentation to the OWNER. The ENGINEER will also assist with the negotiations if the OWNER desires.
g. Prepare project record drawings from contractor provided data and field observations.

Deliverables:

1. Prepare monthly written progress reports and invoices for project.
2. Meet on a scheduled basis with the OWNER to review the project process.
3. Prepare, distribute, and file both written and electronic correspondence,
4. Review contractor’s invoice
5. Prepare final Records.

B. Utility Coordination

a. Review utility relocation plans to confirm coordination with project design.
b. Oversee utility relocations for adherence to approved utility relocation plans.
c. Update project record drawings to reflect position of relocated utilities and keep construction contractor apprised of same.

d. Provide field survey control and right-of-way staking as necessary to coordinate utility relocations.
e. Provide field survey of relocated underground utilities as necessary for construction clearance verification.

Deliverables:

1. Utility coordination meetings with Cities of Lowry Crossing, and Princeton (estimate 2 meetings)
2. Weekly email coordination with utility update matrix for the first 6 months of the project.

C. Stakeholder Coordination

a. Coordinate between contractor and TxDOT for all work near the FM 546, intersections.
b. Coordination between contractor and the Cities of Lowry Crossing, and Princeton

Deliverables:

1. Create meeting agenda.
2. Keep record of meeting minutes

CONSTRUCTION INSPECTION

A. Construction Inspection

a. Inspection shall be performed at a rate of 40 hours per week (Monday through Friday excluding Holidays) for full time inspection of the following items:

1. Full time inspection of structural concrete operation and bridge component installation based on an approximate placement rate of not less than 22 cubic yards per hour.
2. Part time inspection of structural concrete operations and bridge component installation in an as needed basis during high activity period.
3. Full time inspection of slip-form concrete paving operation based on approximate placement rate of not less than 720 square yards per day.
4. Part time Record Keeper as needed to maintain records and for project delivery.
5. Part time field engineer for RFI's, shop drawings, correspondence and change orders.
6. Verification surveys

b. Part time inspection of general construction activities consisting of one qualified inspector at a rate of 20 hours per week (Monday through Friday excluding Holidays) for the following items:

1. Storm Water Pollution Prevention Plan (SW3P)
2. Traffic control plans and devices.

a. Verify all traffic control devices are in place before shifting traffic to temporary or proposed pavement.
b. Verify closure of lanes are in accordance with plans and any additional coordination that may be needed for intersections tie ins.

3. Coordination with prime contractor and Subs in the field discussing daily events and operation.
4. Preparing right-of-way (ROW), fencing, clearing and grubbing, removing concrete, and other items
5. Excavation, Embankment, Borrow and Flex Base
6. Lime Fly Ash or Lime-Fly Ash Treated Subgrade and Base, Moisture Treated Base, Asphalt Treatment (Plant Mix)
7. Basic Reinforced Concrete Inspection
8. Drainage Systems and Pre-cast Items, Earthwork for Structures
9. Miscellaneous Concrete Structures (Sidewalks, Driveways, Curb, Medians, Islands)
10. Mechanical Stabilized Earth (MSE) Retaining Walls
11. Surface Treatments, Hot-Mix Asphalt Pavements
12. Foundations (Drilled Shafts), Substructures (Columns, Caps, Footings, Culverts)
13. Superstructures (Decks, Setting and Grading Beams, Girders and Rails)
14. Concrete Pavements, Cleaning and Sealing Joints and Cracks
15. Illumination

c. Provide monthly summary reports of construction activities to the OWNER. Reports shall contain:

1. Review work schedule, plan changes, construction issues, traffic changes, and weather effect and other non-excusable impacts on the schedule. Assist in schedule disputes and claims.
2. Verify weekly quantities for each item of work performed and tabulate into a monthly pay estimate to OWNER for execution of payment.

d. Final Acceptance

1. Prepare and maintain a punch list.
2. Perform Final Inspection
3. Verify Cleanup
4. Verify Removal of Traffic Control Devices
5. Verity Final Quantities
6. Document as-built conditions that may be based on oral conversations and visual inspections.

Deliverables:

1. Conduct/Attend Pre-Activity meetings.
2. Drill Shaft and or Piling logs (required on all bridges)

3. Depth and steel clearance checks for bridge
4. Project Progress Meeting Minutes
5. SW3P Working Plan Set
6. Weekly SW3P Inspection Reports
7. Barricade Inspection Reports

B. Scope Clarification

a. ENGINEER will endeavor to protect the OWNER in providing these services however, it is understood that ENGINEER does not guarantee the contractor's performance, nor is ENGINEER responsible for supervision of the contractor's operation or employees. ENGINEER shall not be responsible for site security, safety on the site nor means, methods, techniques, sequences, or procedures of construction selected by the contractor (s) or any subcontractor. ENGINEER shall not be responsible for acts or omissions of any person (expect its own employees or agents) at the Project site or otherwise performing any of the work of the Project.

b. A Project Representative will be mobilized as soon as the Notice to Proceed is issued to the contractor and will be committed to the Project through substantial completion or a period of 820 calendar days, whichever comes first. The ENGINEER may request additional compensation by supplemental agreement for time extensions given to the contractor that require additional inspection hours. The Project Representative will observe the progress of the work, monitor compliance with the schedules and requirements of the contract with the schedules and requirement of the contract documents and help resolve any conflicts needing attention. The limitations of authority of the Project Representative are as listed below and except upon written instructions of the ENGINEER, Project Representative,

    1. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
    2. Shall not undertake any of the responsibilities of contractor, subcontractors, of contractor's superintendent or accelerate the work.
    3. Shall not advise on or issue directions relative to any aspect of means, methods, techniques, sequences, or procedures of construction unless such is specifically called for in the Contract Documents.
    4. Shall not be responsible to advise or issue directions as to safety precautions and programs in connection with work.
    5. Shall not authorize acceptance of the Project in whole or in part.
    6. Shall not perform any laboratory tests or material sampling.

c. When the ENGINEER is called upon to observe the work of OWNER's construction contractor(s) for the detection of defects or deficiencies in such work, the ENGINEER will not bear any responsibility or liability for such defects or deficiencies or for the failure to so detect. The ENGINEER shall have no influence over the construction means, methods, techniques, sequences, or procedures.

d. The ENGINEER shall not assume any responsibility or liability for performance of the construction services or for the safety of persons and property during construction, or for

compliance with federal, state, and local statutes, rules, regulations, and codes applicable to the conduct of the construction services.

OWNER agrees to the follow conditions:

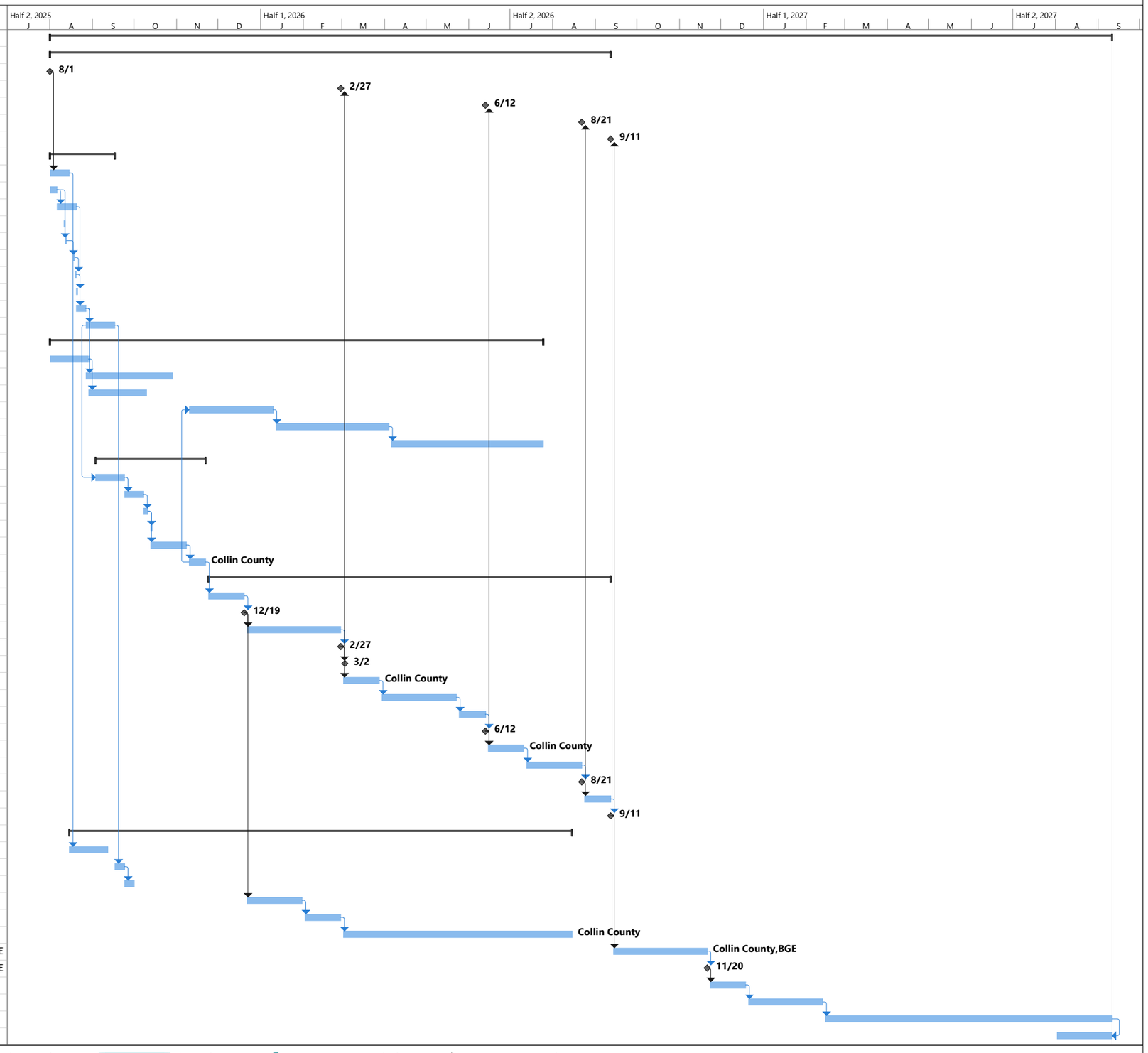
Provide and maintain performance of a licensed Materials Testing Firm for the purpose of conducting all material inspection, material sampling and field/laboratory testing in accordance with the project plans and specifications.

