

STATE OF TEXAS §
 §
COUNTY OF FORT BEND §

**AGREEMENT FOR PROFESSIONAL CONSULTING ENGINEERING SERVICES FOR
PEEK ROAD BRIDGE REPAIR DESIGN
RFQ 18-081**

THIS AGREEMENT is made and entered into by and between Fort Bend County, (hereinafter "County"), a body corporate and politic under the laws of the State of Texas, and CivilTech Engineering, Inc., (hereinafter "Consultant"), a company authorized to conduct business in the State of Texas.

WITNESSETH

WHEREAS, County desires that Consultant provide professional engineering services for the design of a project that involves improvements and repairs to the channel and bridge embankment slopes at the northbound and southbound bridges of Peek Road bridges crossing over Buffalo Bayou, and will also include approximately 500-ft. to 1,000-ft. of channel repair upstream and downstream of the bridges (hereinafter "Services") pursuant to RFQ 18-081; and

WHEREAS, County has determined Consultant is the most highly qualified provider of the desired Services on the basis of demonstrated competence and qualifications, and County and Consultant have negotiated to reach a fair and reasonable amount of compensation for the provision of such Services, as required under Chapter 2254 of the Texas Government Code; and

WHEREAS, Consultant represents that it is qualified and desires to perform such services.

NOW, THEREFORE, in consideration of the mutual covenants and conditions set forth below, the parties agree as follows:

AGREEMENT

Section 1. Scope of Services

Consultant shall render the professional engineering services as described in Consultant's Scope of Work for Professional Engineering and Surveying Services attached hereto as Attachment "A", and incorporated herein for all purposes.

Section 2. Personnel

2.1 Consultant represents that it presently has, or is able to obtain, adequate qualified personnel in its employment for the timely performance of the Scope of Services required under this Agreement and that Consultant shall furnish and maintain, at its own expense, adequate and sufficient personnel, in the opinion of County, to perform the Scope of Services when and as required and without delays.

2.2 All employees of Consultant shall have such knowledge and experience as will enable them to perform the duties assigned to them. Any employee of Consultant who, in the opinion of County, is incompetent or by his conduct becomes detrimental to the project shall, upon request of County, immediately be removed from association with the project.

Section 3. Compensation and Payment

3.1 Consultant's fees shall be calculated at the rates set forth in the attached Attachment "A". The Maximum Compensation for the performance of Services within the Scope of Services described in Attachment "A" is two hundred sixty-nine thousand seven hundred fifteen dollars and no/100 (\$269,715.00) as set forth in Attachment "A". In no case shall the amount paid by County under this Agreement exceed the Maximum Compensation without a written agreement executed by the parties.

3.2 All performance of the Scope of Services by Consultant including any changes in the Scope of Services and revision of work satisfactorily performed will be performed only when approved in advance and authorized by County.

3.3 County will pay Consultant based on the following procedures: Upon completion of the tasks identified in the Scope of Services, Consultant shall submit to County staff person designated by the County Engineer, one (1) electronic (pdf) copy of the invoice showing the amounts due for services performed in a form acceptable to County. County shall review such invoices and approve them within 30 calendar days with such modifications as are consistent with this Agreement and forward same to the Auditor for processing. County shall pay each such approved invoice within thirty (30) calendar days. County reserves the right to withhold payment pending verification of satisfactory work performed.

Section 4. Limit of Appropriation

4.1 Consultant clearly understands and agrees, such understanding and agreement being of the absolute essence of this Agreement, that County shall have available the total maximum sum of two hundred sixty-nine thousand seven hundred fifteen dollars and no/100 (\$269,715.00), specifically allocated to fully discharge any and all liabilities County may incur.

4.2 Consultant does further understand and agree, said understanding and agreement also being of the absolute essence of this Agreement, that the total maximum compensation that Consultant may become entitled to and the total maximum sum that County may become liable to pay to Consultant shall not under any conditions, circumstances, or interpretations thereof exceed two hundred sixty-nine thousand seven hundred fifteen dollars and no/100 (\$269,715.00).

Section 5. Time of Performance

Time for performance of the Scope of Services under this Agreement shall begin with receipt of the Notice to Proceed and end no later than seven (7) months thereafter, inclusive of the final design and bid phase services. Consultant shall complete the tasks described in the

Scope of Services, within this time or within such additional time as may be extended by the County.

Section 6. Modifications and Waivers

6.1 The parties may not amend or waive this Agreement, except by a written agreement executed by both parties.

6.2 No failure or delay in exercising any right or remedy or requiring the satisfaction of any condition under this Agreement, and no course of dealing between the parties, operates as a waiver or estoppel of any right, remedy, or condition.

6.3 The rights and remedies of the parties set forth in this Agreement are not exclusive of, but are cumulative to, any rights or remedies now or subsequently existing at law, in equity, or by statute.

Section 7. Termination

7.1 Termination for Convenience – County may terminate this Agreement at any time upon forty-eight (48) hours written notice.

7.2 Termination for Default

7.2.1 County may terminate the whole or any part of this Agreement for cause in the following circumstances:

7.2.1.1 If Consultant fails to perform services within the time specified in the Scope of Services or any extension thereof granted by the County in writing;

7.2.1.2 If Consultant materially breaches any of the covenants or terms and conditions set forth in this Agreement or fails to perform any of the other provisions of this Agreement or so fails to make progress as to endanger performance of this Agreement in accordance with its terms, and in any of these circumstances does not cure such breach or failure to County's reasonable satisfaction within a period of ten (10) calendar days after receipt of notice from County specifying such breach or failure.

7.2.2 If, after termination, it is determined for any reason whatsoever that Consultant was not in default, or that the default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the County in accordance with Section 7.1 above.

7.3 Upon termination of this Agreement, County shall compensate Consultant in accordance with Section 3, above, for those services which were provided under this Agreement prior to its termination and which have not been previously invoiced to County. Consultant's final invoice for said services will be presented to and paid by County in the same manner set forth in Section 3 above.

7.4 If County terminates this Agreement as provided in this Section, no fees of any type, other than fees due and payable at the Termination Date, shall thereafter be paid to Consultant.

Section 8. Ownership and Reuse of Documents

All documents, data, reports, research, graphic presentation materials, etc., developed by Consultant as a part of its work under this Agreement, shall become the property of County upon completion of this Agreement, or in the event of termination or cancellation thereof, at the time of payment under Section 3 for work performed. Consultant shall promptly furnish all such data and material to County on request.

Section 9. Inspection of Books and Records

Consultant will permit County, or any duly authorized agent of County, to inspect and examine the books and records of Consultant for the purpose of verifying the amount of work performed under the Scope of Services. County's right to inspect survives the termination of this Agreement for a period of four years.

Section 10. Insurance

10.1 Prior to commencement of the Services, Consultant shall furnish County with properly executed certificates of insurance which shall evidence all insurance required and provide that such insurance shall not be canceled, except on 30 days' prior written notice to County. Consultant shall provide certified copies of insurance endorsements and/or policies if requested by County. Consultant shall maintain such insurance coverage from the time Services commence until Services are completed and provide replacement certificates, policies and/or endorsements for any such insurance expiring prior to completion of Services. Consultant shall obtain such insurance written on an Occurrence form (or a Claims Made form for Professional Liability insurance) from such companies having Best's rating of A/VII or better, licensed or approved to transact business in the State of Texas, and shall obtain such insurance of the following types and minimum limits:

10.1.1 Workers' Compensation insurance. Substitutes to genuine Workers' Compensation Insurance will not be allowed.

10.1.2 Employers' Liability insurance with limits of not less than \$1,000,000 per injury by accident, \$1,000,000 per injury by disease, and \$1,000,000 per bodily injury by disease.

10.1.3 Commercial general liability insurance with a limit of not less than \$1,000,000 each occurrence and \$2,000,000 in the annual aggregate. Policy shall cover liability for bodily injury, personal injury, and property damage and products/completed operations arising out of the business operations of the policyholder.

