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**SECOND AMENDMENT TO AGREEMENT BETWEEN FORT BEND COUNTY AND  
H J CONSULTING, INC. FOR PROFESSIONAL ENGINEERING SERVICES**

(Koeblen Rd, Seg 1 – Project No. 20107)

THIS SECOND AMENDMENT (“Second Amendment”) is entered into by and between Fort Bend County, Texas (“County”), a political subdivision of the state of Texas, and HJ Consulting, Inc. (“HJ CONSULTING”), a Texas corporation. County and HJ CONSULTING are hereinafter collectively referred to as the “Parties” and each individually a “Party.”

WHEREAS, the Parties previously entered into that certain agreement on July 13, 2021 (the "Agreement") for Professional Engineering Services for certain improvements to Koeblen Road pursuant to SOQ 14-025 under Mobility Bond Project No. 20107; and

WHEREAS, the Agreement was subsequently amended on August 2, 2022 (the “First Amendment”); and

WHEREAS, by execution of this Second Amendment, the Parties desire to amend the Agreement to provide for additional services by HJ CONSULTING, to increase the total Maximum Compensation for the completion of such services, and to otherwise ratify and confirm all the terms and conditions as set forth therein.

NOW, THEREFORE, in consideration of the foregoing, the Parties do mutually agree that the Agreement between the Parties is hereby amended as follows:

1. **Scope of Services.** County shall pay HJ CONSULTING an additional One Hundred Twenty Five Thousand Three Hundred Sixty Seven and 00/100 Dollars (\$125,367.00) for the performance and completion of additional services as described in HJ CONSULTING's Proposal dated April 13, 2023 (the "Services") attached hereto as Exhibit "A-2" and incorporated by reference for all intents and purposes.
2. **Limit of Appropriation.** HJ CONSULTING understands and agrees that the Maximum Compensation payable to HJ CONSULTING for Services rendered under this Agreement is hereby increased to an amount not to exceed One Million Four Thousand Seventy Six and 50/100 Dollars (\$1,004,076.50) authorized as follows:

\$864,994.50 under the Agreement  
\$13,715.00 under the First Amendment  
\$125,367.00 under this Second Amendment

In no event shall the amount paid by County under this Agreement exceed the Maximum Compensation without a County approved change order. HJ CONSULTING 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 One Million Four Thousand Seventy Six and 50/100 Dollars (\$1,004,076.50) specifically allocated to fully discharge any and all liabilities County may incur under the Agreement.

HJ CONSULTING does further understand and agree, said understanding and agreement also being of the absolute essence of the Agreement, that the total Maximum Compensation that HJ CONSULTING may become entitled to and the total maximum sum that County may become liable to pay to HJ CONSULTING under the Agreement shall not under any conditions, circumstances, or interpretations thereof exceed One Million Four Thousand Seventy Six and 50/100 Dollars (\$1,004,076.50).

3. **Certain State Law Requirements for Contracts.** The contents of this Section are required by Texas law and are included by County regardless of content For purposes of Sections 2252.152, 2271.002, and 2274.002, Texas Government Code, as amended, HJ CONSULTING hereby verifies that HJ CONSULTING and any parent company, wholly owned subsidiary, majority-owned subsidiary, and affiliate:
  - A. Unless affirmatively declared by the United States government to be excluded from its federal sanctions regime relating to Sudan or Iran or any federal sanctions regime relating to a foreign terrorist organization, is not identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Section 806.051, 807.051, or 2252.153 of the Texas Government Code.
  - B. If employing ten (10) or more full-time employees and this Agreement has a value of \$100,000.00 or more, HJ CONSULTING does not boycott Israel and is authorized to agree in such contracts not to boycott Israel during the term of such contracts. "Boycott Israel" has the meaning provided in § 808.001 of the Texas Government Code.
  - C. If employing ten (10) or more full-time employees and this Agreement has a value of \$100,000.00 or more, HJ CONSULTING does not boycott energy companies and is authorized to agree in such contracts not to boycott energy companies during the term of such contracts. "Boycott energy company" has the meaning provided in § 809.001 of the Texas Government Code.
  - D. If employing ten (10) or more full-time employees and this Agreement has a value of \$100,000.00 or more, HJ CONSULTING does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and is authorized to agree in such contracts not to discriminate against a firearm entity or firearm trade association during the term of such contracts. "Discriminate against a firearm entity or firearm trade association" has the

meaning provided in § 2274.001(3) of the Texas Government Code. “Firearm entity” and “firearm trade association” have the meanings provided in § 2274.001(6) and (7) of the Texas Government Code.

4. **Recitals.** The recitals set forth above are incorporated herein by reference and made a part of the Agreement.
5. **Human Trafficking.** BY ACCEPTANCE OF THIS AGREEMENT, HJ CONSULTING ACKNOWLEDGES THAT FORT BEND COUNTY IS OPPOSED TO HUMAN TRAFFICKING AND THAT NO COUNTY FUNDS WILL BE USED IN SUPPORT OF SERVICES OR ACTIVITIES THAT VIOLATE HUMAN TRAFFICKING LAWS.
6. **Modifications and Conflict.** Except as modified herein, the Agreement shall remain in full force and effect and has not been otherwise modified or amended. If there is a conflict among documents that make up the Agreement, this Second Amendment shall prevail with regard to the conflict.

**{Execution Page Follows}**

**FORT BEND COUNTY, TEXAS**


  
County Judge KP George

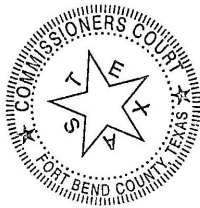
KP George, County Judge

June 27, 2023

Date

**ATTEST:**

  
Laura Richard, County Clerk



**APPROVED:**

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

**HJ CONSULTING, INC.**



Authorized Agent – Signature

**Harish Jajoo, PE**

Authorized Agent- Printed Name

**President**

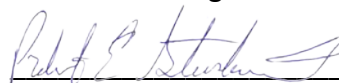
Title

**6-7-2023**

Date

**AUDITOR'S CERTIFICATE**

I hereby certify that funds are available in the amount of \$ 1,004,076.50 to accomplish and pay the obligation of Fort Bend County, Texas under this Agreement.



Robert E. Sturdivant,  
County Auditor

# **EXHIBIT A-2**

(April 13, 2023 Proposal Follows Behind)



April 13, 2023

Mr. Kevin Mineo, PE  
Binkley & Barfield, Inc.  
1710 Seamist Drive  
Houston, TX 77008

Re: Proposal for Additional Professional Services – Koeblen Road Segment 1  
FBC Project No. 20107

Dear Mr. Mineo:

HJ Consulting, Inc. (HJ) is pleased to submit this proposal for the Supplemental Drainage Impact Analysis for the above referenced project, as described below:

**Background:**

With the original and amended scope, we have performed DIA for two separate alternatives for two major systems. During PER, we were told to perform the impact analysis on Dry Creek for one of the alternatives (offsite routing for Systems B & C), where we are proposing a new outfall to Dry Creek. Sunrise Meadows system is a pumped detention system, and MUD Engineer for the project wants the proposed outflow to Sunrise Meadows system less than or equal to existing conditions in terms of peak flow as well as total flow. Another option we will be analyzing is the diversion of Systems B&C to System A.

Our additional **design & drainage analysis** is divided into following two Options:

**Option 1 (System A Outfall):**

1. Extract and use cross-sections from HEC RAS models for Dry Creek to model Dry Creek at least 100 feet upstream and downstream of proposed outfall at Dry Creek.
2. Review existing 1D/2D HEC RAS models for Dry Creek and extract data for use as tail water conditions in our study.
3. Update XPSWMM models to divert Systems B&C to System A, as an alternative.
4. Perform proposed conditions drainage analysis for proposed roadway including mitigation options for 5-year, and 100-year storm events with Atlas 14 rainfall intensities.

**Civil Engineers | Construction Managers**

4771 Sweetwater Boulevard, Suite 254, Sugar Land, Texas 77479  
832-338-3202 (C) | 832-553-3103 (F) | [www.hjconsultinginc.com](http://www.hjconsultinginc.com)

## **Koeblen Road Segment 1, FBC Precinct 4**

Proposal for Additional Professional Engineering Services

April 13, 2023

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5. Mitigation Options include a) Inline Detention, and b) Detention Pond
6. All analysis, modeling and submittal tasks will be performed in accordance with the latest editions of Fort Bend County Drainage District (FBCDD) criteria manual.
7. Coordinate and attend review meetings related to the change.
8. Report findings to the FBC.

If the findings from Option 1 state that the diversion of Systems B&C to System A is not feasible, then begin Option 2 with approval from FBC.