Prime Provider: BGE, Inc.

EXHIBIT B - Work Schedule

Date: Wed 6/4/25

ID	Task Name	Duration	Start	Finish	Resource Names
1	**CR 398 Planning & PS&E**	**551 days**	**Fri 8/1/25**	**Fri 9/10/27**	
2	**Milestones**	**291 days**	**Fri 8/1/25**	**Fri 9/11/26**	
3	Notice to Proceed	0 days	Fri 8/1/25	Fri 8/1/25	
4	60% Plans Submittal (Plans Adequate)	0 days	Fri 2/27/26	Fri 2/27/26	
5	90% Plans Submittal (Pre-Final)	0 days	Fri 6/12/26	Fri 6/12/26	
6	100% Plan Submittal (Final)	0 days	Fri 8/21/26	Fri 8/21/26	
7	Final (Signed and Sealed)	0 days	Fri 9/11/26	Fri 9/11/26	
8	**Assembly and Review of Data**	**33 days**	**Fri 8/1/25**	**Tue 9/16/25**	
9	Gather Existing Data	2 wks	Fri 8/1/25	Thu 8/14/25	
10	Right of Entry for Geotech, Survey, SUE, and Environmental	3 days	Fri 8/1/25	Tue 8/5/25	
11	ROE Waiting Period	2 wks	Wed 8/6/25	Tue 8/19/25	
12	Field Visit	1 day	Mon 8/11/25	Mon 8/11/25	
13	Develop Roadway Design Criteria	1 day	Tue 8/12/25	Tue 8/12/25	
14	Kick-Off Meeting with County	1 day	Mon 8/18/25	Mon 8/18/25	
15	Kick-Off Meeting with Internal Disciplines	1 day	Tue 8/19/25	Tue 8/19/25	
16	Kick- Off Meeting with Subs	1 day	Wed 8/20/25	Wed 8/20/25	
17	ROE Follow-up	1 wk	Wed 8/20/25	Tue 8/26/25	
18	Survey (Field Survey and Process Data)	3 wks	Wed 8/27/25	Tue 9/16/25	
19	**Environmental**	**256 days**	**Fri 8/1/25**	**Fri 7/24/26**	
20	THC Letter Development	4 wks	Fri 8/1/25	Thu 8/28/25	
21	Wetland Delineation and Reporting	45 days	Wed 8/27/25	Tue 10/28/25	
22	THC Submittal and Review	30 days	Fri 8/29/25	Thu 10/9/25	
23	THC Coordination on Approved Alignment	45 days	Mon 11/10/25	Fri 1/9/26	
24	Cultural Surveys & Reporting	3 mons	Mon 1/12/26	Fri 4/3/26	
25	PCN NWP 14	4 mons	Mon 4/6/26	Fri 7/24/26	
26	**Corridor Alternatives Analysis**	**58 days**	**Wed 9/3/25**	**Fri 11/21/25**	
27	Identification of Impacts	3 wks	Wed 9/3/25	Tue 9/23/25	
28	Public Stakeholder Meetings	2 wks	Wed 9/24/25	Tue 10/7/25	
29	Scoring Matrix	3 days	Wed 10/8/25	Fri 10/10/25	
30	Design Concept Conference (DCC)	1 day	Mon 10/13/25	Mon 10/13/25	
31	Preliminary Engineering	4 wks	Mon 10/13/25	Fri 11/7/25	
32	Collin County Review	2 wks	Mon 11/10/25	Fri 11/21/25	Collin County
33	**PS&E Development**	**210 days**	**Mon 11/24/25**	**Fri 9/11/26**	
34	Plan Development for ROW Confirmation	4 wks	Mon 11/24/25	Fri 12/19/25	
35	ROW Map Kick-Off	0 days	Fri 12/19/25	Fri 12/19/25	
36	60% Plan Development	10 wks	Mon 12/22/25	Fri 2/27/26	
37	**60% Submittal**	**0 days**	**Fri 2/27/26**	**Fri 2/27/26**	
38	Utility Coordination Meeting Kick-Off	0 days	Mon 3/2/26	Mon 3/2/26	
39	60% Collin County Review	4 wks	Mon 3/2/26	Fri 3/27/26	Collin County
40	90% Plan Development	8 wks	Mon 3/30/26	Fri 5/22/26	
41	Preliminary Bid Documents	3 wks	Mon 5/25/26	Fri 6/12/26	
42	**90% Submittal**	**0 days**	**Fri 6/12/26**	**Fri 6/12/26**	
43	90% Collin County Review	4 wks	Mon 6/15/26	Fri 7/10/26	Collin County
44	100% Plan Development	6 wks	Mon 7/13/26	Fri 8/21/26	
45	**100% Submittal**	**0 days**	**Fri 8/21/26**	**Fri 8/21/26**	
46	Final Bid Documents	3 wks	Mon 8/24/26	Fri 9/11/26	
47	**Final Submittal**	**0 days**	**Fri 9/11/26**	**Fri 9/11/26**	
48	**ROW Mapping**	**261 days**	**Fri 8/15/25**	**Fri 8/14/26**	
49	Abstracting	4 wks	Fri 8/15/25	Thu 9/11/25	
50	Existing ROW/Easements Data	1 wk	Wed 9/17/25	Tue 9/23/25	
51	Create ROW Tracker	1 wk	Wed 9/24/25	Tue 9/30/25	
52	Draft ROW Document Preparation	6 wks	Mon 12/22/25	Fri 1/30/26	
53	Collin County Review & Concurrent Document Modifications	4 wks	Mon 2/2/26	Fri 2/27/26	
54	ROW Acquisition	6 mons	Mon 3/2/26	Fri 8/14/26	Collin County
55	Plan Processing	2.5 mons	Mon 9/14/26	Fri 11/20/26	Collin County,BGE
56	Letting	0 days	Fri 11/20/26	Fri 11/20/26	Collin County,BGE
57	Award Contract	1 mon	Mon 11/23/26	Fri 12/18/26	
58	Contractor Mobilization	2 mons	Mon 12/21/26	Fri 2/12/27	
59	Construction Management	150 days	Mon 2/15/27	Fri 9/10/27	
60	LOMR Paperwork	6 wks	Mon 8/2/27	Fri 9/10/27	