10.1.4 Business Automobile Liability insurance with a combined Bodily Injury/Property Damage limit of not less than \$1,000,000 each accident. The policy shall cover liability arising from the operation of licensed vehicles by policyholder.

10.1.5 Professional Liability insurance may be made on a Claims Made form with limits not less than \$1,000,000.

10.2 County and the members of Commissioners Court shall be named as additional insured to all required coverage except for Workers' Compensation and Professional Liability. All Liability policies including Workers' Compensation written on behalf of Consultant shall contain a waiver of subrogation in favor of County and members of Commissioners Court.

10.3 If required coverage is written on a claims-made basis, Consultant warrants that any retroactive date applicable to coverage under the policy precedes the effective date of the contract; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning from the time that work under the Agreement is completed.

Section 11. Indemnity

CONSULTANT SHALL INDEMNIFY AND HOLD HARMLESS COUNTY AGAINST LOSSES, LIABILITIES, CLAIMS, AND CAUSES OF ACTION, ARISING FROM ACTIVITIES OF CONSULTANT, ITS AGENTS, SERVANTS OR EMPLOYEES, PERFORMED UNDER THIS AGREEMENT TO THE EXTENT THAT THE DAMAGE IS CAUSED BY OR RESULTS FROM AN ACT OF NEGLIGENCE, INTENTIONAL TORT, INTELLECTUAL PROPERTY INFRINGEMENT, OR FAILURE TO PAY A SUBCONTRACTOR OR SUPPLIER COMMITTED BY THE CONSULTANT OR ANY OF CONSULTANT'S AGENTS, SERVANTS, EMPLOYEES, CONSULTANTS UNDER CONTRACT, OR ANOTHER ENTITY OVER WHICH THE CONSULTANT EXERCISES CONTROL. CONSULTANT AGREES TO REIMBURSE COUNTY FOR REASONABLE ATTORNEY'S FEES IN PROPORTION TO CONSULTANT'S LIABILITY.

11.1 Consultant shall timely report all such matters to County and shall, upon receipt of any such claim, demand, suit, action, proceeding, lien or judgement, not later than the fifteenth day of each month; provide County with a written report on each such matter, setting forth the status of each matter, the schedule or planned proceedings with respect to each matter and the cooperation or assistance, if any, of County required by Consultant in the defense of each matter.

11.2 Consultant's duty to defend, indemnify and hold County harmless shall not abate or end by reason of the expiration or termination of any contract unless otherwise agreed by County in writing. The provisions of this section shall survive the termination of the contract and shall remain in full force and effect with respect to all such matter no matter when they arise.

11.3 In the event any dispute between the parties as to whether a claim, demand, suit, action, proceeding, lien or judgment appears to have been caused by or appears to have arisen out of or in connection with acts or omissions of Consultant, Consultant shall never-the-less fully defend such claim, demand, suit, action, proceeding, lien or judgment until and unless there is a determination by a court of competent jurisdiction that the acts and omissions of Consultant are not at issue in the matter.

11.4 The provision by Consultant of insurance shall not limit the liability of Consultant under an agreement.

11.5 Consultant shall cause all trade contractors and any other contractor who may have a contract to perform construction or installation work in the area where work will be performed under this request, to agree to indemnify County and to hold it harmless from all claims for bodily injury and property damage that may arise from Consultant's operations. Such provisions shall be in form satisfactory to County.

11.6 Loss Deduction Clause – County shall be exempt from, and in no way liable for, any sums of money which may represent a deductible in any insurance policy. The payment of deductibles shall be the sole responsibility of Consultant and/or trade contractor providing such insurance.

Section 12. Confidential and Proprietary Information

12.1 Consultant acknowledges that it and its employees or agents may, in the course of performing their responsibilities under this Agreement, be exposed to or acquire information that is confidential to County. Any and all information of any form obtained by Consultant or its employees or agents from County in the performance of this Agreement shall be deemed to be confidential information of County ("Confidential Information"). Any reports or other documents or items (including software) that result from the use of the Confidential Information by Consultant shall be treated with respect to confidentiality in the same manner as the Confidential Information. Confidential Information shall be deemed not to include information that (a) is or becomes (other than by disclosure by Consultant) publicly known or is contained in a publicly available document; (b) is rightfully in Consultant's possession without the obligation of nondisclosure prior to the time of its disclosure under this Agreement; or (c) is independently developed by employees or agents of Consultant who can be shown to have had no access to the Confidential Information.

12.2 Consultant agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Consultant uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the provision of Services to County hereunder, and to advise each of its employees and agents of their obligations to keep Confidential Information confidential. Consultant shall use its best efforts to assist County in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limitation of the foregoing, Consultant shall advise County immediately in the event Consultant learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Agreement and Consultant will at its expense cooperate with County in seeking injunctive or other equitable relief in the name of County or Consultant against any such person. Consultant agrees that, except as directed by County, Consultant will not at any time during or after the term of this Agreement disclose, directly or indirectly, any Confidential Information to any person, and that upon termination of this Agreement or at County's request, Consultant will promptly turn over to County all documents, papers, and other matter in Consultant's possession which embody Confidential Information.

12.3 Consultant acknowledges that a breach of this Section, including disclosure of any Confidential Information, or disclosure of other information that, at law or in equity, ought to remain confidential, will give rise to irreparable injury to County that is inadequately compensable in damages. Accordingly, County may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies that may be available. Consultant acknowledges and agrees that the covenants contained herein are necessary for the protection of the legitimate business interest of County and are reasonable in scope and content.

12.4 Consultant in providing all services hereunder agrees to abide by the provisions of any applicable Federal or State Data Privacy Act.

12.5 Consultant expressly acknowledges that County is subject to the Texas Public Information Act, TEX. GOV'T CODE ANN. §§ 552.001 *et seq.*, as amended, and notwithstanding any provision in the Agreement to the contrary, County will make any information related to the Agreement, or otherwise, available to third parties in accordance with the Texas Public Information Act. Any proprietary or confidential information marked as such provided to County by Consultant shall not be disclosed to any third party, except as directed by the Texas Attorney General in response to a request for such under the Texas Public Information Act, which provides for notice to the owner of such marked information and the opportunity for the owner of such information to notify the Attorney General of the reasons why such information should not be disclosed.

Section 13. Independent Consultant

13.1 In the performance of work or services hereunder, Consultant shall be deemed an independent Consultant, and any of its agents, employees, officers, or volunteers performing work required hereunder shall be deemed solely as employees of Consultant or, where permitted, of its subcontractor.

13.2 Consultant and its agents, employees, officers, or volunteers shall not, by performing work pursuant to this Agreement, be deemed to be employees, agents, or servants of County and shall not be entitled to any of the privileges or benefits of County employment.

Section 14. Notices

14.1 Each party giving any notice or making any request, demand, or other communication (each, a "Notice") pursuant to this Agreement shall do so in writing and shall use one of the following methods of delivery, each of which, for purposes of this Agreement, is a writing: personal delivery, registered or certified mail (in each case, return receipt requested and postage prepaid), or nationally recognized overnight courier (with all fees prepaid).

14.2 Each party giving a Notice shall address the Notice to the receiving party at the address listed below or to another address designated by a party in a Notice pursuant to this Section:

County: Fort Bend County Engineering Department
Attn: County Engineer
301 Jackson Street
Richmond, Texas 77469

With a copy to: Fort Bend County
Attn: County Judge
401 Jackson Street, 1st Floor
Richmond, Texas 77469

Consultant: CivilTech Engineering, Inc.
Attn: Paul Baxter, PE, Project Manager
11821 Telge Road
Cypress, Texas 77429
pbaxter@civiltecheng.com

14.3 A Notice is effective only if the party giving or making the Notice has complied with subsections 14.1 and 14.2 and if the addressee has received the Notice. A Notice is deemed received as follows:

14.3.1 If the Notice is delivered in person, or sent by registered or certified mail or a nationally recognized overnight courier, upon receipt as indicated by the date on the signed receipt.

