

**SUPPLEMENTAL AGREEMENT NO. 2
TO
AGREEMENT OF July 26, 2016
FOR
ENGINEERING SERVICES AGREEMENT for
Fort Bend Grand Parkway Toll Road, Segment D, Brazos River Erosion Study**

This Supplemental Agreement is made and entered into this 19th day of April, 2017, and modifies the ENGINEERING SERVICES AGREEMENT made with Freese and Nichols, Inc., dated July 26, 2016 for the study of the Brazos River erosion at Segment D, as amended.

The agreement is hereby modified as follows:

1. The first sentence of Section 2.a is replaced with the following sentence:

“The Maximum Compensation under this contract is \$659,767.25.”

2. The second paragraph of Section 2.a is replaced with the following paragraph:

“Compensation for performance of services within the Scope of Services described in Attachment A, and Exhibit A-1 thru A-2 shall be in accordance with the billing rates shown in Attachment B. The compensation for additional services described in Exhibit A-2 is \$398,066.46 as shown in Exhibit B-2. Progress payments for work detailed in Attachment A and Exhibit A-1 thru A-2 will be made when the Contractor has attained a level of completion equal to or greater than the agreed upon milestones of completion in the reasonable opinion of FBGPTRA.”

3. The Scope of Services shown in Attachment A shall be expanded to include Exhibit A-2, attached hereto.
4. The Compensation for Scope of Services shown in Attachment B shall be expanded to include Exhibit B-2, attached hereto.
5. Section 3 is replaced with the following paragraph:

“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 December 31, 2017.”

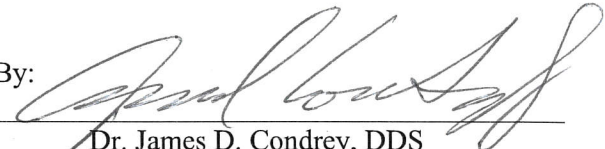
This Supplemental Agreement does not alter, modify, or otherwise change any part of the Agreement, except as specifically stated in this Supplemental Agreement.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, this Supplemental Agreement is hereby executed as of the date first set forth above.

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

By:


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

ATTEST:

By


Secretary, Board of Directors

By: 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.: _____

EXHIBIT A-2
Fort Bend Grand Parkway Toll Road Authority
Brazos River SH 99 Grand Parkway Bridge Stopgap Measure Repairs
Engineering Design and Procurement
Scope of Services
April 10, 2017

Freese and Nichols, Inc. (FNI) presents this scope of work (SOW) for professional services concerning the Emergency Repairs for the northern abutment for the State Highway 99 Grand Parkway Bridge at Segment D as recommended in FNI's December 13, 2016 draft Preliminary Engineering Report titled, "Brazos River SH 99 Bank Erosion Preliminary Engineering report". The north and south banks of the Brazos River at the SH 99 bridge have sustained damage from the natural hydrodynamic forces of the Brazos River over time, but the severity of the damage has been escalated by recent historical flood events. These events, e.g., Memorial Day 2015, Memorial Day 2016, and Tax Day 2016 have greatly contributed to the loss of more than 100 feet of north bank adjacent to the bridge, and the continued degradation is projected to continue. This continuation places the north abutment of the bridge in jeopardy.

- In general, this SOW outlines the professional services required to design a tangent wall around the northern abutment of the bridge (existing geometry) as well as facilitate the expansion of the bridge in the future (by others). The Northern Abutment Tangent Wall: 75-ft to 100-ft deep by ~5' diameter tangent wall located adjacent to abutment 9 extending across the 300-ft ROW of the SH99 bridge. The east and west extent will likely be flanked in the northern direction to form a horseshoe pattern around the substructure. At each of the flank locations, an approximate 400-ft east and west extension will be included to protect the toe of the levee.