Project: CR 398
County: Collin

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

SUMMARY						
	Consultant					Total
	BGE, Inc.	ARS Engineers, Inc.	Lamb-Star Engineering, LLC	Terracon Consultants, Inc.	Kimley Horn	
BS1. ASSEMBLY AND REVIEW OF DATA	$ 33,910.00					$ 33,910.00
BS2. CORRIDOR ALTERNATIVES ANALYSIS	$ 69,840.00					$ 69,840.00
BS3. PUBLIC/STAKEHOLDER INVOLVEMENT	$ 51,120.00					$ 51,120.00
BS4. ROADWAY DESIGN	$ 136,925.00					$ 136,925.00
BS5. DRAINAGE DESIGN	$ 150,890.00					$ 150,890.00
BS6. TRAFFIC DESIGN	$ 23,150.00				$ 29,010.00	$ 52,160.00
DIRECT EXPENSES					$ 1,650.00	$ 1,650.00
BS7. STRUCTURAL DESIGN	$ 139,165.00					$ 139,165.00
BS8. PROJECT MANAGEMENT	$ 105,180.00					$ 105,180.00
DIRECT EXPENSES	$ 264.00					$ 264.00
Basic Services Labor Cost	$ 710,180.00	$ -	$ -	$ -	$ 29,010.00	$ 739,190.00
Basic Direct Expenses	$ 264.00	$ -	$ -	$ -	$ 1,650.00	$ 1,914.00
Basic Subtotal	$ 710,444.00	$ -	$ -	$ -	$ 30,660.00	$ 741,104.00
SS1. SURVEY AND ROW	$ 84,490.00		$ 17,090.00			$ 101,580.00
DIRECT EXPENSES			$ 584.40			$ 584.40
SS2. GEOTECHNICAL SERVICES	$ 11,280.00			$23,667.11		$ 34,947.11
DIRECT EXPENSES				$34,372.50		$ 34,372.50
SS3. ENVIRONMENTAL SERVICES	$ 19,593.00					$ 19,593.00
DIRECT EXPENSES	$ 266.00					$ 266.00
Special Services Labor Cost	$ 115,363.00	$ -	$ 17,090.00	$ 23,667.11	$ -	$ 156,120.11
Special Direct Expenses	$ 266.00	$ -	$ 584.40	$34,372.50	$ -	$ 35,222.90
Special Services Subtotal	$ 115,629.00	$ -	$ 17,674.40	$ 58,039.61	$ -	$ 191,343.01
Basic and Special Services (Lump Sum) Total	**$ 826,073.00**	**$ -**	**$ 17,674.40**	**$ 58,039.61**	**$ 30,660.00**	**$ 914,772.61**
IS1. SUBSURFACE UTILITY ENGINEERING (SUE)	$ 9,950.00	$ 1,080.00				$ 11,030.00
DIRECT EXPENSES	$ 41,250.00	$ 14,179.00				$ 55,429.00
IS2. UTILITY COORDINATION	$ 50,450.00					$ 50,450.00
IS3. SURVEY	$ 8,100.00					$ 8,100.00
IS4. FM 546 INTERSECTION IMPROVEMENTS	$ 113,790.00					$ 113,790.00
IS5. ENVIRONMENTAL SERVICES	$ 26,682.00					$ 26,682.00
IS6. BID PHASE SERVICES	$ 74,280.00					$ 74,280.00
IS7. LETTER OF MAP REVISION (LOMR)	$ 28,750.00					$ 28,750.00
IS8. CONSTRUCTION SERVICES	$ 420,853.80					$ 420,853.80
DIRECT EXPENSES	$ 21,590.00					$ 21,590.00
Total Incremental Services Labor Cost	$ 732,855.80	$ 1,080.00	$ -	$ -	$ -	$ 733,935.80
Total Incremental Services Direct Expenses	$ 62,840.00	$ 14,179.00	$ -	$ -	$ -	$ 77,019.00
Incremental Services (Time & Materials) Subtotal	**$ 795,695.80**	**$ 15,259.00**	**$ -**	**$ -**	**$ -**	**$ 810,954.80**
Grand Total	**$ 1,621,768.80**	**$ 15,259.00**	**$ 17,674.40**	**$ 58,039.61**	**$ 30,660.00**	**$ 1,725,727.41**
Percent of Total Fee	**93.98%**	**0.88%**	**1.02%**	**3.36%**	**1.78%**	

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
BS1. ASSEMBLY AND REVIEW OF DATA											
Collection of Data, Reports, and Maps				8	4	8	20		**40**		**$7,960.00**
Field Reconnaissance					8		8		**16**		**$3,120.00**
Creation and Review of Base Files			4		8	12	24	16	**64**		**$11,860.00**
Preliminary Design Conference				8	12				**20**		**$5,280.00**
Develop Design Criteria			2		8	16			**26**		**$5,690.00**
BS1. ASSEMBLY AND REVIEW OF DATA Total Hours		0	6	16	40	36	52	16	**166**		
BS1. ASSEMBLY AND REVIEW OF DATA Total Cost		$0.00	$1,710.00	$4,800.00	$9,600.00	$7,200.00	$7,800.00	$2,800.00			**$33,910.00**

BS2. CORRIDOR ALTERNATIVES ANALYSIS											
Revised Alignment Alternatives				4	8	12	12		**36**		**$7,320.00**
Identification of Impacts			2		8	8	8		**26**		**$5,290.00**
Preparation of Scoring Matrix			2	4	8	8	8		**30**		**$6,490.00**
Develop 3D Model			4		20	40	40		**104**		**$19,940.00**
Exhibit Preparation			2		8			20	**30**		**$5,990.00**
Prepare and Attend Coordination Meeting (Up to 3)			8	8	16	24	24		**80**		**$16,920.00**
Quantities and Estimate			2	4	8	12	12		**38**		**$7,890.00**
BS2. CORRIDOR ALTERNATIVES ANALYSIS Total Hours		0	20	20	76	104	104	20	**344**		
BS2. CORRIDOR ALTERNATIVES ANALYSIS Total Cost		$0.00	$5,700.00	$6,000.00	$18,240.00	$20,800.00	$15,600.00	$3,500.00			**$69,840.00**

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
BS3. PUBLIC/STAKEHOLDER INVOLVEMENT											
Task A - Public Involvement Management											
Develop and Maintain Property Owner and Stakeholder Input					36				**36**		**$8,640.00**
Task B - Meetings with Affected Property Owners											
Develop Property Exhibits (Up to 13)					7	52			**59**		**$12,080.00**
Prepare for and attend MAPO (Up to 13)				20	20				**40**		**$10,800.00**
Task C - Additional Property Owner/Stakeholder Coordination											
Develop Technical PowerPoint Presentation (Up to 2)				4	32	32			**68**		**$15,280.00**
Prepare for and Attend Coordination Meeting (up to 2)				8	8				**16**		**$4,320.00**
BS3. PUBLIC/STAKEHOLDER INVOLVEMENT Total Hours		0	0	32	103	84	0	0	**219**		
BS3. PUBLIC/STAKEHOLDER INVOLVEMENT Total Cost		$0.00	$0.00	$9,600.00	$24,720.00	$16,800.00	$0.00	$0.00			**$51,120.00**

BS4. ROADWAY DESIGN											
GENERAL											
Typical Sections (Existing and Proposed)	**2**	1			3	8	8	16	**36**	**18.0**	**$6,620.00**
Miscellaneous Sheets											
Title Sheet	**1**	1			2			8	**11**	**11.0**	**$2,180.00**
Index of Sheets	**1**	1			1			10	**12**	**12.0**	**$2,290.00**
Project Layout Sheets	**1**	1			1	10		12	**24**	**24.0**	**$4,640.00**
Survey Control Data Sheets	**3**		1					3	**4**	**1.3**	**$810.00**
Estimate & Quantity Summary Sheet	**2**		1					2	**3**	**1.5**	**$635.00**
Summary of Quantities Sheet	**5**		1					5	**6**	**1.2**	**$1,160.00**

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
TRAFFIC CONTROL PLAN											
Traffic Control Advance Warning Layout	**2**	1			4	8	8	8	**29**	**14.5**	**$5,460.00**
Traffic Control Typical Sections	**2**	1			4	4	8	8	**25**	**12.5**	**$4,660.00**
Sequence of Construction, Narrative, and General Notes	**2**	1			4	6		4	**15**	**7.5**	**$3,160.00**
Traffic Control Layouts	**9**	1			16	20	20	16	**73**	**8.1**	**$13,940.00**
Intersection Staging Plans	**2**				2	4		4	**10**	**5.0**	**$1,980.00**
Driveway Staging Plans	**1**				1			2	**3**	**3.0**	**$590.00**
Traffic Control Standard Details	**N/A**	1			2			2	**5**	**N/A**	**$1,130.00**
ROADWAY											
Horizontal Alignment Data Sheet	**2**	1			1			4	**6**	**3.0**	**$1,240.00**
Removal Sheets	**7**	1			16	24		12	**53**	**7.6**	**$11,040.00**
Plan and Profile Sheets (1"=100' Scale)											
CR 398	**3**	1			14	40	54	24	**133**	**44.3**	**$23,960.00**
Intersection Layout Sheets (1"=40' Scale)	**1**				2	8	8	4	**22**	**22.0**	**$3,980.00**
Driveway Profiles / Details Summary (up to 10 driveways)	**1**				1	8	4	4	**17**	**17.0**	**$3,140.00**
Miscellaneous Roadway Details	**1**				1	8	4	4	**17**	**17.0**	**$3,140.00**
Roadway Cross Sections (100' intervals)	**11**	1			10	48	48	8	**115**	**10.5**	**$20,900.00**
Assembly of Roadway Standards	**N/A**					2		2	**4**	**N/A**	**$750.00**
PS&E Package Coordination											
Plan assembly with sheet numbers & printing	**167**				1			12	**13**	**0.1**	**$2,340.00**
TCP Quantities		1			1	6			**8**		**$1,740.00**
Earthwork Quantities		1			1	8	8		**18**		**$3,340.00**
Roadway Quantities		1			1	8	8		**18**		**$3,340.00**
QUALITY CONTROL (ROADWAY)											
QAQC will be performed prior to each submittal		2	16	12					**30**		**$8,760.00**
BS4. ROADWAY DESIGN Total Hours		18	19	12	89	220	178	174	**710**		
BS4. ROADWAY DESIGN Total Cost		$5,400.00	$5,415.00	$3,600.00	$21,360.00	$44,000.00	$26,700.00	$30,450.00			**$136,925.00**