14.3.2 If the addressee rejects or otherwise refuses to accept the Notice, or if the Notice cannot be delivered because of a change in address for which no Notice was given, then upon the rejection, refusal, or inability to deliver.

Section 15. Compliance with Laws

Consultant shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any matter affecting the performance of this Agreement, including, without limitation, Worker's Compensation laws, minimum and maximum salary and wage statutes and regulations, licensing laws and regulations. When required by County, Consultant shall furnish County with certification of compliance with said laws, statutes, ordinances, rules, regulations, orders, and decrees above specified.

Section 16. Standard of Care

Consultant represents shall perform the Services to be provided under this Agreement with the professional skill and care ordinarily provided by competent engineers practicing under the same or similar circumstances and professional license. Further, Consultant shall perform the Services as expeditiously as is prudent considering the ordinary professional skill and care of a competent engineer.

Section 17. Assignment

17.1 Neither party may assign any of its rights under this Agreement, except with the prior written consent of the other party. That party shall not unreasonably withhold its consent. All assignments of rights are prohibited under this subsection, whether they are voluntarily or involuntarily, by merger, consolidation, dissolution, operation of law, or any other manner.

17.2 Neither party may delegate any performance under this Agreement.

17.3 Any purported assignment of rights or delegation of performance in violation of this Section is void.

Section 18. Applicable Law

The laws of the State of Texas govern all disputes arising out of or relating to this Agreement. The parties hereto acknowledge that venue is proper in Fort Bend County, Texas, for all legal actions or proceedings arising out of or relating to this Agreement and waive the right to sue or be sued elsewhere. Nothing in the Agreement shall be construed to waive the County's sovereign immunity.

Section 19. Successors and Assigns

County and Consultant bind themselves and their successors, executors, administrators and assigns to the other party of this Agreement and to the successors, executors, administrators and assigns of the other party, in respect to all covenants of this Agreement.

Section 20. Third Party Beneficiaries

This Agreement does not confer any enforceable rights or remedies upon any person other than the parties.

Section 21. Severability

If any provision of this Agreement is determined to be invalid, illegal, or unenforceable, the remaining provisions remain in full force, if the essential terms and conditions of this Agreement for each party remain valid, binding, and enforceable.

Section 22. Publicity

Contact with citizens of Fort Bend County, media outlets, or governmental agencies shall be the sole responsibility of County. Under no circumstances whatsoever, shall Consultant release any material or information developed or received in the performance of the Services hereunder without the express written permission of County, except where required to do so by law.

Section 23. Captions

The section captions used in this Agreement are for convenience of reference only and do not affect the interpretation or construction of this Agreement.

Section 24. Conflict

In the event there is a conflict between this Agreement and the attached exhibits, this Agreement controls.

Section 25. Certain State Law Requirements for Contracts

25.1 Agreement to Not Boycott Israel Chapter 2270 Texas Government Code: By signature below, Consultant verifies Consultant does not boycott Israel and will not boycott Israel during the term of this Agreement.

25.2 Texas Government Code Section 2251.152 Acknowledgment: By signature below, Consultant represents pursuant to Section 2252.152 of the Texas Government Code, that Consultant is not listed on the website of the Comptroller of the State of Texas concerning the listing of companies that are identified under Section 806.051, Section 807.051 or Section 2253.153.

Section 26. Certain Federal Law Requirements for Contracts

26.1 Debarment: By signature below, Consultant hereby certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract by any governmental department or agency.

26.2 Small, Minority Firms, Women's Business Enterprises and Labor Surplus Area Firms: Consultant will take all necessary affirmative steps to assure that qualified small, minority firms, women's business enterprises, and labor surplus area firms are used when possible by (i) Placing qualified small and minority businesses and women's business enterprises on solicitation lists; (ii) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources; (iii) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises; (iv) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises; (v) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce; and (vi) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (i) through (v) of this section.

26.3 Contract Work Hours and Safety Standards: Construction must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous.

26.4 Clean Air Act and Federal Water Pollution Control Act: Consultant agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387), and will report violations to FEMA and the Regional Office of the Environmental Protection Agency (EPA).

26.4 Energy Policy and Conservation Act: Consultant agrees to comply with Energy Policy and Conservation Act (42 U.S.C. § 6201).

26.5 Anti-Lobbying: Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended). Consultants who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

{EXECUTION PAGE FOLLOWS}

{REMAINDER OF PAGE INTENTIONALLY LEFT BLANK}

IN WITNESS WHEREOF, the parties hereto have signed or have caused their respective names to be signed to multiple counterparts to be effective on the date signed by the last party hereto.

FORT BEND COUNTY

CIVILTECH ENGINEERING, INC.

Robert E. Hebert, County Judge

Melvin G. Spinks
Authorized Agent - Signature

Date: _____

MELVIN G. SPINKS
Authorized Agent- Printed Name

ATTEST:

Title: PRESIDENT

Laura Richard, County Clerk

Date: 9-17-2018

APPROVED:

Richard W. Stolleis, PE, Fort Bend County Engineer

APPROVED AS TO LEGAL FORM:

ROY L. CORDES, JR.
FORT BEND COUNTY ATTORNEY

LaNetra S. Lary, Assistant County Attorney

AUDITOR'S CERTIFICATE

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

Robert Ed Sturdivant, County Auditor

I:\AGREEMENTS\2018 Agreements\Engineering\Peek Road Bridge Repair\Peek Road Repair Agreement.CivilTech.docx.(LSL 9/17/2018)

ATTACHMENT A

CivilTech Engineering, Inc.

*Civil Engineering
Water Resources
Transportation
Structures
Economic Analysis
GIS*

SCOPE OF SERVICES Peek Road Emergency Bridge Repairs at Buffalo Bayou Ft. Bend County, Precinct 3

CivilTech Engineering, Inc., (CivilTech) as the lead Design Consultant, will be responsible for the overall project management, technical accuracy and design schedule. Mr. Paul M. Baxter, PE will serve as the Project Manager and will be County's and/or its Project Manager's primary contact through completion of the identified scope of services.

SCOPE OF WORK

Peek Road Emergency Bridge Repairs project will include analyzing and preparing plans for the repair of the damage to channel and bridge embankment slopes at the northbound and southbound bridges of Peek Road over Buffalo Bayou caused by floodwaters from Hurricane Harvey. The project is located in northern Ft. Bend County, Precinct 3, approximately 1 mile south of Westheimer Parkway, and approximately 0.30 miles east of the Grand Parkway (SH 99). The improvements and repairs are generally located at the Peek Road bridges crossing over Buffalo Bayou but will also include approximately 500-ft. to 1,000-ft. of channel repair upstream and downstream of the bridges. The proposed project will include the following:

- Survey of the existing channel and bridges, identifying the limits of the damage to the embankment slopes and erosion of Buffalo Bayou
- Geotechnical soil investigation to identify the existing soils, identify soil parameters for scour analysis, and perform a slope stability analysis.
- FEAM NEPA Documentation - Environmental Assessment (EA) and clean Water Act Compliance and Permitting
- Hydraulic Impact Analysis and report documenting the hydraulic analysis to ensure no rise impacts due to proposed repair and improvements.
- PS&E production for the proposed repair and improvements.
- Bidding Phase Services to assist the County in bidding the proposed repairs and improvements.
- Construction Phase Services to assist the County during the construction of the proposed repairs and improvements.

A Category 6, Condition II Topographic field survey will be performed to identify the existing right-of-way, limits of embankment failure, and channel erosion to support the design of the proposed repairs and improvements. The topographic survey will include survey of the existing bridge structures including the columns, beam low chords, top of roadway, and top of rails. It will also include the limits of the embankment failures at the bridges and the limits of channel erosion upstream and downstream

of Peek Road. Soil borings performed for the project will be located and identified on the survey maps with horizontal and vertical locations/information. All necessary rights of entry (ROE) will be obtained from the private landowners using request letters that are approved by the County and/or its Project Manager.

