

STATE OF TEXAS §
 §
COUNTY OF FORT BEND §

**SECOND AMENDMENT TO AGREEMENT FOR
PROFESSIONAL ENGINEERING SERVICES**

THIS SECOND AMENDMENT, is made and entered into by and between Fort Bend County (hereinafter “County”), a body corporate and politic under the laws of the State of Texas, and McDonough Engineering Corporation (hereinafter “Contractor”), a company authorized to conduct business in the State of Texas.

WHEREAS, the parties executed and accepted that certain Agreement for Professional Engineering Services on May 4, 2021 pursuant to SOQ 14-025, which was subsequently amended on March 8, 2022, (hereinafter collectively referred to as the “Agreement”); and

WHEREAS, the parties desire to amend the Agreement to allow Contractor to provide additional Services under the Agreement and increase the total maximum compensation amount.

NOW, THEREFORE, the parties do mutually agree as follows:

1. County shall pay Contractor an additional amount not to exceed two hundred twenty-three thousand seven hundred fifty-four dollars and 80/100 (\$223,754.80) to perform the additional Services, as described in Contractor’s proposal dated September 19, 2023, attached hereto as Exhibit “A-2” and incorporated herein for all purposes.

2. The Maximum Compensation payable to Contractor for all Services rendered is hereby increased to an amount not to exceed eight hundred fifty-six thousand thirty-five dollars and 80/100 (\$856,035.80), authorized as follows:
 - \$ 579,445.00 under the Agreement; and
 - \$ 52,836.00 under the First Amendment; and
 - \$ 223,754.80 under this Second Amendment.

3. In no case shall the amount paid by County for all Services under the Agreement and this Amendment exceed the Maximum Compensation without an agreement executed by the parties.

4. 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, Contractor hereby verifies that Contractor 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, Contractor 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, Contractor 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, Contractor 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.
5. BY ACCEPTANCE OF AGREEMENT, CONTRACTOR ACKNOWLEDGES THAT THE 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. If there is a conflict among documents that make up the Agreement, this Amendment shall prevail with regard to the conflict.

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

FORT BEND COUNTY

MCDONOUGH ENGINEERING CORPORATION

KP George, County Judge

Ranney McDonough
Authorized Agent – Signature

Date

RANNEY MCDONOUGH
Authorized Agent – Printed Name

ATTEST:

PRES.
Title

Laura Richard, County Clerk

1-9-24
Date

APPROVED:



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

AUDITOR'S CERTIFICATE

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

Robert Ed Sturdivant, County Auditor

I:\AGREEMENTS\2024 Agreements\Engineering\McDonough Engineering (21-Eng-100713-A2)\Amend 2 - Pro Eng Svcs.MEC (Isl 1.2.24).docx.

EXHIBIT A-2



McDONOUGH ENGINEERING CORPORATION
Civil Engineers

EXHIBIT "A" SCOPE OF SERVICES

September 19, 2023

Binkley & Barfield, Inc.
Kevin A. Mineo, P.E.
1710 Seamist Dr.
Houston, TX 77008

Attn: Zach Jacobson, P.E., ENV SP

RE: Proposal for Professional Engineering Services- Amendment No. 2
Stella Road: From Cottonwood School Road to Band Road
Precinct 1 Fort Bend County
FBC Project No. 20116
MEC Project No. 21060

PROPOSED SCOPE

In response to project scope changes requested by Fort Bend County, a scope amendment for the Stella Road project has been prepared which includes the following items:

CIVIL SERVICES

1. Develop a comprehensive drainage study for Stella Road and the surrounding area to determine what can be done to maximize detention in the three potential areas adjacent to the proposed Stella Road as shown in the attached exhibits.
2. The goal of this study is to take as much of the estimated 31 ac-ft of detention away from the proposed Sheriff's Facility as possibly by expanding to the proposed basin that is part of the Stella Road project. Per County request, this will be accomplished with a dry bottom basin.
3. Three options for accomplishing these tasks are presented as following:
 1. Expanding the existing basin and utilizing the existing FBC property.
 2. Utilize existing FBC property and Fort Bend County Drainage District (FBCDD) property
 3. Utilize FBC property, FBCDD property and Fort Bend County Transportation Department property
4. Additional hydrology and hydraulic work as related to the items added above, as further outlined in the attached scope of work from RG Miller.
5. Additional survey as related to the items added above, as further outlined in the attached scope of work from Landtech, Inc.
6. Additional geotechnical services as related to the items added above, as further outlined in the attached scope of work from Aviles Engineering Corporation.