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
BS5. DRAINAGE DESIGN											
PRELIMINARY DESIGN DRAINAGE											
Local Cross Drainage											
Drainage Area Mapping					2		4		**6**		**$1,080.00**
Calculate Discharges					4		16		**20**		**$3,360.00**
Size & Locate Cross Drainage Structures					2		8		**10**		**$1,680.00**
Regional Drainage											
Aquire FEMA Maps							1		**1**		**$150.00**
Drainage Area Mapping					2		4		**6**		**$1,080.00**
Calculate Discharges					8		24		**32**		**$5,520.00**
Develop Hydraulic Models					8		32		**40**		**$6,720.00**
Identify Easement Requirements		2			8		16		**26**		**$4,920.00**
Closed Storm Sewer System						16			**16**		**$3,200.00**
Drainage Report											
Project Features					2		4		**6**		**$1,080.00**
Hydrology					2		8		**10**		**$1,680.00**
Hydraulics					2		8		**10**		**$1,680.00**
Summary of Conclusions/Recommendations					2		16		**18**		**$2,880.00**
Photographs, Figures, and Appendicies					12		40		**52**		**$8,880.00**
Electronic Data							4		**4**		**$600.00**
Finalized Document		2			2				**4**		**$1,080.00**
PS&E DRAINAGE DESIGN											
HYDROLOGY											
Offsite drainage area map (1"=1000' Scale)	**1**				2	4	4	8	**18**	**18.0**	**$3,280.00**
Storm sewer inlet area maps (1"=100' Scale)	**2**				2	4	4	8	**18**	**9.0**	**$3,280.00**
HYDRAULICS											
Hydraulic Design for Culverts & Storm Sewer											
Hydraulic Design for one (1) Culvert	**1**			1	2		4		**7**	**7.0**	**$1,380.00**
Hydraulic Design for one (1) Bridge Crossing	**1**			1	4		8		**13**	**13.0**	**$2,460.00**

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
Hydraulic Design for Storm Sewer	**2**			4	16	40		24	**84**	**42.0**	**$17,240.00**
DRAINAGE STRUCTURE DESIGN											
Hydraulic Data Sheets	**4**				1	4	16	8	**29**	**7.3**	**$4,840.00**
Culvert Plan & Profiles (1"=20' Scale)	**1**				2	12	24	16	**54**	**54.0**	**$9,280.00**
Storm Sewer Plan & Profile Sheets (1"=100' Scale)	**4**				8	24	40	40	**112**	**28.0**	**$19,720.00**
Miscellaneous Drainage Details	**1**				1		4		**5**	**5.0**	**$840.00**
Assembly of Drainage Standards	**4**				1		2		**3**	**0.8**	**$540.00**
OPEN CHANNEL DESIGN											
Special Ditch/Channel Layout Sheets (1"=50')	**1**				1	2	8		**11**	**11.0**	**$1,840.00**
HYDRAULIC REPORT											
Update Hydraulic Report	**1**				1	4	8		**13**	**13.0**	**$2,240.00**
Scour Analysis	**1**				1	2	8		**11**	**11.0**	**$1,840.00**
STORM WATER POLLUTION PREVENTION PLAN (SW3P)											
SW3P Data Sheet	**6**			2		4		6	**12**	**2.0**	**$2,450.00**
SW3P Layouts (1"=100' Scale) (each phase)	**8**			2	8	12	16	16	**54**	**6.8**	**$10,120.00**
Temporary Drainage	**4**				2	4	4	8	**18**	**4.5**	**$3,280.00**
Assembly of SW3P Standards	**4**					2		2	**4**	**1.0**	**$750.00**
PS&E Package Coordination											
SW3P Quantities	**1**			1	2		4		**7**	**7.0**	**$1,380.00**
Culvert Quantities	**1**			1	2		4		**7**	**7.0**	**$1,380.00**
Storm Sewer Quantities	**1**			1	4		8		**13**	**13.0**	**$2,460.00**
QUALITY CONTROL (DRAINAGE)											
QAQC will be performed prior to each submittal		11	40						**51**		**$14,700.00**
BS5. DRAINAGE DESIGN Total Hours		15	40	13	116	134	351	136	**805**		
BS5. DRAINAGE DESIGN Total Cost		$4,500	$11,400	$3,900	$27,840	$26,800	$52,650	$23,800			**$150,890.00**

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
BS6. TRAFFIC DESIGN											
SIGNING AND PAVEMENT MARKINGS											
Signing and Pavement Marking Layout (1"=200' Scale)	**2**			4	16		24	14	**58**	**29.0**	**$11,090.00**
Assembly of Sign and Marking Standards	**8**					2		2	**4**	**0.5**	**$750.00**
ILLUMINATION											
Design Safety Lighting (at 1 Intersection)				1	3		8	2	**14**		**$2,570.00**
TRAFFIC SIGNALS											
Perform Warrant Studies (at 1 intersection)				1	3		6		**10**		**$1,920.00**
PS&E Package Coordination											
Plan assembly with sheet numbers & printing	**19**							4	**4**	**0.2**	**$700.00**
Traffic Quantities					4				**4**		**$960.00**
QUALITY CONTROL (TRAFFIC)											
QAQC will be performed prior to each submittal		2	16						**18**		**$5,160.00**
BS6. TRAFFIC DESIGN Total Hours		2	16	6	26	2	38	22	**112**		
BS6. TRAFFIC DESIGN Total Cost		$600.00	$4,560.00	$1,800.00	$6,240.00	$400.00	$5,700.00	$3,850.00			**$23,150.00**

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
BS7. STRUCTURAL DESIGN											
EAST FORK TRINITY RIVER TRIBUTARY 1											
Design Option Coordination		4		4	8				**16**		**$4,320.00**
Exhibit Roll Plot				4	16		16		**36**		**$7,440.00**
Superstructure Design Analysis				8	8		16		**32**		**$6,720.00**
Substructure Design Analysis				8	12		24		**44**		**$8,880.00**
Foundation Design Analysis				8	8		12		**28**		**$6,120.00**
Bridge Construction Sequence & Coordination				4	8		8		**20**		**$4,320.00**
Bridge Layouts (1"=40' Scale)	**1**				8		12	24	**44**	**44.0**	**$7,920.00**
Bridge Typical Sections	**1**				8		12	24	**44**	**44.0**	**$7,920.00**
Summary of Bridge Quantities/Bearing Seat Elevations	**1**				4		8	16	**28**	**28.0**	**$4,960.00**
Abutment Details	**4**				16		32	48	**96**	**24.0**	**$17,040.00**
Bent Details	**1**				4		8	12	**24**	**24.0**	**$4,260.00**
Foundation Plans	**1**				4		4	8	**16**	**16.0**	**$2,960.00**
Framing Plan/Bent Report	**1**				8		12	16	**36**	**18.0**	**$6,520.00**
Slab Plan	**2**				12		24	48	**84**	**21.0**	**$14,880.00**
Beam Design Sheet (IGND)	**1**				2		4	8	**14**	**14.0**	**$2,480.00**
Calculation Package					12		24		**36**	**36.0**	**$6,480.00**
PS&E Package Coordination											
Plan assembly with sheet numbers & printing	**2**				7			7	**14**	**7.0**	**$2,905.00**
QUALITY CONTROL (BRIDGE)											
QAQC will be performed prior to each submittal	**2**		64	16					**80**		**$23,040.00**
BS7. STRUCTURAL DESIGN Total Hours		4	64	52	145	0	216	211	**692**		
BS7. STRUCTURAL DESIGN Total Cost		$1,200.00	$18,240.00	$15,600.00	$34,800.00	$0.00	$32,400.00	$36,925.00			**$139,165.00**

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
BS8. PROJECT MANAGEMENT											
Project Coordination and Resolution Meetings											
30% Design Status and Coordination Meeting		4			8				**12**		**$3,120.00**
60% Comment Review Resolution Meeting & Responses		4			16				**20**		**$5,040.00**
90% Comment Review Resolution Meeting & Responses		8			16				**24**		**$6,240.00**
100% Comment Review Resolution Meeting & Responses		8			12				**20**		**$5,280.00**
Stakeholder Coordination Meetings (Assume 12 meetings)		8			18				**26**		**$6,720.00**
PS&E Package Coordination											
Coordination with subconsultants for deliverables		4			16			16	**36**		**$7,840.00**
Develop Cost Estimate at each submittal		4			8				**12**		**$3,120.00**
Develop Project Quality Management Plan (PQMP)		16							**16**		**$4,800.00**
Project Administration (Assume 12 months)		12			12				**24**		**$6,480.00**
Stakeholder Coordination (additional coordination beyond meetings)					160				**160**		**$38,400.00**
Bid Preparation											
Construction time line		1		4	8	16	8		**37**		**$7,820.00**
Governing Specifications		8		8	8				**24**		**$6,720.00**
Invoicing (Assume 12 months)		12							**12**		**$3,600.00**
BS8. PROJECT MANAGEMENT Total Hours		89	0	12	282	16	8	16	**423**		
BS8. PROJECT MANAGEMENT Total Cost		$26,700.00	$0.00	$3,600.00	$67,680.00	$3,200.00	$1,200.00	$2,800.00			**$105,180.00**