A geotechnical soils investigation will be performed in accordance with the HCED "Guidelines for Consultants Performing Geotechnical Investigations". The soils investigation will include a total of four (4) soil borings; one at the upstream and downstream end of the Peek Road crossing, and an additional boring approximately 500-ft. upstream and downstream of the crossing. All necessary rights of entry (ROE) will be coordinated with the Surveyor. The findings will be summarized and provided in a signed and sealed Geotechnical Engineering report.

Federal Emergency Management Agency (FEMA) involvement is anticipated, requiring compliance with the National Environmental Policy Act (NEPA) regulations in accordance with Title 44, Part 10 of the Code of Federal (CFR) regulations. An Environmental Assessment and Waters of the US Jurisdictional Assessment will be performed per these requirements.

A Hydraulic Impact Analysis will be performed per the requirements of the Ft. Bend County Drainage District criteria for the proposed project. The hydraulic impact analysis will present the existing site conditions, drainage patterns, existing runoff and existing drainage infrastructure; determine the impacts associated with the proposed repairs or improvements; and identify and quantify mitigation measures. A scour analysis to identify the potential contraction scour and pier scour will also be performed and included in the hydraulic analysis. Design plans or as-built plans of the existing bridge structures are not available, and the depth of the existing foundations is unknown. Therefore, the scour analysis will not determine if the scour at the existing bridge foundations have reached critical depths. The findings will be summarized and provided in a signed and hydraulic analysis report.

The findings of the survey, geotechnical investigations, environmental assessment, hydraulic impact analysis, and proposed repair and improvements will be summarized in a Preliminary Engineering Report (PER) to be submitted to the County and/or its Project Manager for review and approval. The PER will include sufficient information to identify the following:

- Proposed repairs and/or improvements
- Estimated Probable Construction Costs
- Estimated Probable Construction Time
- Preliminary Construction Plans (Existing Features w/Proposed Plan View)

BASIC PROFESSIONAL SERVICES

The Engineer shall render the following professional services in connection with the Project:

I. PRELIMINARY DESIGN SERVICES

All Preliminary Design Services shall be paid for in a Single Lump Sum. Upon receiving written authorization to proceed with the Preliminary Design Services, the Design Consultant shall:

- a. Attend meetings with the County and/or its Project Manager as required, establishing the design parameters of the Project. These will include, but no limited to:
 - Preliminary Design Kickoff Meeting
 - Design Options Meeting
 - Technical Review Committee Presentation
- b. Participate in progress meetings with County and/or its Project Manager.
- c. Perform Preliminary Engineering Investigations for the Project to include:
 - Survey Data including existing right-of-way
 - Geotechnical Investigation
 - Environmental Assessment
 - Drainage Hydraulic Impact Study including Scour Analysis
- d. The Preliminary Design shall include:
 - Proposed Repair and Improvements
 - Preliminary Plans
 - Probably Construction Costs
 - Estimated Construction Timeline
- e. Prepare a PowerPoint Presentation and attend a Technical Review Committee Meeting County and/or its Project Manager, presenting a summary of the information and findings from the preliminary design.
- f. The Preliminary Engineering Report shall be prepared in sufficient detail so as to clearly indicate recommended repairs and improvements and any anticipated conflicts or design issues. The report shall address any comments from the Technical Review Committee. The report shall also present probable cost associated with the recommended improvements.

II. FINAL DESIGN SERVICES

All Final Design Services shall be paid for in a Single Lump Sum. Upon receiving written authorization to proceed with the Final Design Phase Services, the Design Consultant shall:

- a. Attend coordination meetings with the County and/or its Project Manager as required. These will include, but not limited to:
 - Design Phase Kickoff Meeting
 - Monthly Coordination Meetings (as needed)
- b. Prepare final designs, drawings and specifications for the Project. Drawings shall be submitted for review at the following Milestones:
 - 70% Milestone Submittal: Preliminary plans to include:
 - Cover sheet (Fort Bend County name and seal, project name with limits, vicinity and location maps, names of County Judge and Commissioners, signature line for County Engineer, design firm name and registration number)
 - Typical channel cross sections (not-to-scale proposed sections with station limits for each section; show right-of-way width, applicable dimensions of channel repairs)
 - Overall project layout
 - Survey control map
 - Plan and profile sheets (1"=20' plan scale but printed half-size for a 1"=40' scale; all existing and proposed facilities correctly shown in plan and profile)
 - Storm Water Pollution Prevention Plan (drawings and text; drawings may consist of a layout and details)
 - Specification table of contents
 - Bid form with estimated unit and total costs (spreadsheet based)
 - Deliverables:
 - Three (3) Hard Copies on 11 x 17 Sheets
 - Adobe PDF Electronic Copy
 - 95% Milestone Submittal: Complete drawings with interim seal to include all information from the 70% Milestone Submittal in addition to the following:
 - General Notes Sheet
 - Verify earthwork quantities with cross sections at 100-foot intervals
 - Standard construction details
 - Project manual (bid form, specification table of contents, any special

- specifications or conditions; contract documents excluded)
- Responses to 70 percent comments
- Deliverables:
 - Three (3) Hard Copies on 11 x 17 Sheets
 - Adobe PDF Electronic Copy
- 100% Milestone Submittal: Final signed and sealed drawings, specifications, and estimate.
 - Deliverables:
 - One (1) Final Set of Drawings
 - Adobe PDF Electronic Copy

III. BID PHASE SERVICES

All Bid Phase Services shall be paid for in a Single Lump Sum. Upon receiving written authorization to proceed with the Bid Phase Services, the Design Consultant shall:

- a. Upon completion of Final Design Services, the County will determine an advertisement and bid opening schedule. All administrative project manual documents (cover page, Notice to Bidders, etc.) will be prepared by the County and provided to the Design Consultant in PDF format. The Design Consultant will prepare a single project manual file in PDF format, consisting of:
 - Administrative documents
 - The bid form (prepared by the Design Consultant)
 - A sealed specification table of contents
 - Applicable specifications and documents
- b. The Design Consultant will prepare a single file in PDF format for the entire drawing set. Except for the cover sheet, which contains approval signature(s), all drawings may be printed directly to Adobe Acrobat format with electronic seal and signature.
- c. The Design Consultant will prepare 27 compact discs, each with one project manual file and one drawing file. Of these, 25 compact discs will be delivered to the County Purchasing Agent for advertising, and two discs will be provided to the Project Manager. Printed documents are not required.
- d. The Design Consultant will attend a pre-bid meeting at the County Purchasing Office. It is not necessary to prepare for the meeting, other than to be able to briefly describe the project.

- e. The Purchasing Agent will forward bidder questions to the Design Consultant. Answers to questions, as well as any other required changes, will be included in an addendum, prepared by the Design Consultant if necessary. The Purchasing Agent will distribute the addendum.
- f. After the bid, the Project Manager will prepare a bid tabulation and provide a copy to the Design Consultant for filing.

IV. CONSTRUCTION PHASE SERVICES

All Construction Phase Services will be paid on a time-and-materials basis. The not-to-exceed fee for these services will be determined by the County and/or its Project Manager and the Design Consultant. Monthly billing will include a breakdown of hours spent by personnel in the various employee categories, at billing rates agreed to by the County and the Design Consultant.

- a. The Design Consultant will attend a pre-construction meeting with County staff, Project Manager, general contractor, and construction materials testing contractor. Prior to the meeting, the Project Manager will inform the Design Consultant of how many drawing and project manual sets are required, and the Design Consultant will provide these documents at the pre-construction meeting.
- b. The Design Consultant will be responsible for reviewing contractor submittals and responding to Requests for Information.
- c. Field visits and progress meetings will not be required unless requested by the County.
- d. The Design Consultant will participate in a substantial completion walkthrough.
- e. After project completion, the Design Consultant will prepare record drawings based on contractor as-built markups. The record drawings may be printed on paper and delivered to the County.

