

ENGINEERING SERVICES AGREEMENT

THIS AGREEMENT is made and entered into by and between the Fort Bend Grand Parkway Toll Road Authority, a transportation corporation organized and operating under the laws of the State of Texas, hereinafter called the "FBGPTRA" and Freese and Nichols, Inc., hereinafter called "Engineer."

WITNESSETH

WHEREAS, the FBGPTRA proposes to study the Brazos River erosion at the Fort Bend Grand Parkway Toll Road, Segment D, in Fort Bend County, Texas, (the "Project");

WHEREAS, the FBGPTRA desires to enter into an agreement with Engineer for the performance of services during the Project, that are within the "Scope of Services" in Attachment A;

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

AGREEMENT

1. General

The Engineer shall render professional services to FBGPTRA related to the Project as defined in the Scope of Services in Attachment A.

The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of Engineer's profession practicing under similar conditions at the same time and in the same locality.

2. Compensation and Payment

- a. The Maximum Compensation under this Agreement is \$210,153.71. The amount paid under this Agreement may not exceed the Maximum Compensation without an approved supplemental agreement.

Compensation for the performance of services within the Scope of Services described in Attachment A will be paid as a lump sum amount not to exceed \$210,153.71, as shown in Attachment B. Progress payments for work detailed in Attachment A will be made when the Engineer has attained a level of completion equal to or greater than agreed upon milestones of completion in the reasonable opinion of FBGPTRA.

The Engineer shall furnish satisfactory documentation of such work (e.g. timesheets, billing rates, classifications, invoices, etc.) as may be required by FBGPTRA.

- b. All performance of the Scope of Services and any services outside the scope of services ("Additional Services") including changes in the contractual scope of work and revision of work satisfactorily performed, will be performed only when approved in advance and authorized by the FBGPTRA, and Additional Services will be reimbursed based on the billing rates in effect at that time, to the extent that such labor costs, and subcontracts are reasonable and necessary for the performance of such services. Out-of-pocket expense costs may be reimbursed only when approved in advance and authorized by the FBGPTRA. Payment will be made on the basis of project completion certificate and, for Additional Services, time and expense records and in accordance with those payment procedures set forth in subsection d. below. Billing rates will be inclusive of all direct labor, fringe benefits, general overhead, and profit.
- c. Where subcontractors are employed by the Engineer to perform additional services not within the original Scope of Services, the Engineer will be reimbursed for subcontractors' actual salaries and hourly rates, including overtime rates. Reimbursement to the Subcontractor for non-salary costs incurred by subcontractor will be on the same basis as if the cost was incurred by the Engineer. For subcontractors employed for the convenience of the FBGPTRA, the Engineer will be paid a subcontract administrative fee equal to ten percent (10%) of all subcontractor invoiced amounts.
- d. It is understood and agreed that monthly payments will be made to the Engineer by the FBGPTRA based on the following procedures: On or about the fifteenth day of each month during the performance of services hereunder and on or about the fifteenth day of the month following completion of all services hereunder, the Engineer shall submit to the FBGPTRA two (2) copies of invoices showing the amounts due for services performed during the previous month, set forth separately for work under this Agreement and for additional services (accompanied by supporting certified time and expense records of such charges in a form acceptable to the FBGPTRA.) It is specifically understood that any requests for travel reimbursements shall comply with those procedures for travel reimbursement to Fort Bend County (the "County") employees established by the Fort Bend County Auditor. The FBGPTRA 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. The County shall pay each such invoice as approved by the FBGPTRA within thirty (30) calendar days after the FBGPTRA's approval of same.

3. Time of Performance

It is understood and agreed that the time for performance of the Engineer's services under this Agreement shall begin with receipt of the Notice to Proceed and end November 1, 2016.

4. The FBGPTRA's Option to Terminate

- a. The FBGPTRA has the right to terminate this Agreement at its sole option at any time, with or without cause, by providing 30 days written notice of such intentions to terminate and by stating in said notice the "Termination Date" which shall be less than 30 days later than the actual receipt of such written notice by the Engineer. Upon such termination, the FBGPTRA shall compensate the Engineer in accordance with Section 2, above, for those services which were provided under this Agreement prior to its termination and which have not been previously invoiced to the FBGPTRA. The Engineer's final invoice for said services will be presented to and paid by the FBGPTRA in the same manner set forth in Section 2(d), above.
- b. Termination of this Agreement and payment as described in subsection (a) of this section shall extinguish all rights, duties, obligations, and liabilities of the FBGPTRA and the Engineer under this Agreement and this Agreement shall be of no further force and effect, provided, however, such termination shall not act to release the Engineer from liability for any previous default either under this Agreement or under any standard of conduct set by common law or statute. The obligations in Section 6 shall survive the termination of this Agreement.
- c. If the FBGPTRA 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 the Engineer.
- d. The FBGPTRA's rights and options to terminate this Agreement, as provided in any provision of this Agreement shall be in addition to, and not in lieu of, any and all rights, actions and privileges otherwise available under law or equity to the FBGPTRA by virtue of this Agreement or otherwise. Failure of the FBGPTRA to exercise any of its said rights, actions, options or privileges to terminate this Agreement as provided in any provision of this Agreement shall not be deemed a waiver of any rights, actions or privileges otherwise available under the law or equity with respect to any continuing or subsequent breaches of this Agreement or of any other standard of conduct set by common law or statute.
- e. Copies of all completed and partially completed documents prepared under this Agreement shall be delivered to the FBGPTRA within 30 days or upon Engineer's receipt of termination payment, whichever is sooner, when and if this Agreement is terminated.

5. Inspection of the Engineer's Books and Records

The Engineer will permit the FBGPTRA, or any duly authorized agent of the FBGPTRA, to inspect and examine the books and records of the Engineer for the purpose of verifying the amount of work performed on the Project. FBGPTRA's right to inspect survives the termination of this Agreement for a period of four years.