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
SS2. GEOTECHNICAL SERVICES											
Field Investigation											
Coordination of Field Investigation Activities		4			4				**8**		**$2,160.00**
Laboratory Investigation											
Review of Laboratory Investigation Activites		8							**8**		**$2,400.00**
Engineering Analysis											
Review and Coordination of Geotechnical Report		16			8				**24**		**$6,720.00**
SS2. GEOTECHNICAL SERVICES Total Hours		28	0	0	12	0	0	0	**40**		
SS2. GEOTECHNICAL SERVICES Total Cost		$8,400.00	$0.00	$0.00	$2,880.00	$0.00	$0.00	$0.00			**$11,280.00**
IS4. FM 546 INTERSECTION IMPROVEMENTS											
GENERAL SHEETS											
Typical Sections (Existing and Proposed)	**2**	1			1	4	8	16	**30**	**15.0**	**$5,340.00**
TRAFFIC CONTROL PLAN											
Traffic Control Advance Warning Layout		1			4	8	8	8	**29**		**$5,460.00**
Traffic Control Typical Sections		1			4	4	8	8	**25**		**$4,660.00**
Sequence of Construction, Narrative, and General Notes		1			4	6		4	**15**		**$3,160.00**
Traffic Control Layouts		1			12	16	16	12	**57**		**$10,880.00**
Intersection Staging Plans					2	4		4	**10**		**$1,980.00**
Driveway Staging Plans					1			2	**3**		**$590.00**
Traffic Control Standard Details		1			2			2	**5**		**$1,130.00**
ROADWAY											
Horizontal Alignment Data Sheet	**1**				1			2	**3**	**3.0**	**$590.00**
Removal Sheets	**1**				8	12		12	**32**	**32.0**	**$6,420.00**
Plan and Profile Sheets (1"=100' Scale)											
FM 546	**1**				2	12	24	8	**46**	**46.0**	**$7,880.00**
Intersection Layout Sheets (1"=40' Scale)	**1**				2	8	8	4	**22**	**22.0**	**$3,980.00**
Roadway Cross Sections (100' intervals)	**2**				1	2	12	8	**23**	**11.5**	**$3,840.00**

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
SIGNING AND PAVEMENT MARKINGS											
Signing and Pavement Marking Layout (1"=200' Scale)	1			2	12		16	8	**38**	**38.0**	**$7,280.00**
TRAFFIC SIGNAL DESIGN											
Traffic Signal Layout		2			16		32	16	**66**		**$12,040.00**
Traffic Signal Details		1			32		60	20	**113**		**$20,480.00**
Assembly of Traffic Signal Standards					1		4		**5**		**$840.00**
TDLR		1	4						**5**		**$1,440.00**
PS&E Package Coordination											
Plan assembly with sheet numbers & printing								8	**8**		**$1,400.00**
TCP Quantities				1	1	6			**8**		**$1,740.00**
Earthwork Quantities				1	1	4	4		**10**		**$1,940.00**
Roadway Quantities				1	1	4	4		**10**		**$1,940.00**
Traffic Quantities				1	1	4	4		**10**		**$1,940.00**
QUALITY CONTROL											
QAQC will be performed prior to each submittal			24						**24**		**$6,840.00**
IS4. FM 546 INTERSECTION IMPROVEMENTS Total Hours		10	28	6	109	94	208	142	**597**		
IS4. FM 546 INTERSECTION IMPROVEMENTS Total Cost		$3,000.00	$7,980.00	$1,800.00	$26,160.00	$18,800.00	$31,200.00	$24,850.00			**$113,790.00**

IS6. BID PHASE SERVICES											
Bidding Documents		40		12	24	24			**100**		**$26,160.00**
Prebid Conference		16			40				**56**		**$14,400.00**
Bid Document Interpretations and Addenda		40		8	8	24	24		**104**		**$24,720.00**
Bid Opening and Tabulation		8					8		**16**		**$3,600.00**
Recommendation of Contract Award		4							**4**		**$1,200.00**
Issue Construction Contract Documents		8					12		**20**		**$4,200.00**
IS6. BID PHASE SERVICES Total Hours		116	0	20	72	48	44	0	**300**		
IS6. BID PHASE SERVICES Total Cost		$34,800.00	$0.00	$6,000.00	$17,280.00	$9,600.00	$6,600.00	$0.00			**$74,280.00**

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
IS7. LETTER OF MAP REVISION (LOMR)											
Post Grading Survey		See BGE Survey Table							-		-
Prepare Submittal to FEMA			1		8		24		**33**		**$5,805.00**
Notify Adjacent Property Owners of Floodplain Changes			1		4		8		**13**		**$2,445.00**
Finalize LOMR			1		9		16		**26**		**$4,845.00**
Address FEMA review comments			1		4		16		**21**		**$3,645.00**
FEMA LOMR Review Fee											**$8,000.00**
IS7. LETTER OF MAP REVISION (LOMR) Total Hours		0	4	0	25	0	64	0	**93**		
IS7. LETTER OF MAP REVISION (LOMR) Total Cost		$0.00	$1,140.00	$0.00	$6,000.00	$0.00	$9,600.00	$0.00			**$24,740.00**

EXHIBIT C - Fee Schedule
Method of Payment: Lump Sum with exception of Incremental Services

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00			
Total Hours		282	197	189	1095	738	1263	737	**4501**		
Total Costs		$84,600.00	$56,145.00	$56,700.00	$262,800.00	$147,600.00	$189,450.00	$128,975.00			**$926,270.00**

BASIC SERVICES DIRECT EXPENSES					
		Unit	Rate	Quantity	Totals
8.5" x 11" Copies (b&w)		EA	$0.10		$0.00
11" x 17" Copies (b&w)		EA	$0.20		$0.00
11"x17" Copies (color)		EA	$1.25		$0.00
COLOR Roll Plots		SF	$3.20		$0.00
Binding		EA	$20.00		$0.00
Binding		EA	$20.00		$0.00
Binding		EA	$20.00		$0.00
Binding		EA	$20.00		$0.00
USB Thumb Drive		EA	$15.00		$0.00
Postage (express mail)		EA	$2.00		$0.00
Car Mileage		MI	$0.70	320	$224.00
Miscellaneous Supplies (w/approval from County PM)		EA	$100.00		$0.00
Toll Charges (each)		EA	$5.00	8	$40.00
GPS Unit		EA	$100.00		$0.00
					$0.00
					$0.00
				TOTAL BASIC DIRECT EXPENSES	**$264.00**

Summary	
BS1. ASSEMBLY AND REVIEW OF DATA	$33,910.00
BS2. CORRIDOR ALTERNATIVES ANALYSIS	$69,840.00
BS3. PUBLIC/STAKEHOLDER INVOLVEMENT	$51,120.00
BS4. ROADWAY DESIGN	$136,925.00
BS5. DRAINAGE DESIGN	$150,890.00
BS6. TRAFFIC DESIGN	$23,150.00
BS7. STRUCTURAL DESIGN	$139,165.00
BS8. PROJECT MANAGEMENT	$105,180.00
Basic Services Labor Costs	**$710,180.00**
Basic Services Expenses Costs	**$264.00**
Basic Services Total Costs	**$710,444.00**
SS2. GEOTECHNICAL SERVICES	$11,280.00
Special Services Labor Costs	**$11,280.00**
Special Services Expenses Costs	**$0.00**
Special Services Total Costs	**$11,280.00**
IS4. FM 546 INTERSECTION IMPROVEMENTS	$113,790.00
IS6. BID PHASE SERVICES	$74,280.00
IS7. LETTER OF MAP REVISION	$24,740.00
Incremental Services Labor Costs	**$212,810.00**
Incremental Services Expenses Costs	**$0.00**
Incremental Services Total Costs	**$212,810.00**
SUBTOTAL (BGE, ENGINEERING)	**$934,534.00**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc.

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	ENV PM	Sr. ENV Scientist	ENV Scientist II	ENV Scientist I	GIS	Principal Investigator	Project Archaeologist	Staff Archaeologist	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$200.00	$130.00	$125.00	$110.00	$173.00	$164.00	$131.00	$107.00			
SS3. ENVIRONMENTAL SERVICES												
Section 404 of the Clean Water Act												
Wetland Delineation				2	1	2	1	15		**21**		**$2,835.00**
Jurisdictional Assessment				2	1	2	1	15		**21**		**$2,835.00**
Threatened and Endangered Species Habitat Assessment				2	1	2	1	15		**21**		**$2,835.00**
Antiquities Code of Texas												
Texas Historical Commission Notification Letter		2				12	4	10	25	**53**		**$7,117.00**
Coordination with Texas Historical Commission		1					2	1		**4**		**$659.00**
Texas Antiquities Permit Application		2				6	2	2	12	**24**		**$3,312.00**
SS3. ENVIRONMENTAL SERVICES Total Hours		5	0	6	3	24	11	58	37	**144**		
SS3. ENVIRONMENTAL SERVICES Total Cost		$1,000.00	$0.00	$750.00	$330.00	$4,152.00	$1,804.00	$7,598.00	$3,959.00			**$19,593.00**

IS5. ENVIRONMENTAL SERVICES												
Nationwide Permit 14 Pre-Construction Notification												
Nationwide Permit Pre-Construction Notification (PCN) Package		5		3	4	30				**42**		**$7,005.00**
USACE coordination and address comments		8		5		5				**18**		**$3,090.00**
USACE/BGE Project Site Visit		1		3		3				**7**		**$1,094.00**
Cultural Resources Investigation												
Archeological Survey				1	6	12	36			**55**		**$8,765.00**
Cultural Resource Site Delineations (If identified)					8	14	10			**32**		**$4,942.00**
Cultural Resources/ Archeological Survey Report					1	4	6			**11**		**$1,786.00**
IS5. ENVIRONMENTAL SERVICES Total Hours		14	0	12	19	68	52	0	0	**165**		
IS5. ENVIRONMENTAL SERVICES Total Cost		$2,800.00	$0.00	$1,500.00	$2,090.00	$11,764.00	$8,528.00	$0.00	$0.00			**$26,682.00**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc.