V. INVOICING

The Design Consultant may prepare invoices in the format of its accounting system. However, the following will apply for invoices:

- a. When the first invoice is prepared, all major billing tasks anticipated for the project duration (Preliminary Design, Final Design, Survey, etc.) should be listed with budgets included. The sum of the task budgets must equal the amount in the Design Consultant's agreement. If tasks must be added or revised during the course of the project, budgets must be revised to ensure that the total budget remains the same (unless the budget is revised by amendment). Columns should be included, for each task, to show percent complete, amount earned, previously billed and current billing.
- b. A sequential numbering must be included with each invoice, i.e. Invoice 1 followed by Invoice 2, etc. Another invoice number may be included for internal purposes, but the sequential numbering should be included as well.

- c. The Purchase Order number must be included on the invoice.
- d. Markups for subconsultant services or reimbursable expenses are not allowed. A line item may be included in the fee proposal for subconsultant coordination.
- e. The County is tax-exempt and will not reimburse tax expenses. The Project Manager can provide a tax exemption form to the Design Consultant to ensure that tax is not charged.
- f. For lump sum tasks, subconsultant invoices do not need to be included in the Design Consultant's invoice.
- g. A brief progress report must be submitted with each invoice, to include efforts reflected in the invoice. Employee hourly breakdowns are not required for lump sum tasks but are required for time-and-materials tasks. Although employee timesheets are not required for time-and-materials tasks, the County reserves the right to request them in an audit.
- h. Invoices shall be submitted in PDF format to the County Engineering Department with copy to the Project Manager. The Project Manager will approve or require revisions within five days of invoice submission or revision, as applicable. The Project Manager will provide the email addresses of all to be included in the invoice submittals.

SURVEYING SERVICES

I. LAND SURVEYING SERVICES

The Land Surveying Services will obtain the necessary rights of entry (ROE) from the private landowners using request letters that are approved by the County and/or its Project Manager (as needed).

A. Establish Control and TBMs

Horizontal control points and vertical benchmarks by others will be recovered and/or will be established as needed from beginning to end of the project for construction purposes. Every attempt will be made to select locations that will not be lost during construction.

All bearings and coordinates will be based on the Texas Coordinate System of 1983 (NAD 83), South Central Zone 4204. Benchmark elevations will be referenced to the same datum as the effective Fort Bend County Flood Insurance Rate Map by observations on a minimum of three existing Reference Monuments.

B. Topographic Survey

Prepare a survey and base map of the project in a format suitable to the engineer for design purposes. This survey will be performed in accordance with the Manual of Practice for Land Surveying in Texas for a Category 6, Condition II Urban Topographic Survey Plat. The project area is marked on the attached exhibit and will be defined as:

The topographic survey deliverable will be provided in a digital CAD file at a scale suitable to the engineer for design purposes and will be limited to the following:

- Bridge Survey from abutment to abutment:
 - i. Beam Low Chord
 - ii. Top of Deck
 - iii. Top of Rail
 - iv. Columns – size, location, and channel elevation at the base
- Concrete Rip-Rap:
 - i. Limits of rip-rap
 - ii. Limits of damage
- Channel Cross Sections from ROW to ROW:
 - i. 2 upstream of the Peek Road bridges at 200' intervals
 - ii. Upstream face of Peek Road bridge
 - iii. Downstream face of Peek Road bridge

- iv. 2 downstream of the Peek Road bridges at 200' intervals
 - Channel survey from ROW to ROW
 - i. Locate washout and erosion areas 1,000 feet upstream and downstream of bridges.

C. Survey Control Maps

The Surveyor will prepare a sealed Survey Control Map Sheet and a Control Detail Sheet for the project which includes the right-of-way line, the survey control baseline, Temporary Benchmarks and the project baseline.

The survey control deliverables will be provided at a suitable scale for use in 11" x 17" and 22" x 34" formats.

GEOTECHNICAL SERVICES

I. PROJECT INFORMATION

Based on preliminary observations, the existing Peek Road Bridge structure (consisting of two separate 2-lane bridge structures) crossing Buffalo Bayou in Fort Bend County, Texas has experienced the following distresses:

- Erosion and wash out of soils were observed beneath some of the concrete liners and on the sides of the bridges.
- Some of the concrete liners placed beneath the bridge structure to protect the slope soils and the bridge abutment has been dislodged and dislocated from its originally constructed locations.
- Signs of shallow surface slope sloughing and slope surface soils erosion (in the form of patches of exposed soils and riling) were observed along the earth slopes upstream and downstream of the bridge site.
- Toe sloughing and toe erosion were observed along the earth slopes upstream and downstream of the bridge site.

The objective of this geotechnical study is to investigate the existing site and structural conditions, and the index and physical properties of the subsurface soils conditions at this bridge site, to evaluate the dispersiveness of the onsite soils and possible causes of the slope soils' erosion, and to conduct slope stability analyses at different cross-sections of the slope soils in the vicinity of the bridge site to determine the adequacy of the existing slope soils in terms of local and global slope stability. Based on these analyses, geotechnical recommendations to modify and/or repair the existing slope soils in the immediate vicinity of the bridge, as well as slope soils with about 500 feet upstream and downstream of the bridge site, to achieve the target slope stability factors of safety, will be provided. In addition, recommendations will be provided to protect the slope soils from erosion.

II. SCOPE OF GEOTECHNICAL INVESTIGATION

Based on the available project and site information, the following scope of geotechnical investigation is proposed:

- Four (4) 45-ft deep soil borings will be obtained to investigate the soil types and stratigraphy of the subsurface soils and groundwater conditions at and near the Peek Road Bridge site. Total drilling footage is 180 LF.
- Laboratory soil tests will be performed to determine the index and physical and strength properties of onsite soils, including tests to determine the dispersiveness of the onsite soils and their susceptibility to erosion, and D50 grain size to conduct the scour analyses of the channel soils.
- Slope stability analysis of the surveyed channel earth slope cross-section with the proposed slope modifications will be performed to evaluate the adequacy of the factors of safety (for the End-of-Construction, Rapid Drawdown and Long-Term Loading Conditions) of the existing earth slopes with the proposed modifications in terms of local and global slope stability.
- If the proposed slope modifications provide inadequate slope stability factors of safety, additional modifications including flatter slope or placement or replacement with select fill will be considered and evaluated until the minimum target slope stability factors of safety are met. The design slope modifications will be recommended based on the results of the slope stability analyses.
- Provide geotechnical recommendations for the construction of the slope modification and repair.
- Provide the geotechnical recommendations for the protection of the modified and repaired slope soils against erosion.

III. GEOTECHNICAL INVESTIGATION

A. FIELD EXPLORATION

Soils stratigraphy and conditions at the Peek Road Bridge site and the earth slopes upstream and downstream will be evaluated by drilling four (4) borings to a depth of 45 feet below the bank elevations. One boring will be converted into piezometer to monitor ground water conditions.

Soil borings will be drilled using a truck-mounted rig. Soil samples will be obtained continuously to a depth of 30 feet, and at 5-ft intervals thereafter. Standard Penetration Tests (SPT) will be performed in sands, if encountered, and clays will be sampled by Shelby tube. Shear strengths of the clays will be measured in the field with a hand penetrometer and correlations between this data and laboratory shear strength data will be made during analysis.

Depth to ground water will be important for the design and construction of this project. For this reason, the borings will be drilled dry and the depth at which groundwater is encountered will be recorded. The borehole will be left open for 24 hours, and 24-hour water level will be recorded, and the boreholes will be grouted after the completion of drilling and sampling. For the piezometer, water level after 24-hours and 7- and 30-day will be recorded; the piezometer will be pulled and plugged after the 30-day water level reading.