### **Option 2 (Offsite System B&C Outfall):**

1. Extract and use cross-sections from HEC RAS models for Dry Creek to model Dry Creek at least 100 feet upstream and downstream of proposed new outfall at Dry Creek.
2. Review existing 1D/2D HEC RAS models for Dry Creek and extract data for use as tail water conditions in our study.
3. Update XPSWMM models with alignment of offsite storm system to new outfall, for Systems B & C (West systems), as an alternative.
4. Perform proposed conditions drainage analysis for proposed roadway including mitigation options for 5-year, and 100-year storm events with Atlas 14 rainfall intensities.
5. Mitigation Option will be for Inline Detention.
6. All analysis, modeling and submittal tasks will be performed in accordance with the latest editions of Fort Bend County Drainage District (FBCDD) criteria manual.
7. Coordinate and attend review meetings related to the change.

### **Design & Reporting (Chosen Option):**

1. Revise the Drainage Impact Analysis (DIA) report.
2. Prepare preliminary P&P for new routing alternatives.
3. Perform drainage design computations for new routing alternatives.
4. Coordinate and attend review meetings related to the changes.

The following is **not** part of the scope of services:

1. Design of pumped outfalls or control structures if any

## **Koeblen Road Segment 1, FBC Precinct 4**

Proposal for Additional Professional Engineering Services

April 13, 2023

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### **Additional Services for Option 1:**

Additional Geotechnical Scope of Services (See attached – Alternatives 1 & 2 mentioned in the geotechnical proposal):

- A. Geotechnical study, drilling, and sampling (4- to 5-25 ft borings for inline detention & outfalls, and 2-25 ft borings for detention pond).
- B. The original proposal included optional services for detention ponds, which is now void.

### **Additional Services for Option 2:**

Additional Survey Scope of Services (See attached – Alternative 3 mentioned in the geotechnical proposal):

- A. Topographic Surveying Services: Topographic survey for new alignment.
- B. Parcel Acquisition, Abstracting and Title Research for 6 additional parcels.

Additional Geotechnical Scope of Services (See attached):

- C. Geotechnical study, drilling, and sampling (3-15 ft & 2-25 ft boring for offsite and inline detention, 1-25 ft & 1-35 ft borings for outfalls).
- D. The original proposal included optional services for detention ponds, which is now void.

Project Schedule: We anticipate the preliminary findings for Option 1 to be ready within 3 weeks. An additional 3 weeks will be needed if Option 2 is required. Preliminary drainage report will be submitted to FBC for review within 2 weeks following the completion of chosen option. For Option 1, Geotechnical services can be completed within approximately 70 days from NTP. For Option 2, Surveying services can be completed within 30 days from NTP, while geotechnical services can be completed approximately 60 days from NTP.



**Koeblen Road Segment 1, FBC Precinct 4**

Proposal for Additional Professional Engineering Services

April 13, 2023

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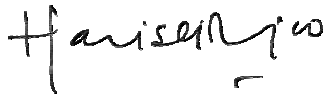
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The total fee for the additional scope is broken down as follows:

<b>Option 1</b>	<b>\$ 79,094</b>
Design and Analysis	\$ 58,880
Subconsultant Services	\$ 20,214
<b>Option 2</b>	<b>\$ 125,367</b>
Design and Analysis	\$ 90,715
Subconsultant Services	\$ 34,652

Breakdown of the various options is detailed in the attachment. If you have any questions, please give me a call, or send me an email.

Sincerely,



Harish Jajoo, PE, CFM  
President  
HJ Consulting, Inc.



**Summary of Additional Services**  
**Project Name: Koeblen Road Segment 1**  
**Project Limits: Spacek (Dog Leg) to FM 2977**  
**FBC Project # 20107**

**Option 1**

<b>1 Design &amp; Analysis (Option 1)</b>	<b>\$ 58,880.00</b>
Analysis (Option 1) (System A Outfall)	\$ 27,730.00
Design and Reporting	\$ 31,150.00
<b>1 Subconsultant Services</b>	<b>\$ 20,214.00</b>
Geotechnical	\$ 20,214.00

**Sub-Total Option 1: \$ 79,094.00**

**Options 1 & 2**

<b>1 Design &amp; Analysis (Options 1 &amp; 2)</b>	<b>\$ 90,715.00</b>
Analysis (Option 1) (System A Outfall)	\$ 27,730.00
Analysis (Option 2) (Offsite System B&C Outfall)	\$ 20,005.00
Design and Reporting	\$ 42,980.00
<b>2 Subconsultant Services</b>	<b>\$ 34,652.00</b>
Geotechnical	\$ 14,602.00
Survey	\$ 20,050.00

**Sub-Total Option 1 & 2: \$ 125,367.00**



**KOEBLER ROAD SEGMENT 1  
(DOG LEG TO FM 2977)  
FBC PROJECT# 20107  
HJ CONSULTING, INC.**

4/13/2023

**LEVEL OF EFFORT FOR ADDITIONAL SERVICES, APRIL 2023**

Employee Classification		No. of Sheets	Principal	Project Manager	QA/QC Engineer	Project Engineer	Graduate Engineer	CAD Technician	Admin	Subtotal Hours	Total
Labor Rate Per Hour			\$325.00	\$275.00	\$225.00	\$175.00	\$135.00	\$105.00	\$95.00		
TASK	TASK DESCRIPTION	ESTIMATED HOURS									
ADDITIONAL SERVICES											
Analysis (Option 1) (System A Outfall)											
1	Additional Drainage Impact Analysis										
1.1	Outfall Configuration at Dry Creek (System A & New Outfall, including Dry Creek Cross Sections)			6	2	24	9			41	\$ 7,515.00
1.2	Proposed System Models (Diversion of Systems B&C to System A Outfall)			4	2	36				42	\$ 7,850.00
1.3	Proposed Mitigation, including Inline Detention and Detention Pond Options			6	2	36				44	\$ 8,400.00
1.4	Research and review as built/record dwgs, reports, models and maps			1		4	4			9	\$ 1,515.00
1.5	Coordination and review meetings		2	4		4				10	\$ 2,450.00
Analysis (Option 1) (System A Outfall) SUBTOTAL			2	21	6	104	13			146	\$ 27,730.00
Analysis (Option 2) (Offsite System B&C Outfall)											
1	Additional Drainage Impact Analysis										
1.1	New Outfall Configuration at Dry Creek (Systems B&C), including Dry Creek Cross Sections			6	2	24	9			41	\$ 7,515.00
1.2	Proposed System Models (Systems B&C design modifications including new alignment to Dry Creek)			4	2	18				24	\$ 4,700.00
1.3	Proposed Mitigation using Inline Detention			4	2	18				24	\$ 4,700.00
1.4	Research and review as built/record dwgs, reports, models and maps			1		4	4			9	\$ 1,515.00
1.5	Coordination and review meetings		1	2		4				7	\$ 1,575.00
Analysis (Option 2) (Offsite System B&C Outfall) SUBTOTAL			1	17	6	68	13			105	\$ 20,005.00



**KOEBLER ROAD SEGMENT 1  
(DOG LEG TO FM 2977)  
FBC PROJECT# 20107  
HJ CONSULTING, INC.**

4/13/2023

**LEVEL OF EFFORT FOR ADDITIONAL SERVICES, APRIL 2023**

Employee Classification		No. of Sheets	Principal	Project Manager	QA/QC Engineer	Project Engineer	Graduate Engineer	CAD Technician	Admin	Subtotal Hours	Total
Labor Rate Per Hour			\$325.00	\$275.00	\$225.00	\$175.00	\$135.00	\$105.00	\$95.00		
TASK	TASK DESCRIPTION	ESTIMATED HOURS									
Design & Reporting (Option 1)											
1	DIA Report										
1.1	Update Drainage System Exhibits			2	1	2	4	8		17	\$ 2,505.00
1.2	Update DIA Report & Resubmit		1	8	4	16	32			61	\$ 10,545.00
2	Plan and Profile Sheets (Drainage)	6									
2.1	Existing Features in Plan & Profile										\$ -
2.2	Minor Annotations (PER)			1	2	4	6	24		37	\$ 4,755.00
2.3	Drainage Design & Calculations	3		3	3	18	30	24		78	\$ 11,220.00
3	Coordination for Geotechnical		1	4		4				9	\$ 2,125.00
Design & Reporting (Option 1) SUBTOTAL		9	2	18	10	44	72	56		202	\$ 31,150.00
Design & Reporting (Option 2)											
1	DIA Report										
1.1	Update Drainage System Exhibits			2	1	2	4	8		17	\$ 2,505.00
1.2	Update DIA Report & Resubmit		1	8	4	16	32			61	\$ 10,545.00
2	Plan and Profile Sheets (Drainage)	6									
2.1	Existing Features in Plan & Profile			1	2	4	6	48		61	\$ 7,275.00
2.2	Minor Annotations (PER)			1	2	4	6	24		37	\$ 4,755.00
2.3	Drainage Design & Calculations	3		3	3	18	36	48		108	\$ 14,550.00
3	Coordination for Geotechnical & Survey		2	6		6				14	\$ 3,350.00
Design & Reporting (Option 2) SUBTOTAL		9	3	21	12	50	84	128		298	\$ 42,980.00



KOEBLER ROAD SEGMENT 1  
(DOG LEG TO FM 2977)  
FBC PROJECT# 20107  
HJ CONSULTING, INC.