6. Ownership and Reuse of Documents

All documents, including original drawings, estimates, specifications, field notes, and data created, produced, developed or prepared by Engineer or its approved outside advisory or support consultants (collectively, the "Documents") shall be the property of the FBGPTRA subject to all of the following terms and conditions; provided, however, FBGPTRA shall not own and shall have no right to receive any documents not deemed "final" by the Engineer until termination of this Agreement. Engineer will deliver the Documents to FBGPTRA within 30 days of the termination of this agreement and may retain a set of reproducible record copies of the Documents, provided that the Engineer has received full compensation due pursuant to the terms of this Agreement. It is mutually agreed that FBGPTRA will use the Documents solely in connection with the Project and for no other purposes, except with the express written consent of the Engineer, which consent will not be unreasonably withheld. Any use of the Documents without the express written consent of the Engineer will be at District's sole risk and without liability or legal exposure to Engineer.

FBGPTRA shall also be the owner of all intellectual property rights of the services rendered hereunder, including all rights of copyright therein. It is the intention of Engineer and FBGPTRA that the services provided are a "work for hire" as the term is used in the federal Copyright Act. Moreover, Engineer hereby agrees to assign, and by these presents, does assign to FBGPTRA all of Engineer worldwide right, title and interest in and to such work product and all rights of copyright therein.

Engineer agrees that all trademarks, trade names, service marks, logos, or copyrighted materials of FBGPTRA that Engineer is permitted to use in connection with the services will not be used without FBGPTRA's consent and shall remain in the sole and exclusive properties of FBGPTRA and this Agreement does not confer upon Engineer any right or interest therein or in the use thereof.

7. Personnel, Equipment, and Material

- a. The Engineer 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 the Engineer shall furnish and maintain, at its own expense, adequate and sufficient personnel and equipment, in the opinion of the FBGPTRA, to perform the Scope of Services when and as required and without delays. It is understood that the FBGPTRA will approve assignment and release of all key Engineer personnel and that the Engineer shall submit written notification of all key Engineer personnel changes for the FBGPTRA's approval prior to the implementation of such changes. For the purpose of this agreement, key Engineer personnel are defined as: Project Manager. Services described in this Agreement shall be performed under the direction of an engineer licensed to practice professional engineering in the State of Texas.

- b. All employees of the Engineer shall have such knowledge and experience as will enable them to perform the duties assigned to them. Any employee of the Engineer who, in the opinion of the FBGPTRA, is incompetent or by his conduct becomes detrimental to the Project shall, upon request of the FBGPTRA, immediately be removed from association with the Project.
 - c. Except as otherwise specified, the Engineer shall furnish all equipment, transportation, supplies, and materials required for its operation under this Agreement.
8. Items to be furnished to Engineer by the FBGPTRA
- The following items will be supplied to the Engineer:
- a. Copies of preliminary studies by others.
 - b. Assistance in coordination with all utility companies.
 - c. Assistance in coordination with all public and governmental entities.
9. Subletting
- The Engineer shall not sublet, assign, or transfer any part of its rights or obligations in this Agreement without the prior written approval of the FBGPTRA. Responsibility to the FBGPTRA for sublet work shall remain with the Engineer.
10. Conference
- At the request of the FBGPTRA, the Engineer shall provide appropriate personnel for conferences at its offices, or attend conferences at the various offices of the FBGPTRA, or at the site of the Project, and shall permit inspections of its offices by the FBGPTRA, or others when requested by the FBGPTRA.
11. Appearance as Witness
- If requested by the FBGPTRA, or on its behalf, the Engineer shall prepare such engineering exhibits and plans as may be requested for all hearings and trials related to the Project and, further, it shall prepare for and appear at conferences at the office of the FBGPTRA's Executive Director and shall furnish competent expert engineering witnesses to provide such oral testimony and to introduce such demonstrative evidence as may be needed throughout all trials and hearings with reference to any litigation relating to the Project. Trial preparation and appearance by the Engineer in courts regarding litigation matters are Additional Services and compensation will be paid in accordance with Section 2(b).

12. Compliance with Laws

The Engineer 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, the Engineer shall furnish the FBGPTRA with certification of compliance with said laws, statutes, ordinances, rules, regulations, orders, and decrees above specified.

13. Insurance

The Engineer shall obtain and maintain, throughout the term of the Agreement, insurance of the types and in the minimum amounts set forth in Attachment C.

14. Indemnification

With respect to claims brought by third parties against either Engineer of the FBGPTRA relating to the property or facilities with respect to which this Agreement pertains, Engineer and the FBGPTRA agree as follows:

- a. **ENGINEER WILL INDEMNIFY AND HOLD HARMLESS THE FBGPTRA, ITS DIRECTORS, OFFICERS, AND EMPLOYEES AGAINST ANY CLAIMS, DEMANDS OR CAUSES OF ACTION; AND COSTS, LOSSES, LIABILITIES, EXPENSES AND JUDGMENTS INCURRED IN CONNECTION THEREWITH, INCLUDING REASONABLE ATTORNEY'S FEES AND COURT COSTS, BROUGHT BY ANY OF ENGINEER'S EMPLOYEES OR REPRESENTATIVES, OR BY ANY OTHER THIRD PARTY, BASED UPON, IN CONNECTION WITH, RESULTING FROM OR ARISING OUT OF THE NEGLIGENT ACTS, ERRORS OR OMISSIONS OF ENGINEER; HOWEVER, ENGINEER'S CONTRACTUAL OBLIGATION OF INDEMNIFICATION SHALL NOT EXTEND TO THE NEGLIGENCE OR OTHER FAULT OF THE FBGPTRA OR STRICT LIABILITY IMPOSED UPON THE FBGPTRA AS A MATTER OF LAW (INCLUDING STRICT LIABILITY IMPOSED UPON THE FBGPTRA AS A RESULT OF THE CONDITION OF THE PROPERTY OR FACILITIES WITH RESPECT TO WHICH THIS AGREEMENT PERTAINS).**
- b. In the event that both the FBGPTRA and Engineer are adjudicated negligent or otherwise at fault or strictly liable without fault with respect to damage or injuries sustained by the claimant, each shall be responsible for its own costs of litigation and pro rata share of damages as determined by the proceedings.