TASK 1.00 Project Management / General Items (Basic Services)

Project management and general items for the engineering design phase of the project will include:

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 changes to existing site conditions related to:
 - a. Previous geotechnical and environmental investigations access;
 - b. Construction constraints and river access
 - c. Items that may impact engineering design
3. Provide progress updates with the Client during the Engineering Design phase describing:
 - a. Completed action items
 - b. Project schedule updates
 - c. Requests for information from third parties
 - d. New action items
4. Site evaluation visits during design phase for soil erosion monitoring
5. Project coordination and scheduling
6. Coordination of 60%, 90% and Issued for Bid drawings and technical specifications to Client. Include also an Opinion of Probable Construction Cost for each milestone deliverable.
7. Provide for a topographic survey of the 300 ft ROW of the bridge along the northern bank.
8. Provide for a geotechnical exploration and laboratory analysis for three borings (two in the river and one near the northern abutment. See Terracon's proposal (attached).

TASK 2.00 Engineering Design (Basic Services)

FNI shall produce the 60%, 90% and Issued for Bid documents for project design components described above. The engineering design effort will provide details for the basis of design for the tangent wall for the northern abutment and will include complete Issue for Bid Plans and Technical Specifications. The engineering design will include:

1. Tangent Wall design north approach slab, including:

a. Civil Design:

- i. Coordinate the geometric alignment of the wall with structural and geotechnical engineers which would produce the greatest benefit to the Client and the Client's partner with the understanding that the project's construction cost shall not exceed \$6,000,000
- ii. Develop SWPPP plans and specifications
- iii. Develop surface water drainage features to convey water away from the tangent wall
- iv. Develop a below grade pressure relief well system or a chimney drain system for the tangent wall to reduce the hydrostatic pressures behind the wall. For the below grade pressure relief system, consider the application and costs associated with either a lower and upper interceptor system

b. Structural Design

- i. Coordinate with Geotechnical and Civil and Client with regards to preferred design at bridge.
- ii. Each side of bridge coordinate with Geotechnical and Civil for preferred wall layout and design.
- iii. Based on input from Geotechnical and Civil Design effort, design a tangent pile wall members.
- iv. Develop and implement structural model analysis
- v. Provide structural details for necessary elements

c. Geotechnical Design

- i. Provide geometric/constructive evaluation of the preferred design
- ii. Analyze soil investigation results to evaluate soil conditions and design parameters.
- iii. Develop an LPILE model to design the tangent pile wall and evaluate its response under multiple loading conditions.
- iv. Develop a GeoStudio model to analyze the global stability of the slope reinforced with designed tangent pile wall.

The 60 % design submittal is intended to ensure that funding limitations are not being exceeded and that the drawings, design analysis, and specifications are proceeding in accordance with the accelerated schedule and sufficient to obtain construction contractor input for constructability and approximate costs. The 60 % submittals will include: design analysis completed to 90%; wall layout and design drawings (plan sheets) showing wall length and tangent pile wall (drill shaft diameter, depth and spacing); drainage drawings completed to at least 50%; and 60% drawings addressing construction phasing and project quantities; and technical specifications completed to greater than 60% with potential special specifications identified.

The 90% design submittal represents complete construction ready project design plans and specifications except for the incorporation of any review comments resulting from the client review of the submittal and the FNI QAQC process. The 90% submittals may be signed and sealed and will include: design analysis with all Plans and Specification items, including layouts, details, quantities, and special specifications; all

backup material previously submitted and revised will be included, as necessary; all design calculations and explanatory material giving the design rationale for any design decisions.

TASK 3.00 Project Procurement Services (Basic Services)

FNI shall develop a Bid Documents Package sufficient for soliciting bids from general construction contractors. This does not include the Front End documents (Division 0 and Division 1). FNI will provide the technical specifications and the drawings to the Client and the Client will be responsible for coordinating the technical specifications with the Front End Documents. FNI shall:

1. Attend up to two (2) meetings during the bid phase with the client to discuss potential bidders, bidder Request for Information, addenda and Client questions as needed.
2. Client will maintain information on entities that have been issued a set of bid documents. Distribute information on plan holders to interested contractors and vendors on request.
3. Assist the Client by responding to questions and interpreting bid documents. Client will facilitate the issuance of the responses to the bidders.
4. Assist the Client in conducting a pre-bid conference and site visit for the construction projects and coordinate responses with Client. Response to the pre-bid conference will be in the form of addenda issued after the conference.