4/13/2023

LEVEL OF EFFORT FOR ADDITIONAL SERVICES, APRIL 2023

Employee Classification		No. of Sheets	Principal	Project Manager	QA/QC Engineer	Project Engineer	Graduate Engineer	CAD Technician	Admin	Subtotal Hours	Total
Labor Rate Per Hour			\$325.00	\$275.00	\$225.00	\$175.00	\$135.00	\$105.00	\$95.00		
TASK	TASK DESCRIPTION	ESTIMATED HOURS									
SUBCONSULTANT SERVICES (GEOTECHNICAL) (Option 1)											
1	Geotechnical Investigation for System A Inline detention, detention pond, and one outfall										\$ 37,627.50
2	Minus Geotechnical investigation for Detention Pond										\$ (17,413.50)
SUBCONSULTANT SERVICES (GEOTECHNICAL) (Option 1) SUBTOTAL											\$ 20,214.00
SUBCONSULTANT SERVICES (GEOTECHNICAL) (Option 2)											
1	Geotechnical Investigation for Offsite detention & two outfalls)										\$ 32,015.50
2	Minus Geotechnical investigation for Detention Pond										\$ (17,413.50)
SUBCONSULTANT SERVICES (GEOTECHNICAL) (Option 2) SUBTOTAL											\$ 14,602.00
SUBCONSULTANT SERVICES (SURVEY) (Option 2)											
1	Topographic Survey										\$ 7,600.00
2	Parcel metes & bounds with Abstracting and Title Research (6 Parcels @ \$2,075/Parcel)										\$ 12,450.00
SUBCONSULTANT SERVICES (SURVEY) (Option 2) SUBTOTAL											\$ 20,050.00

**REVISED  
PROPOSAL FOR  
GEOTECHNICAL STUDY  
KOEBLER ROAD – SEGMENT 1 BETWEEN SPACEK ROAD AND FM 2977  
DRAINAGE IMPROVEMENTS  
FORT BEND COUNTY PROJECT NO. 20107  
FORT BEND COUNTY, TEXAS  
REVISION I**

**PROPOSAL NO. P21-063-1**



**TO**

**HJ CONSULTING, INC.  
SUGAR LAND, TEXAS**

**BY**

**GEOTECH ENGINEERING AND TESTING**

***[www.geotecheng.com](http://www.geotecheng.com)***

**MARCH 2023**

HJ Consulting, Inc.  
4471 Sweetwater Blvd. #254  
Sugar Land, Texas 77479

Proposal No. P21-063-1  
March 17, 2023  
Tel.: 832-338-3202

E-mail: [harish@hjconsultinginc.com](mailto:harish@hjconsultinginc.com)

Attention: Mr. Harish Jajoo, P.E., CFM  
President

**REVISED  
PROPOSAL FOR  
GEOTECHNICAL STUDY  
KOEBLER ROAD – SEGMENT 1 BETWEEN SPACEK ROAD AND FM 2977  
DRAINAGE IMPROVEMENTS  
FORT BEND COUNTY PROJECT NO. 20107  
FORT BEND COUNTY, TEXAS  
REVISION I**

Gentlemen:

At your request, we are pleased to submit this proposal for the Koebler Road Drainage Improvement project. Based on the recent communication with the client, we understand that the proposed drainage improvements will consist one of the three alternatives: 1) offsite and inline detention with one outfall, 2) Off-site and inline detention with one outfall and one detention pond and 3) Offsite and inline detention with two outfalls. The planned drainage improvements were discussed in detail with Mr. Dhiren Srivastava, P.E., PMP in order to plan a study that would provide the necessary design and construction data.



**INTRODUCTION**

It is planned to improve approximately 6,624-ft linear feet of Koebler Road from Spacek Road to FM 2977, Fort Bend County, Texas. GET conducted an initial geotechnical study for the proposed paving and storm sewer improvements in accordance with our proposal P21-063, dated April 2, 2021, Revision II and presented the results of this study in GET Report No. 21-227E, dated October 5, 2021. Based on the recent communication with the client, we understand that the proposed drainage improvements will consist one of the three alternatives: 1) offsite and inline detention with one outfall, 2) Off-site and inline detention with one outfall and one detention pond and 3) Offsite and inline detention with two outfalls. The specific improvement will consist of the following:

**Alternative 1: Inline Detention with One Outfall**

Facility	Remarks
Offsite and Inline Detention	The offsite and inline detention shall consist of about 10-ft to 14-ft deep underground pipes to convey discharge to the nearby creek as shown on Plate 2.

Facility	Remarks
Outfall	We understand that one outfall, about 15-ft deep shall be constructed. Location of the outfall is shown on Plate 2.

### **Alternative 2: Inline Detention with One Outfall and a Detention Pond**

Facility	Remarks
Offsite and Inline Detention	The offsite and inline detention shall consist of about 10-ft to 14-ft deep underground pipes to convey discharge to the nearby creek as shown on Plate 3.
Outfall	We understand that one outfall, about 15-ft deep shall be constructed. Location of the outfall is shown on Plate 3.
Detention Pond	We understand that One Detention Pond, about 2-acre in size and about 14-ft deep shall be constructed. Location of the detention pond is shown on Plate 3.

### **Alternative 3: Inline Detention with Two Outfalls**

Facility	Remarks
Offsite and Inline Detention	The offsite and inline detention shall consist about 3,500 ft long and about 10-ft to 14-ft deep underground pipes to convey discharge to the nearby creek.
Outfalls	We understand that one outfall, about 15-ft deep and another about 21-ft deep shall be constructed. Locations of the outfalls are shown on Plate 4.

The scope of our work will be in general accordance with the Fort Bend County Geotechnical Guidelines. The study for the proposed detention pond will be conducted in general accordance with Harris County Flood Control District (HCFCD) requirements. If alternative 2 is selected, then the detention pond will be constructed along with outfall and inline detention at the same time We will not perform the geotechnical exploration for the road in accordance with the Harris County or TxDOT Guidelines. We understand that the scope of our work will not include review of plans and specifications prior to the final design.



## **GEOTECHNICAL STUDY**

### Field Exploration

Site Access. Due to presence of soft subgrade soils and potential access problems to the proposed borings for the inline detention, outfalls and detention pond, an ATV rig may have to be used to drill borings.

Surveying. The client will establish and provide GET the boring coordinates and ground surface elevations. GET will mark the boring locations in the field so that the survey crew can locate them.





Checking for Utilities. GET will call Texas 811-Call for the locations of utilities. GET will coordinate these activities. GET will not hire a contractor to conduct subsurface utility studies to find location of any and all utilities. This is not the scope of GET work. We recommend the scope of our work to include subsurface utility investigation at boring locations to assess those underground utilities are not hit during field exploration.



Drilling and Sampling. We will evaluate the soil stratigraphy and groundwater conditions for the proposed drainage improvements by conducting soil borings to a depth ranging from 20-ft to 35-ft from the existing grade. It should be noted that spacing between borings is about 500-ft. As discussed earlier, three alternatives: 1) offsite and inline detention with one outfall, 2) Off-site and inline detention with one outfall and one detention pond and 3) Offsite and inline detention with two outfalls are considered. The borings schedule is as follows:

#### **Alternative 1: Inline Detention with One Outfall**

Facility	Borings	Depth, ft	Remark
Offsite and Inline Detention	B-16 thru B-19	25	An ATV rig may be needed, if wet and soft soils are encountered at the borings.
Outfall	B-20	25	

#### **Alternative 2: Inline Detention with One Outfall and a Detention Pond**

Facility	Borings	Depth, ft	Remark
Offsite and Inline Detention	B-16 thru B-19	25	An ATV rig may be needed, if wet and soft soils are encountered at the borings.
Outfall	B-20	25	
Detention Pond	B-21 and B-22	25	

### Alternative 3: Inline Detention with Two Outfalls

Facility	Borings	Depth, ft	Remark
Offsite and Inline Detention	B-11 <sup>1</sup>	15	
	B-16 thru B-18	15	
	B-19 thru B-21, B-23 and B-24	25	An ATV rig may be needed, if wet and soft soils are encountered at the borings.
Outfalls	B-25	25	
	B-22	35	

Note 1: Boring B-11 was drilled previously by GET for paving improvements at the project site

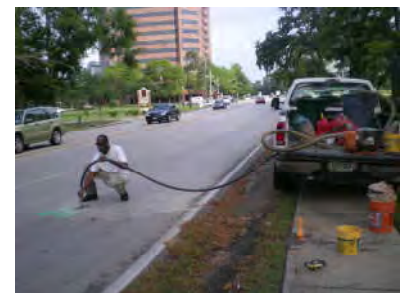
Soil samples will be obtained continuously from the surface to the completion depth of borings. The cohesive soils will be sampled, using a Shelby Tube sampler. Standard Penetration Tests (SPT) will be performed in sands, if encountered. Shear strengths of the clays will be measured in the field with a hand penetrometer and correlations between this data and laboratory unconfined compression and Torvane tests used to supplement laboratory shear strength data.