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	ENV PM	Sr. ENV Scientist	ENV Scientist II	ENV Scientist I	GIS	Principal Investigator	Project Archaeologist	Staff Archaeologist	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$200.00	$130.00	$125.00	$110.00	$173.00	$164.00	$131.00	$107.00			
Total Hours		19	0	18	22	92	63	58	37	**309**		
Total Cost		$3,800.00	$0.00	$2,250.00	$2,420.00	$15,916.00	$10,332.00	$7,598.00	$3,959.00			**$46,275.00**

SPECIAL SERVICES DIRECT EXPENSES					
		Unit	**Rate**	**Quantity**	**Totals**
8.5" x 11" Copies (b&w)		EA	$0.10		$0.00
11" x 17" Copies (b&w)		EA	$0.20		$0.00
11"x17" Copies (color)		EA	$1.25		$0.00
COLOR Roll Plots		SF	$3.20		$0.00
Binding		EA	$20.00		$0.00
Binding		EA	$20.00		$0.00
Binding		EA	$20.00		$0.00
Binding		EA	$20.00		$0.00
USB Thumb Drive		EA	$15.00		$0.00
Postage (express mail)		EA	$2.00		$0.00
Car Mileage		MI	$0.70	80	$56.00
Miscellaneous Supplies (w/approval from County PM)		EA	$100.00		$0.00
Toll Charges (each)		EA	$5.00	2	$10.00
Toll Charges (each)		EA	$5.00		$0.00
GPS Unit		EA	$100.00	2	$200.00
					$0.00
					$0.00
				TOTAL BASIC DIRECT EXPENSES	**$266.00**

Summary	
SS3. ENVIRONMENTAL SERVICES	
Special Services Labor Costs	**$19,593.00**
Special Services Expenses Costs	**$266.00**
Special Services Total Costs	**$19,859.00**
IS5. ENVIRONMENTAL SERVICES	
Incremental Services Labor Costs	**$26,682.00**
Incremental Services Expenses Costs	**$0.00**
Incremental Services Total Costs	**$26,682.00**
SUBTOTAL (BGE, ENVIRONMENTAL SERVICES)	**$46,541.00**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc.

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	RPLS	Survey Tech	Survey Crew (2 man)	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$200.00	$140.00	$220.00	$175.00			
SS1. SURVEY AND ROW										
Field surveying										
Provide detailed topographic survey in areas where development has changed			4			40		**44**		**$9,940.00**
Provide 2D topographic data			2		16			**18**		**$2,810.00**
Provide 3D Digital Terrain Model (DTM)			2		24			**26**		**$3,930.00**
Develop Horizontal and Vertical Control			2		20			**22**		**$3,370.00**
ROE permission and tracking			2		16			**18**		**$2,810.00**
ROW										
Update and Maintain Parcel Document Tracker		12			60			**72**		**$12,000.00**
Collection and Review of Property Records			2		26			**28**		**$4,210.00**
Parcel Exhibit Maps			6	2	164	40	66	**278**		**$45,420.00**
SS1. SURVEY AND ROW Total Hours		12	20	2	326	80	66	**506**		
SS1. SURVEY AND ROW Total Cost		$3,600.00	$5,700.00	$400.00	$45,640.00	$17,600.00	$11,550.00			**$84,490.00**

IS3. SURVEY										
Field surveying										
Provide detailed topographic survey for upstream and downstream of bridge			2			24		**26**		**$5,850.00**
Provide 2D topographic data			1		8			**9**		**$1,405.00**
Provide 3D Digital Terrain Model (DTM)			1		4			**5**		**$845.00**
IS3. SURVEY Total Hours		0	4	0	12	24	0	**40**		
IS3. SURVEY Total Cost		$0.00	$1,140.00	$0.00	$1,680.00	$5,280.00	$0.00			**$8,100.00**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc.

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	RPLS	Survey Tech	Survey Crew (2 man)	CADD Operator	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$300.00	$285.00	$200.00	$140.00	$220.00	$175.00			
IS7. LETTER OF MAP REVISION										
Post Grading Survey			2		12	8		**22**		**$4,010.00**
IS7. LETTER OF MAP REVISION Total Hours		0	2	0	12	8	0	**22**		
IS7. LETTER OF MAP REVISION Total Cost		$0.00	$570.00	$0.00	$1,680.00	$1,760.00	$0.00			**$4,010.00**
Total Hours		12	26	2	350	112	66	**568**		
Total Cost		$3,600.00	$7,410.00	$400.00	$49,000.00	$24,640.00	$11,550.00			**$96,600.00**

SPECIAL SERVICES DIRECT EXPENSES					
		Unit	**Rate**	**Quantity**	**Totals**
Utility Vehicle UTV		DAY	$125.00		$0.00
GPS Unit		HOURS	$25.00		$0.00
TOTAL SPECIAL SERVICES EXPENSES					**$0.00**
INCREMENTAL SERVICES EXPENSES					
		Unit	**Rate**	**Quantity**	**Totals**
Utility Vehicle UTV		DAY	$125.00		$0.00
GPS Unit		HOURS	$25.00		$0.00
TOTAL INCREMENTAL SERVICES EXPENSES					**$0.00**

Summary	
SS1. SURVEY AND ROW	$84,490.00
Special Services Labor Costs	**$84,490.00**
Special Services Expenses Costs	**$0.00**
Special Services Total Costs	**$84,490.00**
IS3. SURVEY	$8,100.00
IS3. SURVEY	$4,010.00
Incremental Services Labor Costs	**$12,110.00**
Incremental Services Expenses Costs	**$0.00**
Incremental Services Total Costs	**$12,110.00**
SUBTOTAL (BGE, SURVEY AND ROW)	**$96,600.00**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc.

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	2-Man Survey Crew	2-Man SUE Crew	Total Labor Hours	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00	$145.00	$145.00		
IS1. SUBSURFACE UTILITY ENGINEERING (SUE)												
Quality Level B (QL B) Services												
Project Coordination and Management		1									**1**	**$300.00**
Data Processing												
QA/QC			2								**2**	**$570.00**
Quality Level C/D Services (In addition to Level B services)					7		25				**32**	**$5,430.00**
Aerial investigation and collection of SAG elevations							5		10	10	**25**	**$3,650.00**
IS1. SUBSURFACE UTILITY ENGINEERING (SUE) Total Hours		1	2	0	7	0	30	0	10	10	**60**	
IS1. SUBSURFACE UTILITY ENGINEERING (SUE) Total Cost		$300.00	$570.00	$0.00	$1,680.00	$0.00	$4,500.00	$0.00	$1,450.00	$1,450.00		**$9,950.00**

IS2. UTILITY COORDINATION												
Utility Adjustment Coordination												
Coordination of Utility Information				10	10		10				**30**	**$6,900.00**
Utility Conflict Matrix and Cost Estimates				10	15		20				**45**	**$9,600.00**
Utility Exhibits					10		20	20			**50**	**$8,900.00**
Regular Coordination Meetings					20		20				**40**	**$7,800.00**
Site Visits				15	15		15				**45**	**$10,350.00**
QUALITY CONTROL (Utilities)												
QAQC will be performed prior to each submittal				10	10		10				**30**	**$6,900.00**
IS2. UTILITY COORDINATION Total Hours		0	0	45	80	0	95	20	0	0	**240**	
IS2. UTILITY COORDINATION Total Cost		$0.00	$0.00	$13,500.00	$19,200.00	$0.00	$14,250.00	$3,500.00	$0.00	$0.00		**$50,450.00**

CR 398
Prime Provider: BGE, Inc.
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	QA/QC Manager	Senior Engineer	Project Engineer	Design Engineer	Engineer-in-Training	CADD Operator	2-Man Survey Crew	2-Man SUE Crew	Total Labor Hours	Total Labor Costs
		$300.00	$285.00	$300.00	$240.00	$200.00	$150.00	$175.00	$145.00	$145.00		
IS2. UTILITY COORDINATION Total Hours		1	2	45	87	0	125	20	10	10	**300**	
IS2. UTILITY COORDINATION Total Cost		$300.00	$570.00	$13,500.00	$20,880.00	$0.00	$18,750.00	$3,500.00	$1,450.00	$1,450.00		**$60,400.00**

INCREMENTAL SERVICES DIRECT EXPENSES					
		Unit	**Rate**	**Quantity**	**Totals**
SUE Quality Level B (Includes labor and equipment for field designating, engineering, surveying, CADD, and limited Traffic Control.)		LF	$1.65	25000	$41,250.00
				TOTAL BASIC DIRECT EXPENSES	**$41,250.00**

Summary	
IS1. SUBSURFACE UTILITY ENGINEERING (SUE)	$9,950.00
IS2. UTILITY COORDINATION	$50,450.00
Incremental Services Labor Costs	**$60,400.00**
Incremental Services Expenses Costs	**$41,250.00**
Incremental Services Total Costs	**$101,650.00**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc.