It is a condition precedent to the indemnitor's contractual obligation of indemnification under this Agreement that the party seeking indemnity shall provide written notice of a third party claim, demand or cause of action within 30 days after such third party claim, demand or cause of action is received by the party seeking indemnity. It is a further

condition precedent to the indemnitor's contractual obligation of indemnification under this Agreement that the indemnitor shall thereafter have the right to participate in the investigation, defense and resolution of such third party claim.

15. Dispute Resolution

Except as expressly provided in Section 4. Termination, if a dispute arises out of, or relates to, the breach thereof, and if the dispute cannot be settled through negotiation, then the FBGPTRA and the Engineer agree to submit the dispute to mediation. In the event the FBGPTRA or the Engineer desires to mediate any dispute, that party shall notify the other party in writing of the dispute desired to be mediated. If the parties are unable to resolve their differences within 10 days of the receipt of such notice, such dispute shall be submitted for mediation in accordance with the procedures and rules of the American Arbitration Association (or any successor organization) then in effect. The deadline for submitting the dispute to mediation can be changed if the parties mutually agree in writing to extend the time between receipt of notice and submission to mediation. The expenses of the mediator shall be shared 50 percent by the FBGPTRA and 50 percent by the Engineer. This requirement to seek mediation shall be a condition required before filing an action at law or in equity.

16. Delivery of Notices, Etc.

- a. All written notices, demands, and other papers or documents to be delivered to the FBGPTRA under this Agreement shall be delivered to the Fort Bend Grand Parkway Toll Road Authority, P.O. Box 1307, Sugar Land, Texas 77406, Attention: Mike Stone, or at such other place or places as it may from time to time designate by written notice delivered to the Engineer. For purposes of notice under this Agreement, a copy of any notice or communication hereunder shall also be forwarded to the following address: Fort Bend County Clerk, 301 Jackson Street, Richmond, Texas 77469, Attention: County Judge.
- b. All written notices, demands, and other papers or documents to be delivered to the Engineer under this Agreement shall be delivered to Freese and Nichols, Inc., 10497 Town and Country Way, Suite 600, Houston, Texas, 77024, Attention: Cody Cockroft, or such other place or places as the Engineer may designate by written notice delivered to the FBGPTRA.

17. Reports of Accidents, Etc.

Within 24 hours after the occurrence of any accident or other event which results in, or might result in, injury to the person or property of any third person (other than an employee of the Engineer), whether or not it results from or involves any action or failure to act by the Engineer or any employee or agent of the Engineer and which arises in any manner from the performance of this Agreement, the Engineer shall send a written report of such accident or other event to the FBGPTRA, setting forth a full and concise statement of the facts pertaining thereto. The Engineer shall also immediately send the FBGPTRA a copy of any summons, subpoena, notice, other documents served upon the

Engineer, its agents, employees, or representatives, or received by it or them, in connection with any matter before any court arising in any manner from the Engineer's performance of work under this Agreement.

18. The FBGPTRA's Acts

Anything to be done under this Agreement by the FBGPTRA may be done by such persons, corporations, or firms as the FBGPTRA may designate.

19. Limitations

Notwithstanding anything herein to the contrary, all covenants and obligations of the FBGPTRA under this Agreement shall be deemed to be valid covenants and obligations only to extent authorized by the Act creating the FBGPTRA and permitted by the laws and the Constitution of the State of Texas. This Agreement shall be governed by the laws of the State of Texas, and no officer, director, or employee of the FBGPTRA shall have any personal obligation hereunder.

20. Captions Not a Part Hereof

The captions of subtitle of the several sections and divisions of this Agreement constitute no part of the content hereof, but are only labels to assist in locating and reading the provisions hereof.

21. Controlling Law, Venue

This Agreement shall be governed and construed in accordance with the laws of the State of Texas. The parties hereto acknowledge that venue is proper in Fort Bend County, Texas, for all disputes arising hereunder and waive the right to sue or be sued elsewhere.

22. Successors and Assigns

The FBGPTRA and the Engineer 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.

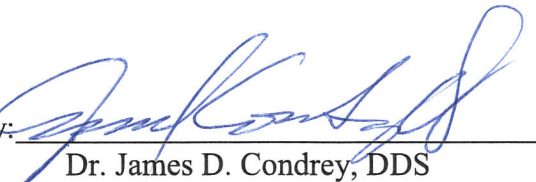
23. Appendices


The Appendices attached to this Agreement, which consists of:

Attachment A	Scope of Services
Attachment B	Compensation for Scope of Services
Attachment C	Insurance Requirements

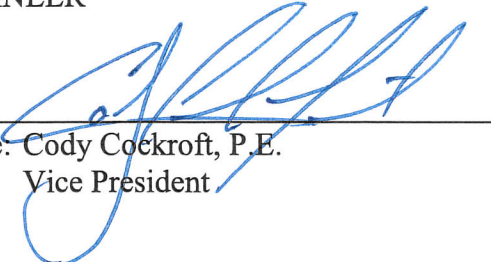
IN WITNESS WHEREOF, the parties hereto have signed or have caused their respective names to be signed to multiple counterparts to be effective on the 20th day of July, 2016.