Groundwater. Depth to groundwater will be important for design and construction of the proposed facilities. For this reason, borings will be drilled dry and the depth at which groundwater is encountered will be recorded. Twenty-four-hour water levels will be measured at the borings proposed for the detention pond.



#### Piezometer (For Detention Pond if Alternative #2 is selected)

We will install one (1) piezometer at a detention basin boring. The piezometer will be 20-ft deep and three (3)-inch in diameter with a 10-ft screen. The piezometer will be developed by GET. It will be monitored twice in one month. After the completion of monitoring, the piezometer will be left on-site.



Borehole backfilling. All of the geotechnical boreholes will be backfilled with soil cuttings.

## LABORATORY TESTING

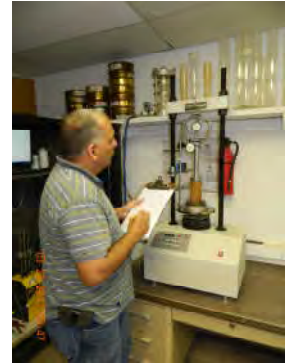
Laboratory tests will vary with the soils encountered but will be planned to evaluate soils design parameters for the proposed drainage improvements.



It is anticipated that the tests will include hand penetrometer, torvane, unconfined compression, unit weight, moisture content, liquid and plastic limit tests and sieve analysis with hydrometer.

Harris County Flood Control District (HCFCD) requires additional detailed testing for the pond

slope stability and erosion protection for the detention pond. These tests will consist of Triaxial Shear tests for slope stability and crumb tests and double hydrometer tests to evaluate the dispersive characteristics of the on-site soils. These tests will be conducted in accordance with the HCFCD Standards.



All of the subsoils will be classified in general accordance with the American Society of Testing Materials (ASTM) Soil Classification System. All tests will be performed in general accordance with the ASTM Procedures.

## 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 relative to the following:

Facility	Recommendations
General	<ul style="list-style-type: none"><li>○ Summary.</li><li>○ Project site pictures.</li><li>○ Generalized soils stratigraphy and groundwater levels.</li><li>○ Boring logs per GET format</li><li>○ Boring logs for Detention Pond (for Alternative 2 only) per HCFCD format</li><li>○ Potential construction issues.</li></ul>

Facility	Recommendations	
Offsite and Inline Detention	<ul style="list-style-type: none"> <li>○ In the event that open excavation is used, we will provide bedding, backfilling, excavation wall and bottom stability, thrust restraint, dewatering, pipe design parameters.</li> <li>○ In the event that augering is used, we will provide, soil design parameters, ground stability, auger pit excavation stability and dewatering.</li> <li>○ OSHA soil classification for the trench safety.</li> </ul>	
Outfalls	<ul style="list-style-type: none"> <li>○ Recommendations on design of outfall structure, including bedding requirements, excavations, backfilling, etc.</li> <li>○ Recommendations on ditch side slopes. Slope-stability analysis will not be conducted.</li> <li>○ Soil types available from excavations and use of these materials for fill.</li> <li>○ Erosion protection, including the use of grass for erosion protection.</li> </ul>	
Detention Pond  (For Alternative 2 only)	<ul style="list-style-type: none"> <li>○ Recommendations on design of the detention pond, including the recommended slope ratios based on the furnished cross sections. A detailed slope-stability analysis will be conducted. The slope-stability studies will be per HCFCD Requirements.</li> <li>○ Computerized slope-stability recommendations for short-term, long-term and rapid draw down conditions.</li> <li>○ Boring logs per HCFCD format.</li> <li>○ Recommended slope ratios and erosion protection.</li> <li>○ Recommendations on subsoil dispersive characteristics</li> <li>○ Seepage and bottom blow up recommendations.</li> <li>○ OSHA soil classification for the trench safety.</li> <li>○ Trench safety report.</li> <li>○ Erosion recommendations, including the use of grass for erosion protection.</li> </ul>	  

Facility	Recommendations
HCFCF Detention Pond	<ul style="list-style-type: none"> <li>○ Recommendations on subsoil stabilization, if necessary.</li> <li>○ Recommendations on the use of excavated materials as fill, per HCFCF requirements.</li> </ul>
(For Alternative 2 only)	<ul style="list-style-type: none"> <li>○ Recommendations on earthwork, select fill and construction procedures.</li> <li>○ Recommendations on site drainage.</li> </ul>

## COST ESTIMATE

### General

Based on the scope of work outlined above, we estimate the cost for field, laboratory, and engineering services for 3 different alternatives based on the Harris County Fee Schedule as shown on Plates 5 through 12. This estimate assumes underground obstructions will not be encountered that require boring relocations. GET is not responsible for damages to underground utilities, man-made utilities, etc. In the event that concrete, rock/rubble is encountered, the boring(s) will be terminated. We understand that all of the boring elevations will be provided by the client prior to completion of GET report. Our cost estimate includes one draft report copy and one final report copy. A digital copy of the report will also be provided. Additional report copies will be provided at a separate charge.



### Underground Utilities

The cost estimate for geotechnical services assumes that underground obstructions will not be encountered during boring that requires boring relocation(s). GET will contact Texas 811 for the presence of underground utilities. However, Texas 811 does not have information regarding the presence of underground utilities inside the properties. GET is not responsible for damage to underground utilities, man-made objects, etc., that are not identified by Texas 811. The scope of our work does not include subsurface utility engineering. We recommend the scope of our work to include subsurface utility investigation at boring locations to assess that underground utilities are not hit during field exploration.



## Cost Summary

A summary of estimated cost is presented below:

### **Alternative 1: Inline Detention with One Outfall**

<u>Scope of Work</u>	<u>Estimated Cost</u>	<u>Cost Breakdown Plate(s)</u>
Geotechnical Exploration for Drainage Improvements	20,317.50	5 – 6
ATV Rig (allowance)	<u>1,500.00</u>	6
Total	\$ <u>21,817.50</u>	
Previously approved budget for optional services	-\$ <u>17,413.50</u>	
Additional Amount Needed	\$ <u>4,404.00</u>	

### **Alternative 2: Inline Detention with One Outfall and a Detention Pond**

<u>Scope of Work</u>	<u>Estimated Cost</u>	<u>Cost Breakdown Plate(s)</u>
Geotechnical Exploration for Drainage Improvements	33,809.50	7 – 10
Piezometer (allowance)	1,818.00	10
ATV Rig (allowance)	<u>2,000.00</u>	8 – 10
Total	\$ <u>37,627.50</u>	
Previously approved budget for optional services	-\$ <u>17,413.50</u>	
Additional Amount Needed	\$ <u>20,214.00</u>	

### **Alternative 3: Inline Detention with Two Outfalls**

<u>Scope of Work</u>	<u>Estimated Cost</u>	<u>Cost Breakdown Plate(s)</u>
Geotechnical Exploration for Drainage Improvements	29,315.50	11 – 12
ATV Rig (allowance)	<u>2,700.00</u>	12
Total	\$ <u>32,015.50</u>	
Previously approved budget for optional services	-\$ <u>17,413.50</u>	
Additional Amount Needed	\$ <u>14,602.00</u>	

## REPORT REVIEWS AND COMMENTS

Our report will be submitted to HJ Consulting, Inc. in a draft form for comments. Once these reviews are completed, a final report will be issued. All of these comments will be incorporated in the final report. The client agrees that all reviews are complete once a notice for a final report is issued. Any changes to the final report will be outside the scope of our study. We will incorporate any future comments after the final report is issued on a time and materials basis per the applicable fee schedule.

## TIME SCHEDULES

We estimate that the field work can be started about one (1) week after authorization is received. The project schedule will be as follows:

### Alternative 1: Inline Detention with One Outfall

<u>Facility</u>	<u>Right of Way/Utility Clearance</u>	<u>Field Exploration</u>	<u>Laboratory Testing</u>	<u>Engineering</u>	<u>Total</u>
Drainage Improvements	10	10	15	15	50

### Alternative 2: Inline Detention with One Outfall and a Detention Pond

<u>Facility</u>	<u>Right of Way/Utility Clearance</u>	<u>Field Exploration</u>	<u>Laboratory Testing</u>	<u>Engineering</u>	<u>Total</u>
Drainage Improvements	10	10	25	25	70

### Alternative 3: Inline Detention with Two Outfalls

<u>Facility</u>	<u>Right of Way/Utility Clearance</u>	<u>Field Exploration</u>	<u>Laboratory Testing</u>	<u>Engineering</u>	<u>Total</u>
Drainage Improvements	10	10	15	25	60

Preliminary recommendations will be submitted during the course of the exploration, if required to expedite design.



We appreciate the opportunity to submit this proposal and look forward to being of service to you on this project. Formal acceptance of this proposal and our general conditions can be acknowledged by signing below and returning one copy for our files.