CIVIL DESIGN SERVICES

McDonough Engineering Corporation proposes to complete the following tasks:

- Revise existing Index, Project Layout, Proposed Section located at the outfall, and Plan and Profile Sheets to updated detention basin limits, additional storm sewer connections, and outfall locations.
- Prepare a 95% submittal and address any comments before preparing the 100% signed and sealed submittal.
- Coordinate with subconsultants, including RG Miller, Landtech, and Aviles

The table breaking down the fee for each of the three options is as follows.

Consultant	Option 1 (Basic Service)	Option 2 (Optional Additional)	Option 3 (Optional Additional)
Total	\$160,732.80	\$25,226.35	\$37,795.65

If you have any questions, please feel free to reach out.

Best Regards,



Austin McLean, P.E.
Project Manager
austinm@mectx.com

**Stella Road - Cottonwood School Road to Band Road - Precinct 1
Scope Amendment No 1 - Revised Level of Effort**

McDonough Engineering Corporation

9/19/2023

	<u>Proj. Man.</u>	<u>Engineer</u>	<u>Senior Designer</u>	<u>Sr. CADD</u>	<u>CADD</u>	<u>Clerical</u>	<u>Fee</u>	<u>Total Hours per Task</u>	<u>Number of sheets</u>	<u>Hour per Sheet</u>
Option 1										
Phase II - Final Design Phase and Drainage Study Update										
Project Administration	20	10					\$ 7,600.00	30	N/A	N/A
Attend Progress Meetings (Bi-weekly for 5 months)	10	10					\$ 4,900.00	20	N/A	N/A
Extended review of utilities and development adjacent to project	5	5					\$ 2,450.00	10	N/A	N/A
QA/QC										
Internal QA/QC (2 submittals)	2	4					\$ 1,420.00	6	N/A	N/A
Construction Documents										
Plans										
Index of Sheets					1		\$ 105.00	1	1	1.0
Survey Control Sheets		1			2		\$ 430.00	3	2	1.5
Project Layout Sheet	1				2		\$ 480.00	3	1	3.0
Proposed Lateral Cross Sections	2	2	2	4	8		\$ 2,720.00	18	1	18.0
Insert Drainage Sheets				1			\$ 125.00	1	2	0.5
Earthwork Table	1	1			2		\$ 700.00	4	1	4.0
Construction Cost Estimate	1	2					\$ 710.00	3	N/A	N/A
Update project manual quantities	1	2					\$ 710.00	3	N/A	N/A
Add step to phase 1 of traffic control plan.	3	5		10	15		\$ 4,735.00	33	4	8.3
Option 2										
Phase II - Final Design Phase and Drainage Study Update										
Project Administration	5	5					\$ 2,450.00	10	1	10.0
Plans										
Removal Plans (culvert removal etc.)	1	2	2	2	2		\$ 1,570.00	9	2	4.5
Option 3										
Phase II - Final Design Phase and Drainage Study Update										
Project Administration	7	7					\$ 3,430.00	14	1	14.0
Plans										
Removal Plans (fence removal)	1	1	2	2	3		\$ 1,455.00	9	2	4.5
Plan and Profile (1"=40' scale 11x17) (ditch revisions inflow to basin)	1	2	2	3	4		\$ 1,905.00	12	2	6.0
Cross Sections (ditch updates for new inflow possible MEC has ditch to intermediary manhole)	1	2	2	4	4		\$ 2,030.00	13	2	6.5

Total Hours Phase II - Final Design Phase	46	42	2	15	30	0	Total Hours	135
Rate (\$/HR)	270	220	200	125	105	75	Total Sheets	22
Phase II - Design Phase Subtotal (Lump Sum) Option 1	\$ 12,420.00	\$ 9,240.00	\$ 400.00	\$ 1,875.00	\$ 3,150.00	\$ -	\$ 27,085.00	
	46%	34%	1%	7%	12%	0.0%		
Total Hours Phase II - Final Design Phase	6	7	2	2	2	0	Total Hours	19