FORT BEND GRAND PARKWAY TOLL ROAD
AUTHORITY, a local government Texas
corporation

By: 
Dr. James D. Condrey, DDS
Chairman, Board of Directors

ATTEST. 
By Assistant Secretary, Board of Directors

Freese and Nichols, Inc.
ENGINEER

By: 
Name: Cody Cockroft, P.E.
Title: Vice President

EFFECTIVE DATE

THIS AGREEMENT IS EFFECTIVE ON THE DATE IT IS APPROVED BY THE FORT BEND COUNTY COMMISSIONERS COURT, AND IF NOT SO APPROVED SHALL BE NULL AND VOID.

DATE OF COMMISSIONERS COURT APPROVAL: _____

AGENDA ITEM NO.: _____

**Attachment A
Scope of Services****Fort Bend County Grand Parkway Toll Road Authority
Brazos River and SH 99 Shoreline Erosion Study
Preliminary Engineering Report**

Freese and Nichols, Inc. (FNI) presents this scope of work (SOW) for professional services for the Brazos River and SH 99 Shoreline Erosion Study (Project). The Brazos River north and south banks in the vicinity of the SH 99 bridge have degraded approximately eight-two (82) feet. It is possible that the bridge could be at risk due to the extent of the degradation. The degradation has been caused by erosion by the Brazos River over time, but this damage exacerbated by recent historical flood events. This project will provide a Preliminary Engineering Report for assessment of the shoreline erosion at the project site containing conceptual alternatives for potential repair and protection. As a consequence, and based on the client's preferred alternative, final design can proceed.

In general, this SOW will provide topographic and bathymetric surveys, engineering assessment of existing structural design documents, hydraulic and hydrologic assessment of existing conditions, and environmental services related to regulatory requirements associated with the alternatives. This SOW and associated professional fee estimate details proposed project tasks for the PER phase of work.

TASK 1.00 Project Management / General Items (Basic Services)

1. Attend one kickoff meeting with the Client to discuss the scope, budget and schedule of the project, and to request required information from the Client.
2. Attend one pre-design site visit with the Client to investigate the site and determine site conditions related to:
 - a. Geotechnical and environmental investigations access;
 - b. Construction and river access
 - c. Items that may impact engineering design
3. Provide monthly progress updates with the Client during the PER phase describing:
 - a. Completed action items
 - b. Project schedule updates
 - c. Requests for information
 - d. New action items
4. Site visits during PER phase, as necessary, not to exceed two (2) visits.

TASK 2.00 Data Collection (Basic Services)

Data collection will measure site conditions. The extent of data needed will be determined through review of available data and discussion with Client regarding previously conducted reports and studies. The data collection will identify data gaps and data needs for the Preliminary Engineering Report, including:

Bathymetry: FNI will subcontract a professional surveying firm to conduct topography and bathymetry surveys of the river bottom and shoreline embankment in the immediate vicinity of the project site. The survey will provide the general characteristics of the project site for assessing flows, erosional trends, etc.

Geotechnical information: FNI understands that much of the geotechnical information and data used to design the bridge is not available. It will be necessary to ascertain usable geotechnical information for the PER phase of this project and for future design requirements. Refer to Task 6.00 for more information.

TASK 3.00 Environmental Services (Basic Services)

FNI will inspect the bridge drawings, the existing bridge and the river banks in the vicinity of the existing bridge to develop remedial actions to protect or restore the structure or river banks. Since the Brazos River is jurisdictional under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, any remedial action that would place fill in an area subject to jurisdiction under these acts must be authorized by the U. S. Army Corps of Engineers, either through a Nationwide Permit or individual permit. The permit vehicles that could potentially be used to authorize remedial actions include Nationwide Permit (NWP) 3 Maintenance, NWP 13 Bank Stabilization, NWP 27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities or an individual permit (IP). It is possible that other permit vehicles may be available to authorize proposed actions once they have been defined.

1. FNI environmental scientists will investigate the permitting options available for this project, consult with the project engineers to determine a range of feasible actions based upon permitting constraints, and consult with the engineers in order to refine potential actions for appropriate permitting vehicles, if practicable.
2. The permitting options and considerations would be outlined in a memorandum report and a summary of this report would be included in the Preliminary Engineering Report.
3. Additionally, the team would consider whether bridge or surrounding structures are sufficiently at risk from the damage suffered to the extent that the situation would constitute an emergency and, if so, seek a meeting with the USACE to discuss the appropriate path forward as part of an optional task.

TASK 4.00 Alternatives Analysis / Preliminary Engineering Report (Basic Services)

FNI shall produce a Preliminary Engineering Report (PER) for the shoreline erosion along the Brazos River at SH99 in southwest Houston. The Preliminary Engineering Report (PER) will provide the basis for selection of the preferred alternative(s) for the project. The PER will include:

1. Confirmation of the existing conditions of the northern and southern abutments with respect to global stability, localized erosion and deterioration, expected longevity, and potential impacts to public safety. FNI will provide a structural engineer to review as-built bridge plans and geotechnical reports/information (provided by Client) to determine the bridge substructure/foundation load carrying capacities, investigate the extent of the scour along the embankment near the north abutment, and analyze potential impacts to the bridge substructure/foundation capacities. The structural engineer will consider the rate of shoreline erosion experienced at the project site to provide recommendations for structural repairs, scour mitigation and/or future scour protection at the project site.

A Structural Investigation Technical Memorandum will be prepared and included as an Appendix in the PER.

2. A hydraulic and hydrologic (H&H) assessment will be conducted using a 2-D RAS model for determination of flow velocities at: 1) operational conditions at the project site, and 2) for high-water mark stage elevation at the project site. The H&H analysis will use topographic and bathymetric data collected under Task 2, to define the existing channel characteristics at the bridge, and use gauge data (where available) upstream of the project site for characterizing the stage elevations experienced at

the project site. The results of the H&H model will provide the basis for proposed alternatives for the north and south river shorelines at the project site.

An H&H Assessment Technical Memorandum will be prepared and included as an Appendix in the PER.