Very truly yours,

GEOTECH ENGINEERING AND TESTING

TBPE Registration Number F-001183



David A. Eastwood, P.E., D.GE, DFE, C.A.P.M., F.FPA, F. ASCE  
Principal Engineer

ACCEPTED BY: \_\_\_\_\_

COMAPANY NAME: \_\_\_\_\_

PRINTED NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

Enclosures: Site Vicinity Map – Plate 1

Plan of Borings – Plate 2 (Alternative 1)

Plan of Borings – Plate 3 (Alternative 2)

Plan of Borings – Plate 4 (Alternative 3)

Cost Estimate – Plates 5 and 6 (Alternative 1)

Cost Estimate – Plates 7 thru 10 (Alternative 2)

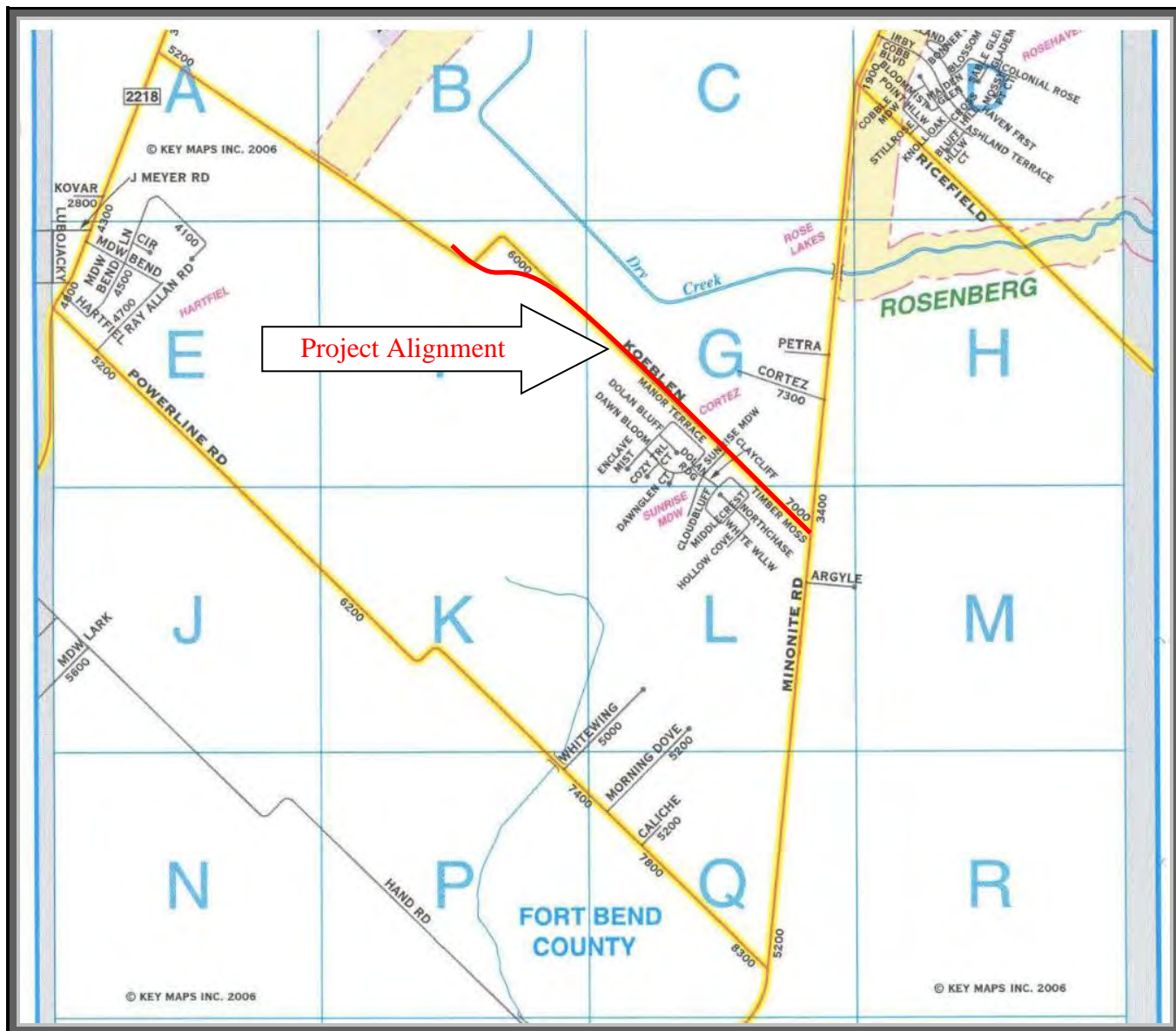
Cost Estimate – Plates 11 and 12 (Alternative 3)

General Conditions

Harris County Fee Schedule

Copies Submitted: (1) Mr. Harish Jajoo, P.E., CFM  
(1) Mr. Dhiren Srivastava, P.E., PMP  
(1) DAE





# **SITE VICINITY MAP**

PROJECT: Geotechnical Exploration for Koeblen Road- Seg 1 Drainage Improvements  
FBC Project No. 20107, Fort Bend County, Texas

SCALE: NOT TO SCALE

DATE: MARCH 2023

PROPOSAL NO.: 21-063E-1

NORTH



Alternative 1: Inline Detention with One Outfall



PLAN OF BORINGS (Boring locations are approximate)

PROJECT: Geotechnical Exploration for Koeblen Road- Seg 1 Drainage Improvements – Inline Detention with One Outfall  
FBC Project No. 20107, Fort Bend County, Texas

SCALE: NOT TO SCALE

DATE: MARCH 2023

PROPOSAL NO.: 21-063E-1

NORTH

## Alternative 2: Inline Detention with One Outfall and Detention Pond



### PLAN OF BORINGS (Boring locations are approximate)

PROJECT: Geotechnical Exploration for Koeblen Road- Seg 1 Drainage Improvements – Inline Detention with One Outfall & Pond  
FBC Project No. 20107, Fort Bend County, Texas

SCALE: NOT TO SCALE

DATE: MARCH 2023

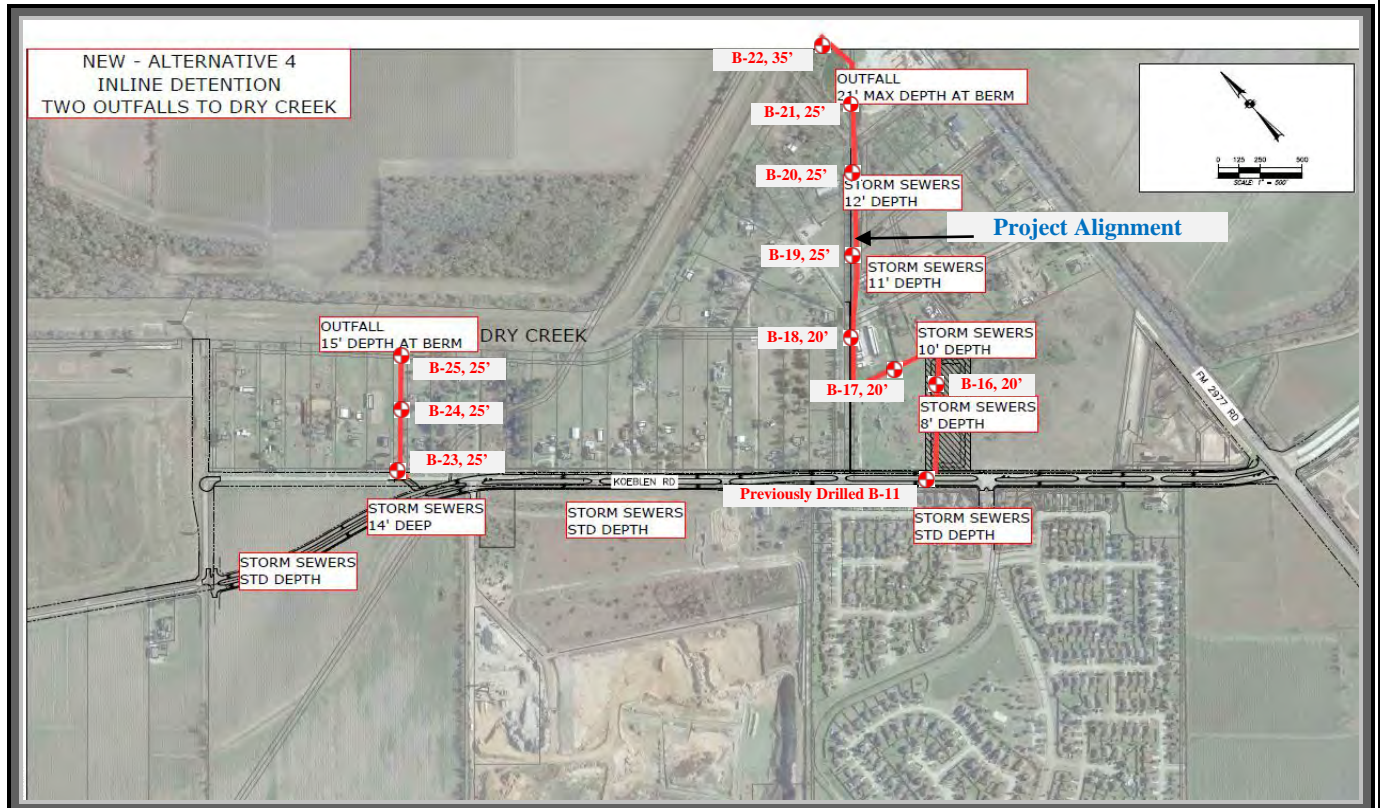
PROPOSAL NO.: 21-063E-1

NORTH





## Alternative 3: Inline Detention with Two Outfalls



### PLAN OF BORINGS (Boring locations are approximate)

PROJECT: Geotechnical Exploration for Koeblen Road- Seg 1 Drainage Improvements – Inline Detention with Two Outfalls  
FBC Project No. 20107, Fort Bend County, Texas