B. LABORATORY TESTING

Laboratory tests will vary with the soils encountered but will be planned to classify soils and define the index and physical and strength properties of the onsite subsurface soils. All tests will be performed in accordance with Ft. Bend County and Ft. Bend County Drainage District criteria, and the American Society of Testing Materials (ASTM) Procedures. Estimated test types and quantities are presented on attached sheet. All soil samples obtained will be retained for 3 months after the completion of final report. Besides the regular soil index properties tests, crumb and double hydrometer tests will be conducted on selected soil samples to determine the dispersiveness of the onsite soils; as part of the double hydrometer tests, D50 grains size will also be obtained for the scour analyses. Triaxial consolidated-undrained (CU) tests will also be conducted for selected soil samples to evaluate the shear strength characteristics of the onsite soils for the slope stability analyses.

C. ENGINEERING ANALYSES AND REPORTING

The field and laboratory data will be summarized in an engineering report. Analyses of these data will be presented, and recommendations made in accordance with Ft. Bend County and Ft. Bend County Drainage District criteria. Recommendations will be made relative to the following:

- Present and discuss the generalized soil stratigraphy and groundwater levels along the project alignment.
- Present the results of the slope stability analyses of the existing (surveyed) earth slopes with the proposed modifications at and upstream and downstream of the Peek Road Bridge site. Discuss the adequacy of the proposed slope modifications in terms of slope stability in terms of End-of-Construction, Rapid Drawdown and Long-Term Loading Conditions.
- For the proposed slope modifications that do not meet the minimum slope stability factors of requirements, further slope modifications (by flatter slope, or placement or replacement of compacted select fill, etc.) will be recommended based on the slope stability analyses results.
- Discuss index properties and dispersiveness of the onsite soil types and the suitability of the onsite soils for use as fill in structural and non-structural areas.
- Provide geotechnical recommendations for the modifications and repair of the slope soils.

- Provide geotechnical recommendations for erosion protection of the slope soils in and around the bridge site.

An electronic copy (pdf) of the geotechnical report will be submitted.

ENVIRONMENTAL SERVICES

The following environmental services related to the Peek Road Bridge repairs will be performed as part of the project:

- FEMA NEPA Documentation - Environmental Assessment (EA)
- Clean Water Act Compliance and Permitting

I. PROJECT INFORMATION

It is understood that Ft. Bend County is seeking to distribute funds for emergency repair of a bridge along Peek Road at Buffalo Bayou in Katy, Ft. Bend County, Texas. Federal Emergency Management Agency (FEMA) involvement is anticipated (i.e. Public Assistance Program funding), requiring compliance with National Environmental Policy Act (NEPA) regulations in accordance with Title 44, Part 10 of the Code of Federal (CFR) Regulations, addressing environmental review procedures for entities assuming FEMA environmental responsibilities.

II. FEMA NEPA DOCUMENTATION – ENVIRONMENTAL ASSESSMENT

We will compile and review available published documentation and perform/document a preliminary assessment of environmental and socio-economic conditions in general accordance with 44 CFR §10. As required in §10, existing conditions and trends, proposed project parameters, potential beneficial and adverse environmental impacts, further compliance requirements, avoidance and minimization practices, and reasonable alternatives will be addressed. Applicable statutory checklists will be completed, referencing support documentation provided in the EA Review. The referenced EA FEMA funded grant projects regulations and specifications generally address the following:

- Physical Resources
- Geology, Soils & Seismicity
- Air Quality
- Water Resources
- Surface Water
- Ground Water
- Water of U.S. (WOUS)
- Floodplain
- Coastal Resources
- Cultural Resources
- Biological Resources
- Threatened and Endangered
- Species and Critical Habitat
- Wildlife and Fish
- Socioeconomic Resources
- Environmental Justice

- Hazardous Materials
- Noise
- Transportation
- Public Health and Safety

The purpose of the EA is to assist the client in making a determination regarding the significance of any identified impacts to the human environment associated with the proposed project as required by NEPA. A recommendation for a Finding of No Significant Impact (FONSI) or for further environmental review will be provided.

Potential mitigation measures will be taken into consideration, in consultation with the client as necessary, but only on a preliminary, conceptual basis. Per FEMA conversations, requests for agency consultation will be initiated by FEMA.

Initial assessment findings may identify a need for more detailed study. Such additional services, such as noise and air quality monitoring and/or modeling, presence-absence biological surveys and on-site archeological/historical survey, are not included in the proposed scope of services. Public participation services, such as meetings, are also not included; however, one newspaper notice will be provided to client for publication. These and additional services can be provided, as needed and upon request.

The reports will address the applicable regulatory framework, describe the assessment methodology, limitations and findings, and provide site-specific conclusions and recommendations, as appropriate. Draft documents will be submitted by email for review and/or approval in electronic format (.pdf). If requested an unbound original and 1 paper copy and/or disk can be provided.

III. CLEAN WATER ACT COMPLIANCE AND PERMITTING

CLEAN WATER ACT COMPLIANCE – WATERS OF THE U.S. JURISDICTIONAL ASSESSMENT (WETLAND DELINEATION)

The Waters of the U. S. Jurisdictional Assessment scope of services is intended to assist the client in evaluating potential regulatory requirements of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA).¹ To meet this objective, Terracon will determine if potential Waters of the U.S., including wetlands, are present within the project site and will assess the observed on-site water bodies, drainage ways and wetlands that potentially may constitute jurisdictional areas² in order to help secure an official jurisdictional determination from the USACE, if warranted.

A. PRELIMINARY ASSESSMENT

A preliminary assessment will be performed as follows:

- A qualified environmental professional will review published, readily available resource documents to preliminarily identify indications of potentially jurisdictional waters. Such documents typically include topographic quadrangle maps, National

Wetlands Inventory maps, flood insurance rate maps, rainfall data, and color infra-red aerial photographs.

- A visual reconnaissance of the site will then be performed to supplement resource review findings. Potentially jurisdictional waters will be identified and delineated through on-site assessment of topography, hydrology, vegetation, and soils in general accordance with current USACE guidelines for routine determinations,³ as practicable. Representative photographs will be taken to document site observations.
- Delineated areas will be surveyed using differentially corrected GPS equipment. GPS data collected in the field will then be used to plot the surveyed areas on an exhibit, with data attributes presented in table format.
- Based on the resource document data, on-site findings, and known regulatory requirements, further assessment of the potential for USACE jurisdiction will be provided. Preliminary recommendations will be formulated as appropriate, and the findings, along with a discussion of the regulatory framework, assessment methodology and applicable limitations, will be documented in a report.

B. PJD REQUEST (OPTIONAL ADDITIONAL SERVICE)

As deemed necessary and upon specific request we will complete a PJD form for each delineated wetland area, submit PJD forms, and wetland delineation report to the USACE, and field a nominal amount of telephone requests for clarification, as may be necessary to assist the USACE in processing the PJD request.

CLEAN WATER ACT USACE PERMITTING

The Department of the Army Permit Application - USACE Permit (Permitting) scope of service is intended to assist the client in securing a Department of the Army Permit for projects that involve certain types of activities within areas that fall under the USACE's Clean Water Act (CWA) jurisdiction.

A. NATIONWIDE PERMIT DOCUMENTS

If the project results in less than 0.5 acre of impacts or less than 300 linear feet of jurisdictional stream, a USACE Nationwide Permit (NWP) may be used with a Pre-Construction Notification. Other conditions apply for specific activities that may allow for greater impacts depending on design specifications. If warranted and upon request from client, Terracon will prepare NWP pursuit documentation generally as follows:

- Client-provided preliminary engineering plans will be reviewed, and a preliminary assessment of applicable permit requirements is made in accordance with jurisdictional findings and regulations related to Section 404 of the CWA.