**Stella Road - Cottonwood School Road to Band Road - Precinct 1
Scope Amendment No 1 - Revised Level of Effort**

McDonough Engineering Corporation

9/19/2023

	<u>Proj. Man.</u>	<u>Engineer</u>	<u>Senior Designer</u>	<u>Sr. CADD</u>	<u>CADD</u>	<u>Clerical</u>	<u>Fee</u>	<u>Total Hours</u>	<u>Number of</u>	
Rate (\$/HR)	270	220	200	125	105	75	Total Sheets	per Task	sheets	Hour per Sheet
Phase II - Design Phase Subtotal (Lump Sum) Option 2	\$ 1,620.00	\$ 1,540.00	\$ 400.00	\$ 250.00	\$ 210.00	\$ -	\$ 4,020.00			
	6%	6%	1%	1%	1%	0.0%				
Total Hours Phase II - Final Design Phase	10	12	6	9	11	0	Total Hours		48	
Rate (\$/HR)	270	220	200	125	105	75	Total Sheets		14	
Phase II - Design Phase Subtotal (Lump Sum) Option 3	\$ 2,700.00	\$ 2,640.00	\$ 1,200.00	\$ 1,125.00	\$ 1,155.00	\$ -	\$ 8,820.00			
	10%	10%	4%	4%	4%	0.0%				
Survey - LandTech, Inc.										
Topographic Survey Option 1							\$ 4,084.00			
Topographic Survey Option 2							\$ 2,731.00			
Topographic Survey Option 3							\$ 3,061.00			
Subconsultant Coordination 10% Option 1							\$ 408.40			
Subconsultant Coordination 10% Option 2							\$ 273.10			
Subconsultant Coordination 10% Option 3							\$ 306.10			
Survey Subtotal (Lump Sum) Option 1							\$ 4,492.40			
Survey Subtotal (Lump Sum) Option 2							\$ 3,004.10			
Survey Subtotal (Lump Sum) Option 3							\$ 3,367.10			
Geotechnical Report - Aviles Engineering Corporation										
Detention Basin Supplemental (additional bores, updating report) Option 1							\$ 23,140.00			
Detention Basin Supplemental (additional bores, updating report) Option 2							\$ 5,657.50			
Detention Basin Supplemental (additional bores, updating report) Option 3							\$ 7,191.50			
Subconsultant Coordination 10% Option 1							\$ 2,314.00			
Subconsultant Coordination 10% Option 2							\$ 565.75			
Subconsultant Coordination 10% Option 3							\$ 719.15			
Geotechnical Report Subtotal (Lump Sum) Option 1							\$ 25,454.00			
Geotechnical Report Subtotal (Lump Sum) Option 2							\$ 6,223.25			
Geotechnical Report Subtotal (Lump Sum) Option 3							\$ 7,910.65			
Civil Design Services - R. G. Miller Engineers, Inc.										
Revise Drainage Analysis and Revise Detention Design							\$ 42,896.00			
Detention Basin Design Option 1							\$ 51,378.00			
Detention Basin Design Option 2							\$ 10,890.00			
Detention Basin Design Option 3							\$ 16,089.00			
Subconsultant Coordination 10% Drainage analysis							\$ 4,289.60			
Subconsultant Coordination 10% Option 1							\$ 5,137.80			
Subconsultant Coordination 10% Option 2							\$ 1,089.00			
Subconsultant Coordination 10% Option 3							\$ 1,608.90			
Drainage Analysis (Lump Sum)							\$ 47,185.60			
Detention Basin Design Option 1							\$ 56,515.80			
Detention Basin Design Option 2							\$ 11,979.00			
Detention Basin Design Option 3							\$ 17,697.90			
Subtotal Option 1							\$ 160,732.80			
Subtotal Option 2							\$ 25,226.35			

Stella Road - Cottonwood School Road to Band Road - Precinct 1
 Scope Amendment No 1 - Revised Level of Effort