SCALE: NOT TO SCALE

DATE: MARCH 2023

PROPOSAL NO.: 21-063E-1

NORTH



GEOTECH ENGINEERING AND TESTING		Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/ Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date: April 11, 2023										
PER HARRIS COUNTY FEE SCHEDULE		\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Task No. Task Description		* LEVEL OF EFFORT								
Geotechnical Exploration Study for Inline detention and outfall, Five Borings to 25'										
Project Initiation upon Receiving NTP										
1	Review of the scope of the work (Scope meetings)		1	1						\$320.00
2	Coordinate with Client, in obtaining the updated information of the project		1							\$205.00
									Subtotal	\$525.00
* LEVEL OF EFFORT										
Field Investigation										
3	Develop a Drilling Plan		0.5	1						\$217.50
4	Staking the Five (5) Boring in the Field			4						\$460.00
5	Coordinate with Surveyors to Locate & Tie in Borings at Site			1						\$115.00
6	Field Coordination during Drilling Including Utility Clearance,		1	5						\$780.00
7	Mobilization / Demobilization						LS	1	\$700.00	\$700.00
8	Drilling and Sampling Five Borings to 25' below existing grade.									
10	Continuous (0' - 15')						LF	75	\$25.00	\$1,875.00
11	Intermittent (15' - 25')						LF	50	\$23.00	\$1,150.00
9	Technician, Borehole Logging, Clearing, Borehole Grouting				18					\$990.00
11	Vehicle Charge (Boring staking, site visits during field coordination during drilling including utility clearance, Texas One Call etc., and borehole logging)						HR	27	\$12.00	\$324.00
									Subtotal	\$6,611.50
Laboratory Testing										
12	Assign Laboratory Tests, Looking at Soil Samples		1	2						\$435.00
13	Water Content (all samples)						EA	50	\$11.00	\$550.00
14	Liquid and Plastic Limits						EA	13	\$71.00	\$923.00
15	Percent Passing #200 Sieve						EA	13	\$55.00	\$715.00
16	Sieve Analysis with Hydrometer						EA	5	\$145.00	\$725.00
17	Torvane						EA	50	\$3.00	\$150.00
18	Hand Penetrometer						EA	50	\$4.00	\$200.00
19	Unconfined Compression						EA	13	\$51.00	\$663.00
									Subtotal	\$4,361.00
Plate 5										

**Estimated Cost Summary (Offsite detention and outfalls)**

Geotechnical Study

Koeblen Road Drainage Improvements

Fort Bend County, Texas

P21-036

**Consultant Proposal Breakdown**

GEOTECH ENGINEERING AND TESTING		Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date:	April 11, 2023									
PER HARRIS COUNTY FEE SCHEDULE		\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Engineering Analysis and Report										
20	Prepare Plan of Borings			1						\$115.00
21	Analyze field and laboratory test results			3						\$345.00
22	Prepare summary of laboratory test data			1						\$115.00
23	Edit and prepare boring log profile			5						\$575.00
Develop Geotechnical Recommendations										
24	Recommendations on the Outfall Structures		1	2						\$435.00
25	Recommendation for Ditch Side Slopes		1	2						\$435.00
26	Recommendation for Pipe Outfalls		1	2						\$435.00
27	Groundwater Effects on the Base Stability of Excavations		1	2						\$435.00
28	Prepare a geotechnical trench safety letter report		2	4						\$870.00
29	Document the results of soil exploration, laboratory testing	2	7	21						\$3,850.00
30	Incorporate the review comments	1	2	4						\$870.00
31	Technical Typing/Drafting					2				\$140.00
32	Report Reproduction Allowance									\$200.00
Subtotal										\$8,820.00
Total:										\$20,317.50
ALLOWANCE ITEMS										
ATV Rig Allowance										
33	Mobilization/Demobilization						LS	1	\$250.00	\$250.00
34	Drilling and Sampling Surcharge						FT	125	\$10.00	\$1,250.00
Subtotal										\$1,500.00
Grand Total										\$21,817.50

Plate 6

GEOTECH ENGINEERING AND TESTING		Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/ Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date: April 11, 2023										
PER HARRIS COUNTY FEE SCHEDULE		\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Task No. Task Description		* LEVEL OF EFFORT								
Geotechnical Exploration Study for Inline detention and outfall, Five Borings to 25'										
Project Initiation upon Receiving NTP										
1	Review of the scope of the work (Scope meetings)		1	1						\$320.00
2	Coordinate with Client, in obtaining the updated information of the project		1							\$205.00
									Subtotal	\$525.00
* LEVEL OF EFFORT										
Field Investigation										
3	Develop a Drilling Plan		0.5	1						\$217.50
4	Staking the Five (5) Boring in the Field			4						\$460.00
5	Coordinate with Surveyors to Locate & Tie in Borings at Site			1						\$115.00
6	Field Coordination during Drilling Including Utility Clearance,		1	5						\$780.00
7	Mobilization / Demobilization						LS	1	\$700.00	\$700.00
8	Drilling and Sampling Five Borings to 25' below existing grade.									
10	Continuous (0' - 15')						LF	75	\$25.00	\$1,875.00
11	Intermittent (15' - 35')						LF	50	\$23.00	\$1,150.00
9	Technician, Borehole Logging, Clearing, Borehole Grouting				18					\$990.00
11	Vehicle Charge (Boring staking, site visits during field coordination during drilling including utility clearance, Texas One Call etc., and borehole logging)						HR	27	\$12.00	\$324.00
									Subtotal	\$6,611.50
Laboratory Testing										
12	Assign Laboratory Tests, Looking at Soil Samples		1	2						\$435.00
13	Water Content (all samples)						EA	50	\$11.00	\$550.00
14	Liquid and Plastic Limits						EA	13	\$71.00	\$923.00
15	Percent Passing #200 Sieve						EA	13	\$55.00	\$715.00
16	Sieve Analysis with Hydrometer						EA	5	\$145.00	\$725.00
17	Torvane						EA	50	\$3.00	\$150.00
18	Hand Penetrometer						EA	50	\$4.00	\$200.00
19	Unconfined Compression						EA	13	\$51.00	\$663.00
									Subtotal	\$4,361.00
Plate 7										

**Estimated Cost Summary (Offsite detention and outfalls)**

Geotechnical Study

Koeblen Road Drainage Improvements

Fort Bend County, Texas

P21-036

**Consultant Proposal Breakdown**

GEOTECH ENGINEERING AND TESTING		Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date:	April 11, 2023									
PER HARRIS COUNTY FEE SCHEDULE		\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Engineering Analysis and Report										
20	Prepare Plan of Borings			1						\$115.00
21	Analyze field and laboratory test results			3						\$345.00
22	Prepare summary of laboratory test data			1						\$115.00
23	Edit and prepare boring log profile			5						\$575.00
Develop Geotechnical Recommendations										
24	Recommendations on the Outfall Structures		1	2						\$435.00
25	Recommendation for Ditch Side Slopes		1	2						\$435.00
26	Recommendation for Pipe Outfalls		1	2						\$435.00
27	Groundwater Effects on the Base Stability of Excavations		1	2						\$435.00
28	Prepare a geotechnical trench safety letter report		2	4						\$870.00
29	Document the results of soil exploration, laboratory testing	2	7	21						\$3,850.00
30	Incorporate the review comments	1	2	4						\$870.00
31	Technical Typing/Drafting					2				\$140.00
32	Report Reproduction Allowance									\$200.00
Subtotal										\$8,820.00
Total:										\$20,317.50
ALLOWANCE ITEMS										
ATV Rig Allowance										
33	Mobilization/Demobilization						LS	1	\$250.00	\$250.00
34	Drilling and Sampling Surcharge						FT	125	\$10.00	\$1,250.00
Subtotal										\$1,500.00
Grand Total										\$21,817.50