- The appropriate permit documentation will be prepared for submittal to the USACE in general accordance with Galveston District guidance as published on their Regulatory Branch, Permit Application web page.

B. INDIVIDUAL PERMIT DOCUMENTS

If the project results in greater than 0.5 acre of impacts or more than 300 linear feet of jurisdictional stream, an Individual Permit would be required. If warranted and upon request from client, Terracon will prepare an Individual Permit pursuit documentation generally as follows:

- Client-provided preliminary engineering plans will be reviewed and a preliminary assessment of applicable permit requirements is made in accordance with jurisdictional findings and regulations related to Section 404 of the CWA.
- The appropriate permit documentation will be prepared for submittal to the USACE in general accordance with Galveston District guidance as published on their Regulatory Branch, Permit Application web page.

IV. SCOPE SPECIFIC LIMITATIONS

This scope of services is intended to provide a reasonable effort for preliminary assessment and is thereby limited to general concurrence with guidance for routine determination only, and sample pit excavation to a depth not to exceed 20 inches.

Wetlands are naturally evolved and evolving systems. The limited scope of the Jurisdictional Assessment as proposed herein, effects of man-made disturbances and/or temporal variations (e.g. rainfall, season, drought), and or subjective interpretation of data may preclude assessment in conformance with USACE requirements and significantly affect findings, conclusions and recommendations. Effects of man-made disturbances and/or temporal variations, such as significant rainfall, winter conditions and drought, may preclude accurate assessment and significantly affect findings, conclusions and recommendations.

Official authority to make a determination defining applicable jurisdictional limits under the CWA rests solely with the Environmental Protection Agency (EPA); however, authority has been delegated to the USACE. Jurisdictional Determinations (JD) are made by the USACE, upon specific written request, on a case-by-case basis and may make use of certain information at its disposal (such as other permits in the local area) that may not be readily available to the public. The proposed Jurisdictional Assessment should, therefore, not be considered authoritative, and it may not wholly eliminate uncertainty regarding the USACE's jurisdictional limits under the CWA.

ALTERNATIVE ASSESSMENT (OPTIONAL ADDITIONAL SERVICE)

A cursory discussion of considered project alternatives is included in the Permitting scope of

services, per above. In the unlikely event that the USACE's review results in a request for more detailed and substantiated assessment, a separate document will be prepared, in consultation with the client and submitted to the USACE.

ADDITIONAL SERVICES NOT INCLUDED

A jurisdictional determination and preliminary assessment of potential impacts to cultural resources and endangered species is typically performed by the USACE as part of their internal permit review process. Should their preliminary findings indicate the potential for significant adverse impacts, the USACE may request project-specific assessments. Additional services, such as cultural resource surveys, mitigation plan preparation, additional meetings and/or site visits (other than per above), may be warranted but are not included in this scope of services. Terracon has the capability to provide such additional CWA compliance services, upon request.

V. REPORT PREPARATION

Comprehensive reports typically address the applicable regulatory framework, describe the assessment methodology, limitations and findings, and provide site-specific conclusions and recommendations, as appropriate. Exhibits such as figures, referenced resource documents, data forms and photographs are included as appendices. The findings from the proposed scopes of services will be documented in a report which can be submitted to FEMA and USACE.

HYDRAULIC IMPACT ANALYSIS

A Hydraulic Impact Analysis will be performed, and a report will be prepared and submitted as part of the Preliminary Engineering Report. The Hydraulic Impact Analysis will include the following:

- a. Obtain the effective FEMA hydraulic models (existing) for Buffalo Bayou for the project area, including any published revisions (CLOMR's or LOMR's).
- b. Prepare a revised effective hydraulic model (revised existing) using HEC-RAS to reflect the surveyed conditions of Buffalo Bayou within the limits of the channel erosion and the Peek Road Bridges.
- c. Perform an analysis to define existing drainage areas and drainage patterns for the project area. Evaluate the drainage patterns and define runoff flows defined by the existing drainage areas based on LIDAR topography, topographic survey and Fort Bend County drainage criteria. Calculate the 10-yr and 100-yr peak flows and compare calculated runoff values versus the effective FEMA models.
- d. Prepare a proposed hydraulic model using HEC-RAS to model the proposed repairs and improvements to Buffalo Bayou to ensure no impacts and/or rise in water surface elevations for the 10-yr and 100-yr peak flows.

- e. Perform and prepare a scour analysis using FHWA Hydraulic Engineering Circular No. 18, "Evaluating Scour at Bridges", Fifth Edition, April 2012 or other approved methodology. The methodology will be choosing based on the site conditions such as the presence of cohesive or cohesionless soil, rock or depth of rock, bridge foundation type, and existing site performance. The scour analysis will identify potential contraction and pier scour depths, and any potential remediation to be included in the proposed repairs and/or improvements.
- f. Prepare hydraulic impact report summarizing the analysis and detailing the findings. The report shall be prepared in accordance with Ft. Bend County Drainage District criteria.

SCHEDULE OF SERVICES

Upon receiving official notice to proceed with the Preliminary Design Phase Services we anticipate the preliminary investigations and design, including the survey, geotechnical investigation, environmental site assessment and hydrologic and hydraulic analysis will be completed in three (3) months.

Upon receiving official notice to proceed with the Final Design and Bid Phase Services we anticipate having the bid ready documents ready for the County in four months (4).

Compensation for Professional Services
Project Name: Peek Road Emergency Bridge Repairs at Buffalo Bayou

1	Preliminary Design Services	\$44,080.00
2	Final Design Services	\$73,790.00
3	Bid Phase Services	\$8,780.00
4	Survey Services	\$30,780.00
5	Geotechnical Investigations	\$20,000.00
6	Environmental Services	\$35,300.00
7	Hydraulic Impact Study	\$37,460.00
Subtotal Basic Services (1-7):		\$250,190.00
8	*Optional Additional Services including, but not limited to	
	USACE Individual Permit Documetation	\$19,525.00
Subtotal Optional Additional Services(8):		\$19,525.00
TOTAL SERVICES (BASIC & OPTIONAL ADDITIONAL)		\$269,715.00

PEEK ROAD EMERGENCY BRIDGE REPAIRS: PRELIMINARY DESIGN PHASE MANHOUR & FEE ESTIMATE

TASK NUMB.	TASK DESCRIPTION	1	2	3	4	5	6	7	8	TOTAL MH'S PER WORK TASK	TOTAL COSTS PER WORK TASK
		TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION									
		SENIOR PROJ MGR.	SENIOR PROJ ENGR.	PROJ ENGR	ASS'T ENGR	SR DESIGN TECH	CADD OPERATOR	ADMIN	CLERICAL		
	PROJECT MANAGEMENT, MEETINGS, & COORDINATION	\$250.00	\$230.00	\$160.00	\$130.00	\$150.00	\$75.00	\$90.00	\$75.00		
1	KICKOFF MEETING	3		3						6	\$ 1,230.00
2	DESIGN OPTIONS MEETING	3		3						6	\$ 1,230.00
3	SURVEY COORDINATION	2		2	4					8	\$ 1,340.00
4	GEOTECHNICAL COORDINATION	2		2	4					8	\$ 1,340.00
5	ENVIRONMENTAL COORDINATION	2		2	4					8	\$ 1,340.00
6	MONTHLY COORDINATION MEETINGS & INVOICING	8		6				6	2	22	\$ 3,650.00
7	TECHNICAL REVIEW COMMITTEE PRESENTATION	3		3						6	\$ 1,230.00
	SUBTOTAL PROJECT MANAGEMENT, MEETINGS, & COORDINATION - MANHOURS	23		21	12			6	2	64	
		SUBTOTAL PROJECT MANAGEMENT, MEETINGS, & COORDINATION									\$ 11,360.00
	PRELIMINARY DESIGN										
8	CHANNEL REPAIR OPTIONS, DETAILS, & EXHIBITS	10		16	32	12	60			130	\$ 15,520.00
9	ESTIMATED PROBABLE CONSTRUCTION COSTS	2		8	24		16			50	\$ 6,100.00
	SUBTOTAL PRELIMINARY ROADWAY & DRAINAGE DESIGN - MANHOURS	12		24	56	12	76			180	
		SUBTOTAL PRELIMINARY ROADWAY & DRAINAGE DESIGN									\$ 21,620.00
	PRELIMINARY ENGINEERING REPORT & TRC										
10	TECHNICAL REVIEW COMMITTEE PRESENTATION PREPARATION	4		6	10			4	2	26	\$ 3,770.00
11	PRELIMINARY ENGINEERING REPORT PREPARATION	10		14	16			4	2	46	\$ 7,330.00
	SUBTOTAL PRELIMINARY ENGINEERING REPORT & TRC - MANHOURS	14		20	26			8	4	72	
		SUBTOTAL PRELIMINARY ENGINEERING REPORT & TRC									\$ 11,100.00
		TOTAL PRELIMINARY ENGINEERING DESIGN PHASE									\$ 44,080.00