Sub-Consultant: ARS Engineers, Inc.

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	Project Engineer	Engineer In-Training	Sr CADD Operator	Field Coordinator	ARS Admin/ Clerical	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$225.00	$165.00	$115.00	$105.00	$145.00	$75.00			
IS1. SUBSURFACE UTILITY ENGINEERING (SUE)										
Quality Level A (QL A) Services										
Project Coordination and Management		1					1	**2**		**$300.00**
QA/QC			1	1	2	2		**6**		**$780.00**
Hours		1	1	1	2	2	1	**8**		
IS1. SUBSURFACE UTILITY ENGINEERING (SUE) Total Cost		$225.00	$165.00	$115.00	$210.00	$290.00	$75.00			**$1,080.00**

INCREMENTAL SERVICES DIRECT EXPENSES		Unit	Rate	Quantity	Totals
SUE (Quality Level A - Utility Locate, 6 Test Holes with Test Hole Summary as Deliverable)					
0-5 Vacuum Excavation		Each	$1,250.00	3	$3,750.00
5-8 Vacuum Excavation		Each	$1,400.00	2	$2,800.00
8-13 Vacuum Excavation		Each	$1,700.00	1	$1,700.00
>20 FT.		Each	$2,050.00	0	$0.00
SUE Mobilization/Demobilization		mile	$5.75	60	$345.00
SUE Field Services Two (2) Designating Persons With Equipment		Hour	$250.00	12	$3,000.00
Other Direct Expenses					
Traffic Control		Day	$2,500.00	1	$2,500.00
Mileage		Mile	$0.70	120	$84.00
Lodging/Hotel - Taxes and Fees		day/person	$54.00	0	$0.00
Lodging/Hotel - Taxes and Fees not included		day/person	$110.00	0	$0.00
Meals (Excluding alcohol & tips)(Overnight stay required)		day/person	$68.00	0	$0.00
TOTAL BASIC DIRECT EXPENSES					**$14,179.00**

Summary	
IS1. SUBSURFACE UTILITY ENGINEERING (SUE)	$1,080.00
Incremental Services Labor Costs	**$1,080.00**
Incremental Services Expenses Costs	**$14,179.00**
Incremental Services Total Costs	**$15,259.00**
ARS Engineers, Inc. - Total	**$15,259.00**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc. **Sub-Consultant: Lamb-Star Engineering, LLC**

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Properties	Project Manager	RPLS Task Lead	GIS Technician	Survey Tech	Abstractor	Admin / Clerical	Total Labor Hours	Hours / Property	Total Labor Costs
		$320.00	$210.00	$125.00	$115.00	$115.00	$120.00			
SS1. SURVEY										
Abstracting and Ownership List (Assuming 11 properties)	**11**	4	6	4	8	110	4	**136**	**12.4**	**$17,090.00**
SS1. SURVEY Total Hours		4	6	4	8	110	4	**136**		
SS1. SURVEY Total Cost		$1,280.00	$1,260.00	$500.00	$920.00	$12,650.00	$480.00			**$17,090.00**

SPECIAL SERVICES DIRECT COSTS						Summary	
		Unit	**Unit Cost**	**Quantity**	**Totals**	SS1. SURVEY	$17,090.00
Mileage		EA	$ 0.70	42	$29.40	**Special Services Labor Costs**	**$17,090.00**
Deed Copies		PG	$ 2.00	275	$550.00	**Special Services Expenses Costs**	**$584.40**
Plat Copies		PG	$ 5.00	1	$5.00	**Special Services Total Costs**	**$17,674.40**
TOTAL SPECIAL SERVICES DIRECT COSTS					**$584.40**	**Lamb-Star Engineering, LLC - Total**	**$17,674.40**

CR 398
Prime Provider: BGE, Inc. **Sub-Consultant: Terracon Consultants, Inc.**
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	Senior Engineer	Project Engineer	Engineer-in-Training	Senior Engineering Tech	ARS Admin/Clerical	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$266.52	$226.79	$180.44	$119.69	$137.06	$81.88			
SS2. GEOTECHNICAL SERVICES										
A. Field Investigation										
Collection of Existing Data and Training Requirements		1		2				**3**		**$627.40**
Obtaining Permits				1	1			**2**		**$300.13**
Borehole Layout, Traffic Control Plan, Stake Borings and Utility Clearance				1	2	8		**11**		**$1,516.30**
Drilling Coordination and Logging				2		50		**52**		**$7,213.88**
Meetings/Communication with County, Airport, USACE and State								**0**		**$0.00**
B. Laboratory Investigation										
Review Samples, Field Logs & Assign Laboratory Testing				2	4			**6**		**$839.64**
Boring Logs Preparation				1	2		8	**11**		**$1,074.86**
Review of Wincore Logs		1		1	2			**4**		**$686.34**
Foundation Recommendations for Bridge		1	1	4	2			**8**		**$1,454.45**
LPILE Parameters for Bridge		0.5	1	2	2			**5.5**		**$960.31**
Global Stability Analysis for Bridge Abutments		1		4	8			**13**		**$1,945.80**
Choosing Alternative Wall Types @ South of Airport - Design Parameters								**0**		**$0.00**
MSE (or) Soil Nail (or) Drilled Shaft Wall (or) Other Wall Type Design Recommendations								**0**		**$0.00**
Drainage Requirements								**0**		**$0.00**
C. Geotechnical Report										
Pavement - PVR Calculations		0.5	2					**2.5**		**$586.84**
Pavement - Depth of Coverage Recommendations		0.5	2					**2.5**		**$586.84**
Pavement - Rigid Sections Recommendations		0.5	4					**4.5**		**$1,040.42**
Preparation of Draft Geotechnical Report		1	4	8	2			**15**		**$2,856.58**
Preparation of Final Geotechnical Report		1	4	4			1	**10**		**$1,977.32**
SS2. GEOTECHNICAL SERVICES Total Hours		8	18	32	25	58	9	**150**		
SS2. GEOTECHNICAL SERVICES Total Cost		$2,132.16	$4,082.22	$5,774.08	$2,992.25	$7,949.48	$736.92			**$23,667.11**

CR 398
Prime Provider: BGE, Inc. **Sub-Consultant: Terracon Consultants, Inc.**
Agreement No.
Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Project Manager	Senior Engineer	Project Engineer	Engineer-in-Training	Senior Engineering Tech	ARS Admin/Clerical	Total Labor Hours	Hours / Sheet	Total Labor Costs
		$266.52	$226.79	$180.44	$119.69	$137.06	$81.88			

SPECIAL SERVICES DIRECT EXPENSES					
		Unit	**Rate**	**Quantity**	**Totals**
Other Direct Expenses					
Mileage		mile	$0.70	550	$385.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Large Project (Includes labor, equipment and fuel)		day	$3,600.00	3	$10,800.00
Tree Clearing and Mulching at the Site		day	$4,000.00	0	$0.00
Unit Costs					
Standard Penetration Test (SPT)		LF	$36.00	12	$432.00
Unconfined Compressive Strength (Soil)		each	$72.00	9	$648.00
Unconfined Compressive Strength (Rock)		each	$84.00	9	$756.00
Soil Boring/Rock Coring with TCP (< 60 ft.)		LF	$43.00	165	$7,095.00
Soil Boring/Rock Coring with TCP (> 60 ft.)		LF	$48.00	40	$1,920.00
Core/drill operator/technician and coring equipment used to drill flexable and rigid pavment (2-man crew)		Trip	$450.00	5	$2,250.00
(a) 4-in. diameter cores		Inch	$9.00	0	$0.00
(b) 6-in. diameter cores		Inch	$9.00	50	$450.00
Borehole Grouting - Bentonite Chips		LF	$11.00	205	$2,255.00
Daily Rig Mobilization/Demob Charges		day	$180.00	3	$540.00
Particle Size Analysis		Each	$112.50	1	$112.50
Determining Moisture Content in Soil Materials		Each	$13.50	18	$243.00
Determining Liquid Limits of Soils		Each	$43.00	12	$516.00
Determining Plastic Limit of Soils		Each	$43.00	12	$516.00
Calculating the Plasticity Index of Soils		Each	$43.00	12	$516.00
Particle Size Analysis - Retained +40		Each	$78.00	16	$1,248.00
Consolidated Undrained (CU) Triaxial Compression Test for Undisturbed Soils Single Stage		Each	$940.00	3	$2,820.00
Organic Content		Each	$200.00	3	$600.00
Determining Sulfate Content in Soils - Colorimetric Method		Each	$90.00	3	$270.00
TOTAL BASIC DIRECT EXPENSES					**$34,372.50**

Summary	
SS2. GEOTECHNICAL SERVICES	$23,667.11
Special Services Labor Costs	**$23,667.11**
Special Services Expenses Costs	**$34,372.50**
Special Services Total Costs	**$58,039.61**
Terracon Consultants, Inc. - Total	**$58,039.61**

EXHIBIT C - Fee Schedule

Method of Payment: Lump Sum with exception of Incremental Services

CR 398

Prime Provider: BGE, Inc.