3. A listing of potential solution alternatives (mechanical, structural, river training, or combination of each) will be tabulated in order to provide a means to narrow a viable solution. An analysis matrix will be presented which will distinguish those alternatives for additional consideration from those alternatives which will be disqualified from further analysis. This analysis will be rather subjective in nature.
4. Four (4) total conceptual alternatives will be developed, two (2) for the north bank and two (2) for south bank. The alternatives will provide recommendations for construction materials and methods for the addressing the north and south shoreline erosion.
5. Opinions of Probable Construction Cost (OPCC) for conceptual alternatives, with a breakdown of costs for each proposed phase of work
6. Identify regulatory agencies involved with alternative(s) and anticipated permitting level of effort.
7. A geomorphological assessment will be conducted using photographs, graphics, and charts to support above items, as necessary and appropriate, FNI will conduct an assessment of the existing shoreline erosion with respect to the SH99 bridge abutment and nearby flood levee. FNI will review existing aerial photography to identify historical shoreline evolution. The geomorphological assessment will be discussed in the PER as project background and used for directing selection of the preferred alternative.

TASK 5.00 Strategic Plan and Recommended Actions (Basic Services)

FNI shall develop a strategic plan for mitigating erosional processes at both the north and south shorelines. The PER will contain conceptual level drawings, conceptual level OPCC, and anticipated schedules for completion of construction alternatives, with sufficient detail to allow client to determine the appropriate alternative to move forward to preliminary and final design. The PER will provide a preferred alternative for construction. The strategic plan will include:

1. Summary of alternatives and justification for design
2. Recommended preferred alternative(s)
3. Path forward for final engineering and construction

FNI will present the summary recommendations from the PER to Client for consideration. Presentation and discussion to be of sufficient detail to allow Client to determine appropriate work to be conducted in the next phase of the project.

Task 6.00 Geotechnical Exploration and Analysis

- See Terracon's Scope of Work (Attached)
- FNI will coordinate the findings of the soil exploration and testing with Terracon. Information ascertained will be used as a basis to perform stability and slope analyses, understand strength parameters of the soils (for selected alternatives), and understand the erodibility potential of the soils.

Deliverables

1. Draft Preliminary Engineering Report, within 4 months of NTP. This will include one (1) electronic copy and three (3) bound hardcopies.
2. Final Preliminary Engineering Report, within 1 month of receiving Client's comments to Draft Preliminary Engineering Report. This will include one (1) electronic copy and five (5) hardcopies.



July 12, 2016

Freese and Nichols, Inc.
10497 Town and Country Way, Suite 600
Houston, Texas 77024

Attn: Mr. Cody Cockroft, P.E.

Re: Cost Estimate for Geotechnical Engineering Services
SH 99 at Brazos River Erosion Mitigation
Fort Bend County, Texas
Terracon Document No. P92165413

Dear Mr. Cockroft:

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

1.0 PROJECT INFORMATION

Item	Description
Location	The site lies along the northern and southern banks of the Brazos River at its intersection with State Highway 99 in Fort Bend County, Texas.
Current ground cover ¹	Grass and weeds. The southern bank of the Brazos River appears to be heavily wooded.
Existing topography ²	The site slopes downward towards the Brazos River with severe erosion along each bank. Recent flooding has accelerated the erosion of the banks.

1. Based on available aerial photographs and a site visit on July 11, 2016.

2. Based on information provided by Freese and Nichols, Inc.

We understand that this project is not required to be performed in accordance with TxDOT guidelines. If our understanding of the project is not accurate, please let us know so that we may adjust our scope of services, if necessary.



Terracon Consultants, Inc. 11555 Clay Road, Suite 100 Houston, TX 77043
P [713] 690 8989 F [713] 690 8787 terracon.com

Geotechnical

Environmental

Construction Materials

Facilities

2.0 SCOPE OF SERVICES

A brief summary of the services to be provided by Terracon is provided in the following paragraphs.

Field Program. The field program is planned to consist of drilling four test borings to a depth of about 130 feet near the State Highway 99 bridge on the northern and southern banks of the Brazos River. The total drilled footage is planned to be 520 feet. The planned locations of the borings are shown in the attached Proposed Boring Plan.

The borings will be located in the field by use of a hand-held Global Positioning System (GPS) unit with an accuracy of approximately ± 25 feet. The layout of the borings locations will be approximate. Boring depths will be measured from existing grade. Terracon will provide the latitude and longitude of the borings on the Boring Logs based on information obtained from the hand-held GPS unit. The boring locations will be staked upon completion of drilling. We request that survey information including Northing, Easting, and surface elevation, be provided for the drilled boring locations following completion of the field program.

The drilling services for this project will be performed by a drilling subcontractor or Terracon's in-house drillers. During drilling, soil samples will generally be collected utilizing either open-tube samplers or the Standard Penetration Test. Borings will be sampled continuously to a depth of 20 feet and at 5-foot increments thereafter. Logging of the borings will be performed by an experienced geotechnical field technician under the supervision of a Terracon geotechnical engineer. Once the samples have been collected and classified in the field, they will be properly prepared and placed in appropriate sample containers for transport to our laboratory. Upon completion of drilling, the borings will be backfilled with bentonite grout. Excess soil cuttings will be distributed around the borehole.

This document assumes that the site can be accessed with all-terrain vehicle (ATV) mounted drilling equipment during normal business hours and does not include services associated with obtaining right-of-entry permits, surveying of boring locations, clearing, location of on-site underground utilities, or the use of special equipment for unusually soft or wet surface conditions. If such conditions are known to exist on the site, Terracon should be notified so that we may adjust our scope of services, if necessary.

Terracon will take reasonable efforts to reduce damage to the property, such as rutting of the ground surface. However, in the normal course of our work, some such disturbance could occur. We have not budgeted to restore the site beyond backfilling our boreholes. If there are any restrictions or special requirements regarding this site or exploration, these items should be known prior to commencing field work.