McDonough Engineering Corporation

9/19/2023

	<u>Proj. Man.</u>	<u>Engineer</u>	<u>Senior Designer</u>	<u>Sr. CADD</u>	<u>CADD</u>	<u>Clerical</u>	<u>Fee</u>	<u>Total Hours</u>	<u>Number of</u>	
								<u>per Task</u>	<u>sheets</u>	<u>Hour per Sheet</u>
Subtotal Option 3							\$ 37,795.65			
Total Professional Services Budget							\$ 223,754.80			

September 15, 2023

Austin McLean, P.E.
McDonough Engineering Corporation
5625 Schumacher Lane
Houston, TX 77057

RE: Stella Road Improvements; Project Number: 20116
Drainage Studies and Detention Basin Design Proposal

Dear Mr. McLean,

R. G. Miller Engineers, Inc. (RGME) is respectfully submitting this proposal for drainage studies to support the roadway improvements for the above Fort Bend County (FBC) project. The following scope of work (SOW) items have been identified to support the project. For a detailed description of scope for each task, refer to the attached Exhibit A1.

- **Task 1: Stella Road Drainage Analysis** is part of the basic SOW to identify and document if the existing detention facilities in the area accounted for the proposed improvements. This task will update existing drainage areas, determine requirements for the new outfall(s), update proposed drainage areas, and update flow rates and runoff hydrographs. The effort will also include preparing a letter report for review and approval.
- **Task 2: Detention Basin Detailed Design** is part of the basic SOW to design and prepare engineering drawings for the Detention Basin design of the below options as required.
 - **Option 1** – Utilizing the existing FBC property (Exhibit B).
 - **Option 2** – Utilizing the existing FBC and Fort Bend County Drainage District (FBCDD) property (Exhibit C).
 - **Option 3** – Utilizing the existing FBC, FBCDD, and Fort Bend County Transportation Department property (Exhibit D).

Please find the following attached:

- Exhibit A1: Scope of Services
- Exhibit B: Option 1 Layout
- Exhibit C: Option 2 Layout
- Exhibit D: Option 3 Layout
- Attachment A: Level of Efforts
- Attachment B: Schedule

The proposed fees are summarized below:

Task	Proposed Fixed Fee
Stella Road Drainage Analysis	
A.1 Stella Road Drainage Analysis	\$ 42,896.00
Detention Basin Detailed Design	
OPTION 1: FBC PROPERTY	
B.1 Project Management	\$ 6,435.00
B.2 90% Submittal	\$ 34,179.00
B.3 100% Submittal	\$ 10,764.00
Subtotal:	\$ 51,378.00
OPTION 2: FBCDD PROPERTY	
C.2 90% Submittal	\$ 7,353.00
C.3 100% Submittal	\$ 3,537.00
Subtotal:	\$ 10,890.00
OPTION 3: FBCDD & FBC PUBLIC TRANSPORTATION PROPERTY	
D.2 90% Submittal	\$ 10,452.00
D.3 100% Submittal	\$ 5,637.00
Subtotal:	\$ 16,089.00

Note the above fees assume that the basins are to be dry bottom basins per email from Binkley and Barfield on August 16, 2023. If the basin designs are changed to wet bottom basins, additional fees may be requested.

Below are the total design fees for each of the options:

- Option 1 (Exhibit B) - \$51,378.00
- Option 2 (Exhibit C) - \$51,378.00 + \$10,890.00 = \$62,268.00
- Option 3 (Exhibit D) - \$51,378.00 + \$16,089.00 = \$67,467.00

If you have any questions or require further information regarding the above, please do not hesitate to contact me.

Sincerely,
R. G. Miller Engineers, Inc.



Mark Rotz, P.E.
Project Manager

EXHIBIT A1

SCOPE OF SERVICES

Fort Bend County Engineering Department – 20116 – Stella Road

R. G. Miller Engineers, Inc. (RGME or Design Consultant (DC) as Drainage Studies Sub-Consultant to McDonough Engineering Corporation (McDonough or Client) will provide the following professional services to McDonough for Fort Bend County Engineering Department (FBCED) for Project Number 20116, Stella Road from Cottonwood School Road to Band Road. McDonough is the prime consultant for FBCED in this project. The Stella Road improvement project involves approximately 1.5 miles of roadway reconstruction. The project will reconstruct the existing asphalt road to a 2-lane with 6-foot shoulders. The proposed storm sewer will be open ditch.