The Bid Package submittal represents a complete design (design analysis, specifications, and drawings), including incorporating client review comments resulting from the review of the 90% design submittal and final FNI QAQC.

Note: FNI services would conclude at the tabulation and analysis of bids. FNI services do not include construction phase services which include issuance of conformed documents and Notice to Proceed.

Deliverables

1. 60% Design Documents (drawings and technical specifications) for construction of the preferred design alternative, (by June 15, 2017). This will include one (1) electronic copy.
2. 90% Documents (drawings and technical specifications) for construction of the preferred design alternative, (by July 15, 2017) pending Client's review comments of 60% Design Documents.
3. Bid Package (drawings and technical specifications) sufficient for construction procurement of the preferred design alternative, (by July 31, 2017) pending Client's review of 90% Design Documents.

Lump Sum Fee Breakdown

TASK 1.00 Project Management / General Items	\$47,631
TASK 2.00 Tangent Wall Design	\$205,507
TASK 3.00 Bid Phase Services (Procurement)	\$7,366.24
Subconsultants	
Geotechnical Investigation	\$89,010
Topographic Survey	\$27,500
Expenses	\$1,050
Contingency (to be used as agreed upon with FBGPTRA)	\$20,000

EXHIBIT B-2
SUMMARY
FOR SCOPE OF SERVICES
LUMP SUM

Task	Employee	Lead / Technical	Group Manager	Engineer V	Project Control	Engineer IV	Group Manager	Engineer V	Engineer III	Technician IV	Engineer VII	Engineer VI	Engineer IV	Engineer III	Total Hours	Total Labor Effort
Project Management / General Labor																
1.00	Hourly Bill Rate		\$328.02	\$287.46	\$172.94	\$100.68	\$154.21	\$272.30	\$206.61	\$137.10	\$134.09	\$254.70	\$232.86	\$138.08	\$131.81	
1	Kickoff Meeting & Division Scope, Budget, Schedule		4	4											8	
2	Site Visit - Introduction	8	8												24	
3	Provide Enclosure Details			4	12					8		8			16	
4	Site Evaluation Visit - Division plans (2 visits)			8	12										24	
5	Project Coordination and scheduling			12	12										40	
6a	Complete Structural Framework (60% 30% Bld)	4	4	32	4										5	
6b	Complete of Enclosure Code (60% 30% Bld)	2	2	16						64					7	
6c	Complete of Enclosure Code (60% 30% Bld)	1	1	8											5	
7	Coordinate with Division - mechanical	8	1	6		28	0	8	64	8	0	8	0	0	108	
	Sub-total Hours	12	20	110		0	0	8		8	0	8	0	0		
	labor cost	3936	5749	19023	2818	0	0	1653	11516	1073	0	1863	0	0		\$47,637.01
2.00 Interior Wall Details																
A	General Division															
I	Develop wall geometric alignment	6	4	8		12			24	16					70	
II	Develop SUDS details			2		4			8	4					18	
IIIa	Develop doors water drainage features - study			2		4			8						14	
IIIb	Develop surface water drainage features for			2		8			12	8						
IVa	Develop a below grade perimeter relief wall system			4		12			32						48	
IVb	Develop a below grade perimeter relief wall system (internal) for perimeter design - details (1 Sheet)			2		16			60	40					118	
V	Wall slabs & soffits slabs (4 Sheets)	12	8	24		60			80	80					262	
VI	Develop general notes/special notes/specifications (plan sheets and spec sheets)	1	1	4		12			16						34	
VII	Provide Plan Set Cover Page			1					2	2						
VIII	Provide Plan Set Vicinity Map			1						2						
B. Structural Division																
I	Coordination with geotechnical, civil and plant on reinforced design at bridge						6	24							30	
II	Coordination with with geotech. and civil for preferred wall layout and design on either side of bridge						6	60							108	
III	Develop interior slab wall members						6	60		40					108	
IV	Develop and implement structural model analysis						1	40		80					108	
V	Provide structural detail sheet (1 Sheet)						1	24							41	
C. Geotechnical Division																
I	Provide geotechnical evaluation/constructive														108	
II	Analysis and investigation results										8		40	60	108	
III	Develop a Lateral Load model										2		16	40	68	
IV	Develop a Crestside model to analyze global										1		16	40	68	
V	Provide and provide load sheets (1 Sheet)	19	13	50	0	128	20	208	244	272	15	0	112	224	21	
	Sub-total Hours	13	13	50	0	128	20	208	244	272	15	0	112	224	1,305	
	labor cost	6332	3737	8647	0	18739	5446	43974	33461	36471	3820	0	15464	28923		\$309,807.33
3.00 Project Procurement																
I	Material and 2 materials delivered to jobs		8	8											16	
2	Material and 2 materials delivered to jobs		8	8											16	
3	Material and 2 materials delivered to jobs		8	8											16	
4	Material and 2 materials delivered to jobs		8	8											16	
	Sub-total Hours	0	16	16	0	0	0	0	0	0	0	0	0	0	32	
	labor cost	0	4599	2767	0	0	0	0	0	0	0	0	0	0		\$7,368.74
	TOTAL HOURS	31	49	176	28	128	20	216	328	280	15	8	112	224	1,615	
	TOTAL LABOR	10,169	14,035	30,637	2,618	18,739	5,446	44,627	44,867	37,454	3,820	1,863	15,464	28,923		\$309,807.33
Expenses																
	Mileage / Site Visits		652	0.54	0.10	0.25	0.40									
	Material / Labor			1,200		500	12									
	Subtotal Expenses	\$	382.08	\$	120.00	\$	125.00	\$	4.80	\$	450.00					\$
																1,052