Terracon will notify Texas811, a free utility location service, prior to our drilling program to help locate public utilities within dedicated public easements. If underground utilities are known to exist

on the site, Terracon should be notified so that we may review utility plans to help avoid the existing lines. Terracon cannot be responsible for utilities for which we are unaware or that are improperly located in the field.

Laboratory Testing. The sample classifications will be reviewed and a laboratory testing program will be assigned which will be specific to the project requirements and the subsurface conditions observed. The testing program could include, but may not be limited to, moisture contents, unit dry weights, Atterberg Limits, sieve analyses, hydrometer tests, crumb tests, pinhole dispersion tests, compressive strength tests, and consolidation-undrained triaxial tests with pore pressure measurements.

Data Report and Additional Consultation. The results of our field and laboratory programs will be evaluated by a professional geotechnical engineer licensed in the State of Texas. Based on the results of our evaluation, a data report will be prepared that details the results of the testing performed, provides Boring Logs, and a Boring Location Plan.

We understand that additional geotechnical engineering consultation will be requested from us following the submittal of our data report with respect to items that have not yet been identified. We have included an estimated amount in a separate line item for this consultation in our scope of services. Once a detailed request has been provided to Terracon for this consultation, we will reevaluate our scope of services and submit a supplemental cost estimate, if necessary.

Schedule. We can begin the field exploration program within five to seven working days after authorization to proceed, if site and weather conditions permit. We anticipate that the requested field program can be completed within four to five days. We anticipate completion of our services and submittal of our final report within three to four weeks after completion of our field services. In situations where information is needed prior to submittal of our report, we can provide verbal information or recommendations for specific project requirements after we have completed our field and laboratory programs.

3.0 COMPENSATION

For the scope of work discussed above, we estimate the following costs.

Item	Estimated Cost
Field Exploration	\$21,700
Laboratory Tests	\$13,700
Data Report	\$2,600
Total	\$38,100

For the additional consulting services request, we estimate an additional cost of **\$9,400**. The cost of our services will not exceed these amounts without prior approval of the client. Additional consultation (such as consultation during the final design phase, attendance on a project conference call, engineering analysis, review of project documents, etc.) requested will be performed on a time-and-materials basis according to the unit rates provided below. The fee to provide additional consultation services will be in excess of the above provided fee to complete the geotechnical services and will not be incurred without prior approval of the client.

Unit Rates		
Description	Unit	Unit Price
Principal	Hour	\$180
Project Manager	Hour	\$150
Project Engineer	Hour	\$130
Staff Engineer	Hour	\$115

4.0 AUTHORIZATION

Environmental Considerations. In an effort to reduce the potential for cross-contamination of subsurface media and exposure of site workers to contaminants that might be present at the site, Terracon requests that prior to mobilization to the site, the Client inform Terracon of known or suspected environmental conditions at or adjacent to the site. If adverse environmental conditions are present, additional expenses may be necessary to properly protect site workers and abandon boreholes that penetrate affected groundwater-bearing units. If an environmental assessment has not been conducted at the site, Terracon can submit a scope document for the performance of a Phase I Environmental Site Assessment (ESA).

If Terracon is not informed of potentially adverse environmental conditions prior to the geotechnical services, Terracon will not be responsible for cross-contamination of groundwater aquifers, soil contamination, or any modification to the environmental conditions to the site that may occur during our geotechnical services. The geotechnical scope of services described above is based on our assumption that the site does not pose environmental risks to the personnel conducting the geotechnical exploration services.

Agreement for Services. This project will be performed under a mutually agreed upon client's Agreement for Services which will be signed once the budget estimate is accepted and upon completion of review by our legal department. We will provide you with our comments once our review is completed.

Cost Estimate Geotechnical Engineering Services
SH99 at Brazos River Erosion Mitigation ■ Fort Bend County, Texas
July 12, 2016 ■ Terracon Document No. P92165413
Page 5

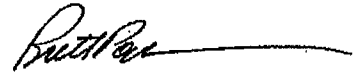
Terracon

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

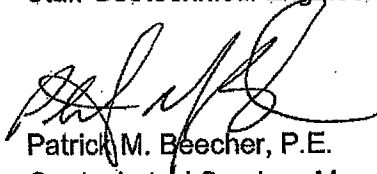
Sincerely,
Terracon Consultants, Inc.
(Texas Firm Registration No. F-3272)