Sub-Consultant: Kimley Horn

Agreement No.

Project Limits: FM 546 to 0.5 mile east of FM 546

Task Description	No. of Sheets	Traffic PM	Quality Manager	Engineer (Project)	Engineer-In-Training	Admin/ Clerical		Total Labor Hours	Hours / Sheet	Total Labor Costs
		$350.00	$335.00	$250.00	$190.00	$150.00				
BS7. TRAFFIC ANALYSIS										
PROJECT MANAGEMENT & ADMINISTRATION										
Project Management and Coordination		0.5		5				**5.5**		**$1,425.00**
Progress Reports and Invoices (assuming 2 invoices)		0.5				2		**2.5**		**$475.00**
Meetings (assuming 2 meetings)		2		5	5			**12**		**$2,900.00**
TRAFFIC PROJECTIONS										
Develop Hourly Turning Movement Traffic Projections Methodolgy Memo		1	1	5	17			**24**		**$5,165.00**
Develop Develop AM, PM and ADT Traffic Projections for FM 546 at CR 398 for Opening Year (2030), Design Year (2050), and Pavement Design Year (2060)		1	1	3	20			**25**		**$5,235.00**
Develop Truck Percentage on CR 398 for Pavement Design Year (2060)		1	1	5	13			**20**		**$4,405.00**
Develop Hourly Turning Movement Traffic Projections for FM 546 and CR 398, for Opening Year (2030)		1	2	5	20			**28**		**$6,070.00**
TRAFFIC ANALYSIS										
Assesment of Turn Bay Needs at FM 546 and CR 398 for Opening Year (2030), AM and PM peak		1	1	3	10			**15**		**$3,335.00**
BS7. TRAFFIC ANALYSIS Total Hours		8	6	31	85	2		**132**		
BS7. TRAFFIC ANALYSIS Total Cost		$2,800.00	$2,010.00	$7,750.00	$16,150.00	$300.00				**$29,010.00**

INCREMENTAL SERVICES DIRECT EXPENSES					
		Unit	**Rate**	**Quantity**	**Totals**
24-hour Turning Movement Counts at FM 546 and CR 398		EA	$1,500.00	1	$1,500.00
Site Visit Mileage		MI	$0.58	258.62	$150.00
				TOTAL BASIC DIRECT EXPENSES	**$1,650.00**

Summary	
IS1. SUBSURFACE UTILITY ENGINEERING (SUE)	$29,010.00
Incremental Services Labor Costs	**$29,010.00**
Incremental Services Expenses Costs	**$1,650.00**
Incremental Services Total Costs	**$30,660.00**
Kimley Horn - Total	**$30,660.00**

Collin County Construction Services CR 398	Project Manager	Construction Manager	Sr SCHEDULER	Senior Structural Engineer	SURVEYING	ADMIN/ CLERICAL	PROJECT ENGINEER	SENIOR DESIGNER	EIT	FIELD ENGINEER	CONSTRUCTION SPERIINTENDENT	CONSTRUCTION INSPECTOR III/IV	UTILITY COORDINATION	INSPECTOR II	RECORDS KEEPERS	Totals
Rate	**$ 327.99**	**$ 224.69**	**$ 197.10**	**$ 299.77**	**$ 215.00**	**$ 102.50**	**$ 210.12**	**$ 286.99**	**$ 136.66**	**$ 195.00**	**$ 168.69**	**$ 147.22**	**$ 185.25**	**$ 107.35**	**$ 131.11**	
BASIC SERVICES																
CONSTRUCTION ADMINISTRATION																
Task A. Construction Administration																
a) Review Project records	8					16									8	32
b) Review and approve shop drawings: Bridge/Retaining Wall				48												48
c) Evaluate and response to RFIs	16						16									32
d) Attend Monthly construction meetings	24			4											16	44
e) Review monthly construction pay requests	12															12
f) Prepare change order	12			4												16
g) Prepare Project Record Drawings	8															8
Monthly progress reports and invoices	8					16									8	32
Monthly meeting with the owner	8															8
Recordkeeping						24										24
Review Construction Invoice	8														12	20
Prepare Final Records	8			4		12									12	36
Task A Total Hours	**112**			**60**		**68**	**16**								**56**	**312**
Task A Total Labor Costs	**$ 36,734.88**	**$ -**	**$ -**	**$ 17,986.20**	**$ -**	**$ 6,970.00**	**$ 3,361.92**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 7,342.16**	**$ 72,395.16**
Task B. Utility Coordination																
a) Review utility relocation plans	8												24			32
b) Oversee utility relocations												16				16
c) Update project record drawings & contractor coordination													24			24
d) Field survey control & right-of-way staking	8				8											16
e) Field survey of relocated underground utilities																
Task B Total Hours	**16**				**8**							**16**	**48**			**88**
Task B Total Labor Costs	**$ 5,247.84**	**$ -**	**$ -**	**$ -**	**$ 1,720.00**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,355.52**	**$ 8,892.00**	**$ -**	**$ -**	**$ 18,215.36**
Task C. Stakeholder Coordination																
a) Coordination with TxDOT	4											4				8
b) City of Lowry Crossing & Princeton	4											4				8
Task C Total Hours	**8**											**8**				**16**
Task C Total Labor Costs	**$ 2,623.92**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,177.76**	**$ -**	**$ -**	**$ -**	**$ 3,801.68**
CONSTRUCTION ADMINISTRATION TOTAL LABOR COST	**$ 44,606.64**	**$ -**	**$ -**	**$ 17,986.20**	**$ 1,720.00**	**$ 6,970.00**	**$ 3,361.92**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,533.28**	**$ 8,892.00**	**$ -**	**$ 7,342.16**	**$ 94,412.20**
CONSTRUCTION INSPECTION																
Task A. Construction Inspection																
a) Inspection																
1. & 2. Structural Concrete and Bridge Components	16				32							600		120		768
3. Retaining wall																
4. Concrete Paving									60			400		120		580
5. Record Keeper												36				36
6. RFI, shop drawings, correspondence and change order							16		16			24				56
b) General inspection												400		96		496
c) Monthly summary reports						8			16			24			8	56
1. Review construction schedule	4		32										8			44
Assisting in schedule disputes & and claims	4		8									16				28
2. Review weekly quantities						8						16				24
d) Coordination for TDLR registration for TAS Review												8				8
e) Final Acceptance																
1. Prepare and maintain punch list									8			16				24
2. Preform final inspection	8											16				24
3. Verify Cleanup												16				16
4. Verify Removal of TCP Devices												8				8
5. Verify Final Quantities	8					8			12			16			8	52
6. Document As-built Conditions									12			8				20
Task A Total Hours	**40**		**40**		**32**	**24**	**16**		**124**			**1604**	**8**	**336**	**16**	**2240**
Task A Total Labor Costs	**$ 13,119.60**	**$ -**	**$ 7,884.00**	**$ -**	**$ 6,880.00**	**$ 2,460.00**	**$ 3,361.92**	**$ -**	**$ 16,945.84**	**$ -**	**$ -**	**$ 236,140.88**	**$ 1,482.00**	**$ 36,069.60**	**$ 2,097.76**	**$ 326,441.60**
CONSTRUCTION INSPECTION TOTAL LABOR COST	**$ 13,119.60**	**$ -**	**$ 7,884.00**	**$ -**	**$ 6,880.00**	**$ 2,460.00**	**$ 3,361.92**	**$ -**	**$ 16,945.84**	**$ -**	**$ -**	**$ 236,140.88**	**$ 1,482.00**	**$ 36,069.60**	**$ 2,097.76**	**$ 326,441.60**
Total Hours (Basic Services)	**176**		**40**	**60**	**40**	**92**	**32**		**124**			**1628**	**56**	**336**	**72**	**2,656**
Total Labor Costs (Basic Services)	**$ 57,726.24**	**$ -**	**$ 7,884.00**	**$ 17,986.20**	**$ 8,600.00**	**$ 9,430.00**	**$ 6,723.84**	**$ -**	**$ 16,945.84**	**$ -**	**$ -**	**$ 239,674.16**	**$ 10,374.00**	**$ 36,069.60**	**$ 9,439.92**	**$ 420,853.80**

Reimbursable Direct Expense	Unit	Quantity	Rate	Total
Mileage	Mile	3,000	$ 0.65	$ 1,950.00
Construction Truck (includes operation, and maintenance costs; insurance costs will not be reimbursed)	Truck Days	213	$ 80.00	$ 17,040.00
Construction Truck (includes operation, and maintenance costs; insurance costs will not be reimbursed)	Truck Month	-	$ 1,600.00	$ -
Computers/Printer	Computer Month	14	$ 100.00	$ 1,400.00
TDLR registration and TAS Review	Each	1	$ 1,200.00	$ 1,200.00
Total Reimbursable Direct Expense				$ 21,590.00
Total BGE, Inc. Fee				**$ 442,443.80**

Jobsite Trailer, Electricity, Internet, Sewer, Fenced Yard w/ security lighting provided by Contractor