Fort Bend County has also requested to provide detention mitigation for the new Sheriff's Office Facility. The effort will include updating the previously approved drainage report to include additional mitigation. The effort will also include the expansion of the original detention basin and possibly additional basins to provide mitigation for the Stella Road improvements and the Sheriff's Office Facility.

The Stella Road improvement project involves approximately 1.5 miles of roadway. The existing 2-lane, crowned asphalt roadway with roadside ditches will add approximately 6 feet shoulder to each lane. Storm runoffs from the Stella Road improvement section mainly drains to Seabourne Creek through the existing tributary channel and roadside ditches of Cottonwood School Road, W. Fairground Road, and Band Road. The proposed detention plan for the project is to increase the existing detention pond and possibly s for the proposed expansion project and the new Sheriff's Office Facility.

New developments in Fort Bend County are required to satisfy three (3) major requirements. These requirements are summarized below.

- Storm water detention is required for new developments in sufficient quantity to offset potential increases in downstream peak runoff rates. For the proposed development, the minimal detention rate is expected to be between 0.85 and 1.00 acre-feet of storage per acre of development. For this project, only the increased impervious cover for the proposed project should require storm water detention.
- Excavation is required to completely offset the volume of any fill placed within the 100-year floodplain. Since the subject tract is located completely outside of the 100-year and 500-year floodplain, the floodplain mitigation is not required for this project.
- Offsetting conveyance must be provided to compensate for the potential effects of on-site flood levels. Since the subject tract is located completely outside of the 100-year and 500-year floodplain, the conveyance analysis is not required for this project.

The drainage analysis will follow the effective Fort Bend County Interim Atlas 14 Design Criteria Manual per Fort Bend County Drainage District. It is understood that a simplified method will be conducted for the drainage model and Atlas 14 rain data will be compared to the model to acquire the necessary detention for the proposed roadway expansion.

To address the above requirements and document that adequate drainage and detention (if required) are provided for proposed roadway improvements, the ensuing sections define required scope of work items per task.

Task 1: Stella Road Drainage Analysis

1. Gather and review available information on proposed development and surrounding areas, including information from Fort Bend County.
2. Update the existing drainage areas across the site, add new drainage areas, and develop hydraulic parameters.
3. Determine the requirements for the new and revised detention outfalls.

4. Update the localized hydrology model to include added drainage areas. Compute preproject conditions flow rates and runoff hydrographs from the property.
5. Update the proposed drainage areas across the site and contributing drainage areas based on the proposed development plan. Update hydraulic parameters for the proposed drainage areas.
6. Compute the post-project flow rates and runoff hydrographs without detention for each option.
7. Compare pre-project and post-project hydrographs at the project outfalls to estimate the minimum detention storage volume requirement.
8. Update the pond grading plan and create new preliminary pond configurations. Specify outfall configurations and create elevation-storage-discharge relationships for the facilities.
9. Compute proposed conditions flow rates and compare proposed discharges from the outfall(s).
10. Revise the configurations for the detention basin(s) and other structures as needed to eliminate any adverse impacts on downstream flow rates.
11. Prepare a letter report with sufficient text, exhibits, and technical appendices to completely illustrate the results of the investigation.
12. Attend up to 2 in-person meetings and visit the site.

Task 2: Detention Basin Detailed Design

1. Attend meetings as requested from the Client.
2. Prepare engineering drawings in accordance with the latest FBCED design manual and standards. Construction drawings shall be prepared so they are legible and to scale when printed to the standard 11"x17" size paper. Provide quantities associated with the detention basin construction to Client. Conduct Quality Assurance/Quality Control (QA/QC) procedure for each submittal.
3. Client shall provide the geotechnical investigations findings for the proposed detention basin(s).
4. Each submittal shall include the following drawings:
 - a) Existing Conditions
 - b) Demolition Plan
 - c) Drainage Area and Hydraulic Calculations Sheets
 - d) Proposed Layout and Grading
 - e) Geometric Layout and Point Table
 - f) Typical Sections
 - g) Outfall Plan and Profile
 - h) Storm Water Pollution Prevention Plan
 - i) Detention basin quantities
 - j) Response to comments (as applicable)