Adam White, E.I.T.
Staff Geotechnical Engineer



Brett A. Pope, P.E.
Project Manager

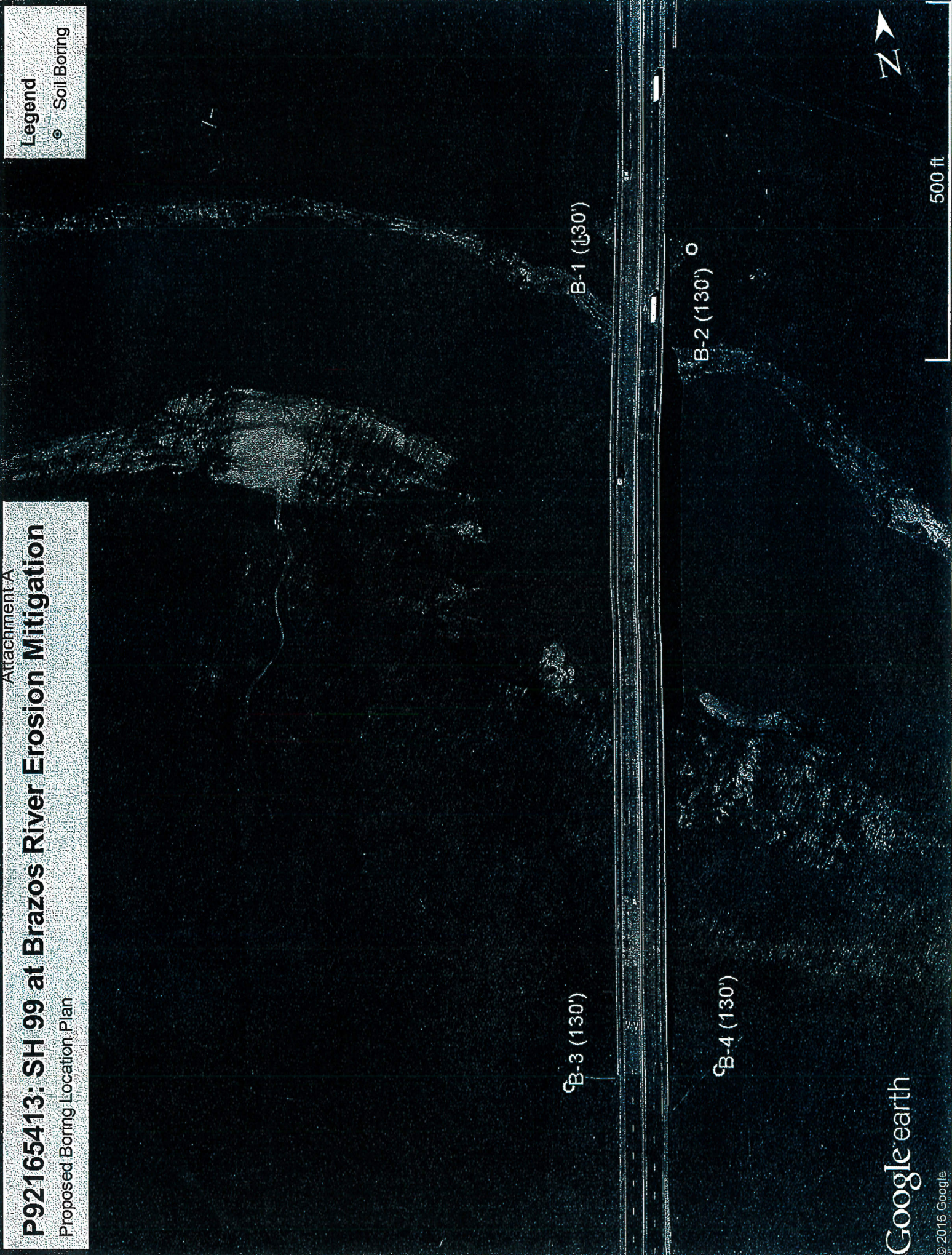


Patrick M. Beecher, P.E.
Geotechnical Services Manager

Attachment: Proposed Boring Location Plan

Attachment A
P92165413: SH 99 at Brazos River Erosion Mitigation
Proposed Boring Location Plan

Legend
○ Soil Boring



ATTACHMENT B
SUMMARY
COMPENSATION FOR SCOPE OF SERVICES
LUMP SUM

TASK		Freese & Nichols	Terracon (Geotech)	Topo & Bathymetric Survey Subconsultants*	Pallisades Subconsultant*	Totals
1	Project Management / General Items	\$ 17,459.23	\$ -	\$ -	\$ -	\$ 17,459.23
2	Data Collection	\$ 4,333.14	\$ 47,500.00	\$ 30,000.00	\$ 15,000.00	\$ 96,833.14
3	Environmental Services	\$ 7,496.58	\$ -	\$ -	\$ -	\$ 7,496.58
4	Alternatives Assessment / PER	\$ 76,614.16	\$ -	\$ -	\$ -	\$ 76,614.16
5	Strategic Plan and Recommended Actions	\$ 4,837.56	\$ -	\$ -	\$ -	\$ 4,837.56
6	Geotechnical	\$ 6,385.54	\$ -	\$ -	\$ -	\$ 6,385.54
	Expenses	\$ 527.50	\$ -	\$ -	\$ -	\$ 527.50
	TOTALS	\$ 117,653.71	\$ 47,500.00	\$ 30,000.00	\$ 15,000.00	\$ 210,153.71

* Note: the amounts are estimated but should not exceed.

ATTACHMENT B
COMPENSATION FOR SCOPE OF SERVICES

Task	Employee	Cody Crockett	Cris Weber	Dan Gisa	Stephanie Coffman	Patrick Miles	Grady Hillhouse	Peter Bartels	Micah Hargrave	Jon Jordan	Total Hours	Total Labor Effort
	Hourly Bill Rate	\$282.22	\$164.43	\$253.89	\$149.24	\$144.90	\$133.60	\$198.14	\$145.84	\$111.83		
1	Project Management / General Items											
	Internal & Client kick-off meeting	2	3	2	2	1	1	1			12	
	Site Visit	10	10	5	5						30	
	Project scheduling and coordination	5	5	1	2	1	1	4			19	
	Coordination with all subconsultants	12	12									
	sub-total hours	29	30	8	9	2	2	5			61	
	labor cost	\$ 7,604.38	\$ 4,932.90	\$ 2,031.12	\$ 1,343.16	\$ 289.80	\$ 267.19	\$ 990.68	\$ -	\$ -		\$ 17,459.23
2	Data Collection											
	Data gaps and needs assessment	3	4								7	
	Review of available data	3	4								7	
	Topographic & Bathymetric Survey(s)	3	4								7	
	sub-total hours	9	12								21	
	labor cost	\$ 2,359.98	\$ 1,973.16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 4,333.14
3	Environmental Services											
	Permitting Options			13							13	
	Permitting Memo			5	2						7	
	Emergency Repair Review and Meeting with USACE			8	4						12	
	sub-total hours			26	6						32	
	labor cost	\$ -	\$ -	\$ 6,601.14	\$ 895.44	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 7,496.58
4	Alternatives Assessment / PER											
	Background (geo and geopolitical)	3	2								5	
	Structural Review	1	2					72		40	115	
	H&H	2	2			40	40				84	
	Geomorphology				16						16	
	2 conceptual alternatives for North; 2 for south	4	8	4	12	4	8	2	8	60	110	
	conceptual level OPCC & schedule	2	4	2	8	4	12	8			40	
	PER initial draft completion	2	13	4	8	4	16	4	12		63	
	PER report internal QA/QC, then client review	2	5		2	1	4	4			18	
	Final PER (with client comments)	1	5	2	6	1	4	4	4		27	
	Final PER QA/QC	2	2		4	1	2	2			13	
	sub-total hours	19	43	12	56	55	86	96	24	100	491	
	labor cost	\$ 4,982.18	\$ 7,070.49	\$ 3,046.68	\$ 8,357.44	\$ 7,969.50	\$ 11,499.17	\$ 19,020.96	\$ 3,495.24	\$ 11,182.50		\$ 76,614.16
5	Strategic Plan and Recommended Actions											
	Present summary of recommendations	3	4		4	2					13	
	Path forward meeting	2	2		2	2					8	
	Next phase scope/fee	1	4		1	1					6	
	sub-total hours	6	10		6	5					27	
	labor cost	\$ 1,573.32	\$ 1,644.30	\$ -	\$ 895.44	\$ 724.50	\$ -	\$ -	\$ -	\$ -		\$ 4,837.56
6	Geotechnical											
	Coordination and review geotech results	8						4	24		36	
	sub-total hours	8						4	24		36	
	labor cost	\$ 2,097.76	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 792.54	\$ 3,495.24	\$ -		\$ 6,385.54
		59	83	46	77	62	88	105	48	100	668	\$ 117,126.21
		\$ 15,471	\$ 13,648	\$ 11,679	\$ 11,491	\$ 8,984	\$ 11,756	\$ 20,804	\$ 6,990	\$ 11,183		