PEEK ROAD EMERGENCY BRIDGE REPAIRS: FINAL DESIGN PHASE MANHOUR & FEE ESTIMATE

TASK NO.	TASK DESCRIPTION	TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION								TOTAL MH'S PER WORK TASK	ESTIMATED PLAN SHEET REQUIREMENTS		MANHOUR PER SHET	TOTAL COSTS PER WORK TASK
		1	2	3	4	5	6	7	8		QNTY	SCALE		
		SENIOR PROJ MGR.	SENIOR PROJ ENGR.	PROJ ENGR	ASS'T ENGR	SR DESIGN TECH	CADD OPERATOR	ADMIN	CLERICAL					
	PLAN PRODUCTION	\$250.00	\$230.00	\$160.00	\$130.00	\$150.00	\$75.00	\$90.00	\$75.00					
1	PROJECT TITLE SHEET; LOCATION & VICINITY MAP	1			1		2			4	1	N/A	4	\$ 530.00
2	INDEX OF SHEETS	1			1		2			4	1	N/A	4	\$ 530.00
3	GENERALNOTES	1		2			4			7	1	N/A	7	\$ 870.00
4	TYPICAL SECTIONS	2		2	6		12			22	1	N/A	22	\$ 2,500.00
5	PROJECT LAYOUT SHEET	2		4	6		10			22	1	1"=100'	22	\$ 2,670.00
6	CHANNEL PLAN & PROFILE	6		16	36		52			110	4	1"=20'/1"=2'	28	\$ 12,640.00
7	STORM WATER POLLUTION PREVENTION PLAN NOTES	1		2			2			5	1	N/A	5	\$ 720.00
8	STORM WATER POLLUTION PREVENTION PLAN	2		2	6		18			28	2	1"=40'	14	\$ 2,950.00
9	MISCELLANEOUS DETAILS	2		6	10		16			34	2	N/A	17	\$ 3,960.00
10	SOIL BORING LOG SHEETS	1		2			6			9	6	N/A	2	\$ 1,020.00
11	EARTHWORK SUMMARY SHEET	1		2	6		8			17	1	N/A	17	\$ 1,950.00
12	CROSS SECTIONS	2		6	12		52			72	4	1"=20'/1"=2'	18	\$ 6,920.00
	PLAN PRODUCTION - MANHOURS	22		44	84		184			334	25			
														\$ 37,260.00
	PROJECT MGMT & DESIGN TASKS													
13	DESIGN KICKOFF MEETING	3		3						6				\$ 1,230.00
14	MONTHLY COORDINATION MEETINGS	6		6						12				\$ 2,460.00
15	INTERNAL QA/QC REVIEWS PRIOR TO SUBMITTALS (70%, 95%, & FINAL SUBMITTALS)	8		20	16					44				\$ 7,280.00
16	WRITTEN RESPONSES TO REVIEW COMMENTS (70%, AND 95% SUBMITTALS)	4		8	12				4	28				\$ 4,140.00
17	CHANNEL REPAIR DESIGN	4		14	32					50				\$ 7,400.00
18	MISCELLANEOUS DETAILS	4		10	16					30				\$ 4,680.00
19	PROJECT MANUAL (CONTRACT DOCUMENT, BID PROPOSAL AND TECHNICAL SPECIFICATIONS)	4		8	16				4	32				\$ 4,660.00
20	QUANTITIES/COST ESTIMATES (70%, 95% & FINAL SUBMITTALS)	4		10	16					30				\$ 4,680.00
	SUBTOTAL PROJECT MGMT & DESIGN TASKS - MANHOURS	37		79	108				8	232				
														\$ 36,530.00
														\$ 73,790.00

PEEK ROAD EMERGENCY BRIDGE REPAIRS: PRELIMINARY DESIGN PHASE MANHOUR & FEE ESTIMATE

TASK NUMB.	TASK DESCRIPTION	1	2	3	4	5	6	7	8	TOTAL MH'S PER WORK TASK	TOTAL COSTS PER WORK TASK
		TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION									
		SENIOR PROJ MGR.	SENIOR PROJ ENGR.	PROJ ENGR	ASS'T ENGR	SR DESIGN TECH	CADD OPERATOR	ADMIN	CLERICAL		
	BID PHASE SERVICES	\$250.00	\$230.00	\$160.00	\$130.00	\$150.00	\$75.00	\$90.00	\$75.00		
1	PREPARATION OF BID PACKAGE & INFORMATION			2	4			4	6	16	\$ 1,650.00
2	PRE-BID CONFERENCE			3						6	\$ 1,230.00
3	WRITTEN RESPONSES TO CONTRACTOR INQUIRIES, DRAFT & ADDENDUM PREPARATION			8						12	\$ 2,280.00
4	RESEARCH LOW BID CONTRACTOR, ISSUE LETTER OF RECOMMENDATION			6	10			4		24	\$ 3,620.00
	SUBTOTAL PROJECT MANAGEMENT, MEETINGS, & COORDINATION - MANHOURS	11		19	14			8	6	58	
TOTAL BID PHASE										\$	8,780.00

PEEK ROAD EMERGENCY BRIDGE REPAIRS: HYDRAULIC IMPACT STUDY MANHOUR & FEE ESTIMATE

TASK NUMB.	TASK DESCRIPTION	1	2	3	4	5	6	7	8	9	TOTAL MH'S PER WORK TASK	TOTAL COSTS PER WORK TASK
		TOTAL MANHOURS PER WORK TASK BY STAFF CLASSIFICATION										
		SENIOR PROJ MGR.	SENIOR PROJ ENGR.	PROJ ENGR	ASST ENGR	SR GIS ANALYST	GIS ANALYST	CADD OPERATOR	ADMIN	CLERICAL		
		\$250.00	\$230.00	\$160.00	\$130.00	\$160.00	\$120.00	\$75.00	\$90.00	\$75.00		
	HYDRAULIC IMPACT STUDY											
1	COORDINATIN & MEETINGS (FT. BEND COUNTY DRAINAGE DISTRICT		4		4						8	\$ 1,440.00
2	DATA COLLECTION & REVIEW - OBTAIN EFFECTIVE MODEL		2		8		12				22	\$ 2,940.00
3	REVISED EFFECTIVE MODEL		4		16		24				44	\$ 5,880.00
4	HYDROLOGIC CALCULATIONS		4		8		12				24	\$ 3,400.00
5	PROPOSED HYDRAULIC MODEL		8		32		16				56	\$ 7,920.00
6	PERFORM SCOUR ANALYSIS		12		40		10				62	\$ 9,160.00
7	PREPARE DRAINAGE REPORT		6		24		16			4	50	\$ 6,720.00
	SUBTOTAL HYDRAULIC IMPACT STUDY - MANHOURS		40		132		90			4	266	
	TOTAL HYDRAULIC IMPACT STUDY											\$ 37,460.00