Plate 8



**Estimated Cost Summary (Inline detention, outfalls and Detention Pond)**

**Geotechnical Study**

Koeblen Road Drainage Improvements

Fort Bend County, Texas

P21-063

**Consultant Proposal Breakdown**

GEOTECH ENGINEERING AND TESTING		Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/ Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date: April 11, 2023										
		Billing Rate per Hour								
PER HARRIS COUNTY FEE SCHEDULE		\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Task No.	Task Description	* LEVEL OF EFFORT								
Geotechnical Exploration Study for Detention Pond, Two Borings to 25-ft Depth										
* LEVEL OF EFFORT										
Field Investigation										
1	Drilling and Sampling Two (2) Boring to 25-ft Depth									
2	Technician, Borehole Logging, Clearing, Borehole Grouting				10					\$550.00
3	Continuous (0' - 15')						LF	30	\$25.00	\$750.00
4	Intermittent (15' - 25')						LF	20	\$23.00	\$460.00
5	Vehicle Charge ( borehole logging)						HR	10	\$12.00	\$120.00
6	Borehole Grouting						FT	25	\$12.00	\$300.00
									Subtotal	\$2,180.00
Laboratory Testing										
7	Assign Laboratory Tests, Looking at Soil Samples		1	2						\$435.00
8	Water Content (all samples)						EA	20	\$11.00	\$220.00
9	Liquid and Plastic Limits						EA	5	\$71.00	\$355.00
10	Percent Passing #200 Sieve						EA	5	\$55.00	\$275.00
11	Sieve Analysis with Hydrometer						EA	4	\$145.00	\$580.00
12	Torvane						EA	20	\$3.00	\$60.00
13	Hand Penetrometer						EA	20	\$4.00	\$80.00
14	Unconfined Compression						EA	5	\$51.00	\$255.00
15	Unconsolidated Undrained Triaxial Test						EA	4	\$72.00	\$288.00
16	Consolidated Undrained (CIU) with Pore Pressure Test						EA	2	\$2,000.00	\$4,000.00
17	Double Hydrometer Test						EA	4	\$250.00	\$1,000.00
18	Crumb Tests	EA	8	\$43.00	\$344.00					

Plate 9

**Subtotal \$7,892.00**

GEOTECH ENGINEERING AND TESTING		Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/ Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date: April 11, 2023										
		Billing Rate per Hour								
PER HARRIS COUNTY FEE SCHEDULE		\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Engineering Analysis and Report										
30	Analyze field and laboratory test results for the pond			1						\$55.00
31	Prepare summary of laboratory test data for the pond		0.5	1						\$112.50
32	Edit and prepare final boring log profiles, HCFCF for the pond			2						\$110.00
Geotechnical Recommendations										
33	Develop Parameters for Slope-Stability for the pond		2	5						\$505.00
34	Perform Slope-Stability Analysis for the pond		5	16						\$1,455.00
35	Perform Erosion Analysis for the pond		3	6						\$675.00
36	Borrow Materials Analysis for the pond		0.5	2						\$167.50
37	Groundwater Effects on the Base Stability of Excavations		1	1						\$170.00
37	Evaluation of basin constructibility		1	1						\$170.00
									Subtotal	\$3,420.00
									Total:	\$13,492.00
ALLOWANCE ITEMS										
ATV Rig Allowance										
38	Drilling and Sampling Surcharge						FT	50	\$10.00	\$500.00
									Subtotal	\$500.00
Piezometer Installation (One piezometer, 20-ft deep)										
39	One, 3-inch diameter Piezometer w/ 10' screen (Installation)						FT	20	\$44.00	\$880.00
40	Technician Monitoring Piezometer Placement and Closure			6						\$330.00
41	Technician, Piezometer Reading (for a month, twice in one			8						\$440.00
42	Vehicle Charge						HR	14	\$12.00	\$168.00
									Subtotal	\$1,818.00
									Grand Total	\$15,810.00

Plate 10

GEOTECH ENGINEERING AND TESTING			Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/ Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date: March 14, 2023											
PER HARRIS COUNTY FEE SCHEDULE			\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Task No. Task Description			* LEVEL OF EFFORT								
Geotechnical Exploration Study for Inline detention and outfalls, Three Borings to 20-ft, Six Borings to 25' and One Boring to 35-ft below grade.											
Project Initiation upon Receiving NTP											
1	Review of the scope of the work (Scope meetings)			1	1						\$320.00
2	Coordinate with Client, in obtaining the updated information of the project			1							\$205.00
										Subtotal	\$525.00
* LEVEL OF EFFORT											
Field Investigation											
3	Develop a Drilling Plan			0.5	1						\$217.50
4	Staking the Ten (10) Boring in the Field				7						\$805.00
5	Coordinate with Surveyors to Locate & Tie in Borings at Site				1						\$115.00
6	Field Coordination during Drilling Including Utility Clearance,			1	5						\$780.00
7	Mobilization / Demobilization							LS	1	\$700.00	\$700.00
8	Drilling and Sampling Three Borings to 20-ft, Six Borings to 25' and One Boring to 35-ft below existing grade.										
10	Continuous (0' - 15')							LF	150	\$25.00	\$3,750.00
11	Intermittent (15' - 35')							LF	95	\$23.00	\$2,185.00
9	Technician, Borehole Logging, Clearing, Borehole Grouting					30					\$1,650.00
11	Vehicle Charge (Boring staking, site visits during field coordination during drilling including utility clearance, Texas One Call etc., and borehole logging)							HR	42	\$12.00	\$504.00
										Subtotal	\$10,706.50
Laboratory Testing											
12	Assign Laboratory Tests, Looking at Soil Samples			2	4						\$870.00
13	Water Content (all samples)							EA	93	\$11.00	\$1,023.00
14	Liquid and Plastic Limits							EA	25	\$71.00	\$1,775.00
15	Percent Passing #200 Sieve							EA	25	\$55.00	\$1,375.00
16	Sieve Analysis with Hydrometer							EA	10	\$145.00	\$1,450.00
17	Torvane							EA	93	\$3.00	\$279.00
18	Hand Penetrometer							EA	93	\$4.00	\$372.00
19	Unconfined Compression							EA	15	\$51.00	\$765.00
										Subtotal	\$7,909.00

Plate 11

**Estimated Cost Summary (Offsite detention and outfalls)**

Geotechnical Study

Koeblen Road Drainage Improvements

Fort Bend County, Texas

P21-036

**Consultant Proposal Breakdown**

GEOTECH ENGINEERING AND TESTING		Principal Engineer	Senior Engineer	Graduate Engineer	Field Technician	Typing/Drafting	Unit of Measure	Estimated Quantity	Rate	Subtotal (Cost \$)
Date:	March 14, 2023									
PER HARRIS COUNTY FEE SCHEDULE		\$250.00	\$205.00	\$115.00	\$55.00	\$70.00				
Engineering Analysis and Report										
20	Prepare Plan of Borings			1						\$115.00
21	Analyze field and laboratory test results			5						\$575.00
22	Prepare summary of laboratory test data			1						\$115.00
23	Edit and prepare boring log profile			10						\$1,150.00
Develop Geotechnical Recommendations										
24	Recommendations on the Outfall Structures		1	2						\$435.00
25	Recommendation for Ditch Side Slopes		1	2						\$435.00
26	Recommendation for Pipe Outfalls		1	2						\$435.00
27	Groundwater Effects on the Base Stability of Excavations		1	2						\$435.00
28	Prepare a geotechnical trench safety letter report		2	4						\$870.00
29	Document the results of soil exploration, laboratory testing	2	8	24						\$4,400.00
30	Incorporate the review comments	1	2	4						\$870.00
31	Technical Typing/Drafting					2				\$140.00
32	Report Reproduction Allowance									\$200.00
Subtotal										\$10,175.00
Total:										\$29,315.50
ALLOWANCE ITEMS										
ATV Rig Allowance										
33	Mobilization/Demobilization						LS	1	\$250.00	\$250.00
34	Drilling and Sampling Surcharge						FT	245	\$10.00	\$2,450.00
Subtotal										\$2,700.00
Grand Total										\$32,015.50

Plate 12

**KALUZA**  
INC  
**Consulting Engineers & Surveyors**  
Engineering Firm No. F-1339  
Texas Licensed Surveying Firm No. 10010000  
3014 Avenue I, Rosenberg, Texas 77471  
(281) 341-0808 ■ FAX (281) 341-6333

November 20, 2022

Mr. Harish Jajoo, P.E., CFM  
HJ Consulting, Inc.  
4471 Sweetwater Blvd. #254  
Sugar Land, Texas 77479

**RE: Surveying Proposal for Additional Services for Topographic Survey along Koeblen Road, City of Rosenberg, Fort Bend County, Texas**

Dear Mr. Jajoo:

We propose to render professional surveying services in connection with the above-referenced project (hereinafter referred to as the "Project"). It is our understanding that you will furnish us with full information as to your requirements of land use, including any special services needed, and to make available pertinent existing data.

Kaluza, Inc., hereinafter called "SURVEYOR," proposes to render professional surveying services to HL Consulting, Inc, hereinafter called "CLIENT," to complete the below scope of work on the Project. The Project limits for which these professional services are to be provided is along Koeblen Road, from Farm Market Road 2977 to approximately 7,000 feet northwest along existing Koeblen Road and approximately 1,700 feet across the Danziger tract for the new alignment of Koeblen Road.