LEVEL OF EFFORT (LOE) FEE ESTIMATE FOR DRAINAGE ANALYSIS



PROJECT TITLE: STELLA ROAD

Revision No.: 0	Senior Project Manager	Senior Hydrologist	Project Engineer	Associate Engineer	GIS Specialist	Admin Assistant	Total Hours	Total Cost
September 15, 2023								
DIRECT LABOR COST	\$ 87	\$ 69	\$ 52	\$ 35	\$ 49	\$ 32		
HOURLY RATE INCLUDING MULTIPLIER (3X)	\$ 260	\$ 208	\$ 155	\$ 105	\$ 148	\$ 97		
A.1 Stella Road Drainage Analysis								
Gather & Review Information	2	2	4	0	4	0	12	\$ 2,148.00
Update Existing Drainage Areas	1	2	4	0	2	0	9	\$ 1,592.00
Identify Outfalls and Capacities	1	2	4	0	0	0	7	\$ 1,296.00
Update Existing Hydrologic Model	2	2	8	0	0	0	12	\$ 2,176.00
Update Proposed Drainage Areas	1	2	4	0	2	0	9	\$ 1,592.00
Compute Developed Flows	0	2	4	0	0	0	6	\$ 1,036.00
Estimate Detention Size	4	8	24	0	0	0	36	\$ 6,424.00
Create Detention and Storm Sewer Tables	2	4	12	0	0	0	18	\$ 3,212.00
Model Proposed Configuration and Quantify Results	2	8	24	0	0	0	34	\$ 5,904.00
Adjust Proposed Design to Mitigate Impacts	4	8	30	0	0	0	42	\$ 7,354.00
Prepare Updated Study Report	4	4	16	0	8	4	36	\$ 5,924.00
Project Meetings (Assume 3 meetings)	6	6	6	0	0	0	18	\$ 3,738.00
Miscellaneous Expenses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$ 500.00
Total Hours for A.1 Stella Road Drainage Analysis	29	50	140	0	16	4	239	
Total Fee for A.1 Stella Road Drainage Analysis	\$ 7,540	\$ 10,400	\$ 21,700	\$ -	\$ 2,368	\$ 388		\$ 42,896.00

LEVEL OF EFFORT (LOE) FEE ESTIMATE FOR DESIGN SERVICES

PROJECT TITLE: STELLA ROAD



Revision No.: 0	Senior Project Manager	Project Manager	Project Engineer	Graduate Engineer 1	Graduate Engineer 2	Designer	CADD Technician	Contract Administrator	Clerical Support	Total Hours	Total Cost
September 15, 2023											
DIRECT LABOR COST	\$ 75	\$ 65	\$ 50	\$ 40	\$ 32	\$ 37	\$ 29	\$ 38	\$ 25		
HOURLY RATE INCLUDING MULTIPLIER (3X)	\$ 225	\$ 195	\$ 150	\$ 120	\$ 96	\$ 111	\$ 87	\$ 114	\$ 75		
OPTION 1: FBC PROPERTY											
B.1 Project Management											
Coordination and Project Administration	3	21	0	0	0	0	0	0	9	33	\$ 5,445.00
Progress Meetings (Estimate 2 total)	0	2	4	0	0	0	0	0	0	6	\$ 990.00
Total Hours for B.1 Project Management	3	23	4	0	0	0	0	0	9	39	
Total Fee for B.1 Project Management	\$ 675	\$ 4,485	\$ 600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 675	\$ 6,435.00
B.2 90% Submittal											
Proposed Layout and Grading	1	6	12	15	0	24	0	0	0	58	\$ 7,659.00
Geometric Layout and Point Table	0	2	6	12	0	18	0	0	0	38	\$ 4,728.00
Typical Sections	0	1	6	9	0	12	0	0	0	28	\$ 3,507.00
Inflow Plan and Profile	0	2	6	9	0	12	0	0	0	29	\$ 3,702.00
Outfall Plan and Profile	0	2	6	9	0	12	0	0	0	29	\$ 3,702.00
Overflow Weir Plan and Profile	0	2	6	9	0	12	0	0	0	29	\$ 3,702.00
Drainage Area and Hydraulic Calculations Sheet	0	0	1	2	0	3	0	0	0	6	\$ 723.00
Stormwater Pollution Prevention Plan	0	1	3	3	0	6	0	0	0	13	\$ 1,671.00
Calculate Quantities	0	1	3	6	0	0	0	0	0	10	\$ 1,365.00
QA/QC	6	6	6	0	0	0	0	0	0	18	\$ 3,420.00
Total Hours for B.2 90% Submittal	7	23	55	74	0	99	0	0	0	258	
Total Fee for B.2 90% Submittal	\$ 1,575	\$ 4,485	\$ 8,250	\$ 8,880	\$ -	\$ 10,989	\$ -	\$ -	\$ -		\$ 34,179.00
B.3 100% Submittal											
Address 90% Comments	1	3	9	12	0	15	0	0	0	40	\$ 5,265.00
Complete Final PS&E Package	0	1	3	6	0	9	0	0	0	19	\$ 2,364.00
Calculate Quantities	0	1	2	3	0	0	0	0	0	6	\$ 855.00
QA/QC	4	4	4	0	0	0	0	0	0	12	\$ 2,280.00
Total Hours for B.3 100% Submittal	5	9	18	21	0	24	0	0	0	77	
Total Fee for B.3 100% Submittal	\$ 1,125	\$ 1,755	\$ 2,700	\$ 2,520	\$ -	\$ 2,664	\$ -	\$ -	\$ -		\$ 10,764.00
Total Hours for Phase II Basic Services	15	55	77	95	0	123	0	0	9	374	
Total Fee for Phase II Basic Services	\$ 3,375	\$ 10,725	\$ 11,550	\$ 11,400	\$ -	\$ 13,653	\$ -	\$ -	\$ 675		\$ 51,378.00