Expenses	Miles	B&W (sheet)	Color (sheet)	Total Exp
Mileage / Site Visits	500			\$ 270
Report / Printing		1,200	550	\$ 258
				\$ -
				\$ -
	500	1,200	550	\$ -
	\$ 270	\$ 120	\$ 138	\$ -
				\$ 528

ATTACHMENT C

The Engineer shall furnish certificates of insurance to the FBGPTRA evidencing compliance with the insurance requirements hereof. Certificates shall indicate name of the Engineer, name of insurance company, policy number, term of coverage and limits of coverage. The Engineer shall cause its insurance companies to provide the FBGPTRA with at least 30 days prior written notice of any reduction in the limit of liability by endorsement of the policy, cancellation or non-renewal of the insurance coverage required under this Agreement. The Engineer shall obtain such insurance from such companies having a Best's rating of B+/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:

- a. Workers' Compensation insurance in accordance with the laws of the State of Texas, or state of hire/location of Services, and Employers' Liability coverage with a limit of not less than \$1,000,000 each employee for Occupational Disease, \$1,000,000 policy limit for Occupational Disease; and Employer's Liability of \$1,000,000 each accident.
- b. Commercial General Liability insurance including coverage for Products/Completed Operations, Blanket Contractual, Contractors' Protective Liability Broad Form Property Damage, Personal Injury/Advertising Liability, and Bodily Injury and Property Damage with limits of not less than:
 - \$3,000,000 general aggregate limit
 - \$2,000,000 each occurrence, combined single limit
 - \$2,000,000 aggregate Products, combined single limit
 - \$2,000,000 aggregate Personal Injury/Advertising Liability
 - \$50,000 Fire Legal Liability
 - \$5,000 Premises Medical
- c. Business Automobile Liability coverage applying to owned, non-owned and hired automobiles with limits not less than \$1,000,000 each occurrence combined single limit for Bodily Injury and Property Damage combined.
- d. Umbrella Excess Liability insurance written as excess of Employer's Liability, with limits not less than \$3,000,000 each occurrence combined single limit.
- e. Professional Liability insurance with limits not less than \$2,000,000 each claim and \$4,000,000 annual aggregate.

The FBGPTRA and the FBGPTRA's Directors shall be named as additional insureds to all coverages required above, except for those requirements in paragraphs "a" and "e." All policies written on behalf of the Engineer shall contain a waiver of subrogation in favor of the FBGPTRA and the FBGPTRA's Directors, with the exception of insurance required under paragraph "e."

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

1 of 1

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY CERTIFICATION OF FILING

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

Freeze and Nichols, Inc.
Fort Worth, TX United States

Certificate Number:
2016-82262

Date Filed:
07/11/2016

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

Fort Bend Grand Parkway Toll Road Authority

Date Acknowledged:
7/14/2016

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

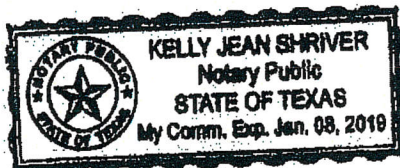
Bridge Erosion
SH 99 and Brazos River Bridge Erosion - Fort Bend Grand Pkwy Toll Road Authority

4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary
	Gooch, Tom	Fort Worth, TX United States	X	
	Hatley, Tricia	Oklahoma City, OK United States	X	
	New, John	San Antonio, TX United States	X	
	Milrany, Cindy	Fort Worth, TX United States	X	
	Payne, Jeff	Dallas, TX United States	X	
	Nichols, Mike	Austin, TX United States	X	
	Coltharp, Brian	Fort Worth, TX United States	X	
	Pence, Robert	Fort Worth, TX United States	X	
	Herchert, Robert	Fort Worth, TX United States	X	

5 Check only if there is NO Interested Party. ☐

6 AFFIDAVIT

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.



Susanne M. Johnson
Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said Susanne M. Johnson, this the 11th day of July, 2016, to certify which, witness my hand and seal of office.

Kelly Jean Shriver
Signature of officer administering oath

Kelly Jean Shriver
Printed name of officer administering oath

Notary Public
Title of officer administering oath