**I. Scope of Work (Additional Surveying Services)**

**A. Topographic Surveying Services**

Research subdivision plats, right-of-ways, easements and other available survey elements, which may affect the physical boundaries of the project; All the easements with volume and page numbers shall be identified and labeled on the survey submittal; Research Fort Bend County Official Records for current deeds and plats for property affected by the Project; Research County records and public utilities record for existing documents of utilities; Office calculations necessary to check location of the right-of-way line in relation to features found during the course of the topographic survey; Establish horizontal and vertical survey control points at spacing of approximately 1,000 feet along the pavement reconstruction alignment; Reference all survey work to state plane coordinate system and to current Fort Bend County elevation control; Prepare survey control data strip map of existing and proposed right-of-way alignment for horizontal and vertical control points; Provide 24" x 36" .pdfs of survey control map and control sketches; Identify roadways, driveways, alleys and sidewalks with pavement type; Show centerlines and angles of intersection of the side street(s) with main roadway centerline, as necessary; Show all mailboxes, road signs and signal posts; Locate and describe any trees, bushes or other landscaping plants; Provide tree caliper, type of tree, and drip line location for all trees over 2 inches in diameter; Provide topographic survey of outfall drainage ditch as outlined as Alternative 1 and 2 based on HJ Consulting PER, from existing

Koeblen Road to Dry Creek; Show all visible utilities found during the course of obtaining field work; Show on plan view drawings, all underground features and utilities within the Project limits from as-built drawings; Show building structures within 50' of road right-of-way; Locate vegetation lines and special landscaping; Survey boring logs and obtain surface elevation; Topographic work will extend 30' beyond the right-of-way; and Deliver files in Civil 3D 2018; Provide a plan view strip map of topographic survey with appropriate labels.

**Fee Amount = \$ 7,600.00**

**B. Additional Parcel Acquisition: (6 Tracts of Land Assumed)**

Meet with HJ Consulting, Inc. and County Staff to determine final location of right-of-way acquisition; Prepare individual metes and bounds descriptions of additional right-of-way acquisition; Prepare individual Category 1A Survey Map of right-of-way on 8-1/2" x 11" legible print showing visual representation, as well as, any other pertinent information that needs to be shown; Set property acquisition monumentation for each individual parcel; and Surveying services for retracement and monumentation of the existing rights-of-way and easement. (6 Parcels @ \$1,500.00 each)

**Fee Amount = \$ 9,000.00**

**C. Additional Abstracting and Title Research: (6 Tracts of Land Assumed)**

Provide professional abstracting and title research for legal documents; Title search will show names of all property owners, lienholders and reference legal documents associated with land; and 6 abstract certificates @\$575.00 per certificate.

**Fee Amount = \$ 3,450.00**

**Additional Services**

If authorized by CLIENT, SURVEYOR will furnish the following Additional Services that are not considered part of the Basic Surveying Services Scope of Work. Additional Services beyond anticipated Basic Services shall be paid for on an hourly basis at the rate shown in the Schedule of Hourly Rates by Personnel Classification (Exhibit "A").

It is understood that this proposal and fees do not include the following:

1. Services resulting from significant changes in the general scope of the project.
2. Revisions to previously approved plans, reports, studies, or other project documents.
3. New and/or additional acquisition activities resulting from unknown needs prior to project initiation, site changes and/or condemnation proceedings.
4. Assistance to CLIENT as an expert witness in any litigation with third parties, arising from the development or construction of the project, including preparation of engineering data and reports.
5. Services after issuance of Certificate of Completion, and any other special or miscellaneous assignments specifically authorized by the CLIENT.
6. Topographic survey for detention pond or offsite drainage facilities outside the immediate right of way area.

Mr. Harish Jajoo, P.E., CFM  
HJ Consulting, Inc.  
November 20, 2022  
Page Three (3)

### **Schedule**

Professional Services for the project can commence within ten (10) days of the receipt of a copy of this proposal signed by the CLIENT. It is anticipated that completion of the Project can be completed within thirty (30) days from the proposal signed date.

### **Summary of Compensation**

Surveying services to be provided under this contract shall be compensated as outlined below:

- I. Additional Surveying Services:
- |   |                    |
|---|--------------------|
| A. Topographic Surveying Services =                           | \$ 7,600.00        |
| B. Parcel Acquisition: (6 Tracts of Land Assumed) =           | \$ 9,000.00        |
| C. Abstracting & Title Research: (6 Tracts of Land Assumed) = | \$ <u>3,450.00</u> |

<b>Total Surveying Fees for Basic Surveying Services =</b>	<b>\$ <u>20,050.00</u></b>
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SURVEYOR will invoice CLIENT monthly for services rendered during the preceding month. Invoices will be based on the ENGINEER'S estimate of percentage completion to date of invoice.

CLIENT agrees to remit SURVEYOR'S invoices in full within thirty (30) days of receipt of billing.

Total fees are based on time for completion of all work described above for the specified amounts, provided that the Owner does not change or increase the scope of work. Additional services beyond those items described will be based and billed on actual hours of work that have been completed at the hourly rates as shown on the attached Exhibit "A."

Kaluza, Inc. makes no warranty, either express or implied, as to its services, including preparation of surveys, or professional advice, except that they are prepared, issued, and performed in accordance with accepted professional engineering and surveying practices. Additionally, it is the desire of our firm to comply with other applicable Federal, State, County, and local laws during the execution of this contract.

This proposal and Exhibit "A" attached, represent the entire understanding between you and this firm in respect to the Project, and may only be modified in writing signed by both of us. If this proposal satisfactorily sets forth your understanding of the arrangement between us, we would appreciate your signing this proposal in the space provided below and returning the signed copy to us.

Mr. Harish Jajoo, P.E., CFM  
HJ Consulting, Inc.  
November 20, 2022  
Page Four (4)

Thank you for this opportunity to be of assistance to you. We look forward to working with you on this project.

Cordially,

**KALUZA, INC.**

*Llarance L. Turner*

Llarance L. Turner, R.P.L.S.  
President

Attachment

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Accepted - Title

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Date



**SCHEDULE OF HOURLY CHARGES BY PERSONNEL CLASSIFICATION**  
**Effective January 2022**

**KALUZA, INC.**  
**CONSULTING ENGINEERS, SURVEYORS, AND PLANNERS**

The charges for professional Engineering, Surveying, and Drafting services are based on the following daily or hourly rates:

**ENGINEERING, SURVEYING, AND DRAFTING**

Principal.....	\$ 195.00/Hour
Sr. Project Manager.....	\$ 170.00/Hour
Project Manager.....	\$ 160.00/Hour
Survey Manager.....	\$ 155.00/Hour
Project Engineer.....	\$ 125.00/Hour
Project Surveyor.....	\$ 100.00/Hour
Sr. Designer.....	\$ 100.00/Hour
Designer.....	\$ 90.00/Hour
CAD Technician.....	\$ 75.00/Hour
Contract Coordinator.....	\$ 70.00/Hour
Administrative Assistant.....	\$ 65.00/Hour
Field Party (2 Men).....	\$ 135.00/Hour
Field Party (3 Men).....	\$ 155.00/Hour
Field Party (4 Men).....	\$ 165.00/Hour
Construction Observation.....	\$ 800.00/Day

**ADDITIONAL EXPENSES**

1.     Reproduction Work - At prevailing commercial rate.
2.     Field Note Descriptions - \$75.00/Set.
3.     ATV Rental - \$130.00/Day.
4.     Other Consultants - At cost plus 10% for handling.
5.     All Other Expenses - At cost plus 10% for handling.
6.     Global Positioning System (GPS) Surveying an additional charge of \$30.00 per hour will be charged for equipment.

**Charges are due and payable within thirty (30) days after receipt of invoice.**  
**Interest will be charged at the rate of 1.5% per month for late payments.**



*Consulting Engineers & Surveyors*

Engineering Firm No. F-1339 Surveying Firm No. 10010000

3014 Avenue I, Rosenberg, Texas 77471

Phone: (281) 341-0808

Fax: (281) 341-6333

*Rates Subject to Change*

# 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.**

HJ Consulting, Inc.  
Sugar Land, TX United States

**Certificate Number:**  
2023-1030917

**Date Filed:**  
06/06/2023

**Date Acknowledged:**  
06/27/2023

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

Fort Bend County

**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.**

SOQ 14-025 FBC Project # 20307  
Additional Design Services

4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary
	Jajoo, Harish	Sugar Land, TX United States	X	

**5 Check only if there is NO Interested Party.**☐**6 UNSWORN DECLARATION**

My name is \_\_\_\_\_, and my date of birth is \_\_\_\_\_.

My address is \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.  
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in \_\_\_\_\_ County, State of \_\_\_\_\_, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.  
(month) (year)

\_\_\_\_\_  
Signature of authorized agent of contracting business entity  
(Declarant)