EXHIBIT B-2
SUMMARY
COMPENSATION FOR SCOPE OF SERVICES
LUMP SUM

TASK	Freese & Nichols	Terracon	Gorrondomina	Totals
1 Project Management	\$47,631.01	\$0.00	\$0.00	\$47,631.01
2 Tangent Wall Design	\$205,507.33	\$0.00	\$0.00	\$205,507.33
3 Procurement	\$7,366.24	\$0.00	\$0.00	\$7,366.24
4 Geotechnical Investigation	\$0.00	\$89,010.00	\$0.00	\$89,010.00
5 Topographic Survey	\$0.00	\$0.00	\$27,500.00	\$27,500.00
6 Contingency	\$20,000.00			\$20,000.00
Expenses	\$1,051.88			\$1,051.88
TOTALS	\$281,556.46	\$89,010.00	\$27,500.00	\$398,066.46

Project Plan Set Index

Sl#	Description
1	Cover Page
2	Vicinity Map
3	General Notes
4	Special Notes
5	Plan View and Elevations
6	Details, Plan and Elevations
7	Details, Plan and Elevations
8	Details, Plan and Elevations
9	Surface Drainage - Civil
10	Surface Internal
11	Geotechnical Details
12	Structural Details

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.

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

Certificate Number:
2017-191748

Date Filed:
04/12/2017

Date Acknowledged:

4/12/17

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

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.

Brazos River
Supplemental Agreement - Brazos River SH99 Tangent Wall services

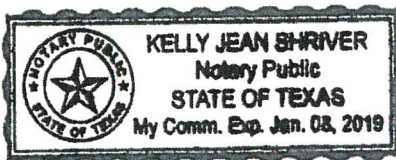
4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary
	Hatley, Tricia	Oklahoma City, OK United States	X	
	New, John	San Antonio, TX United States	X	
	Payne, Jeff	Dallas, TX United States	X	
	Milrany, Cindy	Fort Worth, TX United States	X	
	Nichols, Mike	Fort Worth, TX United States	X	
	Pence, Robert	Fort Worth, TX United States	X	
	Coltharp, Brian	Fort Worth, TX United States	X	
	Gooch, Tom	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 12th day of April, 2017, 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