LEVEL OF EFFORT (LOE) FEE ESTIMATE FOR DESIGN SERVICES

PROJECT TITLE: STELLA ROAD



Revision No.: 0	Senior Project Manager	Project Manager	Project Engineer	Graduate Engineer 1	Graduate Engineer 2	Designer	CADD Technician	Contract Administrator	Clerical Support	Total Hours	Total Cost
September 15, 2023											
DIRECT LABOR COST	\$ 75	\$ 65	\$ 50	\$ 40	\$ 32	\$ 37	\$ 29	\$ 38	\$ 25		
HOURLY RATE INCLUDING MULTIPLIER (3X)	\$ 225	\$ 195	\$ 150	\$ 120	\$ 96	\$ 111	\$ 87	\$ 114	\$ 75		
OPTION 2: FBCDD PROPERTY											
C.2 90% Submittal											
Proposed Layout and Grading	0	1	2	0	0	12	0	0	0	15	\$ 1,827.00
Geometric Layout and Point Table	0	0	2	0	0	6	0	0	0	8	\$ 966.00
Typical Sections	0	1	2	0	0	6	0	0	0	9	\$ 1,161.00
Outfall Plan and Profile	0	1	2	0	0	6	0	0	0	9	\$ 1,161.00
Stormwater Pollution Prevention Plan	0	0	1	0	0	3	0	0	0	4	\$ 483.00
Calculate Quantities	0	1	2	0	0	0	0	0	0	3	\$ 495.00
QA/QC	3	3	0	0	0	0	0	0	0	6	\$ 1,260.00
Total Hours for C.2 90% Submittal	3	7	11	0	0	33	0	0	0	54	
Total Fee for C.2 90% Submittal	\$ 675	\$ 1,365	\$ 1,650	\$ -	\$ -	\$ 3,663	\$ -	\$ -	\$ -		\$ 7,353.00
C.3 100% Submittal											
Address 90% Comments	0	1	2	0	0	9	0	0	0	12	\$ 1,494.00
Complete Final PS&E Package	0	0	1	0	0	3	0	0	0	4	\$ 483.00
Calculate Quantities	0	0	2	0	0	0	0	0	0	2	\$ 300.00
QA/QC	3	3	0	0	0	0	0	0	0	6	\$ 1,260.00
Total Hours for C.3 100% Submittal	3	4	5	0	0	12	0	0	0	24	
Total Fee for C.3 100% Submittal	\$ 675	\$ 780	\$ 750	\$ -	\$ -	\$ 1,332	\$ -	\$ -	\$ -		\$ 3,537.00
Total Hours for Phase II Basic Services	6	11	16	0	0	45	0	0	0	78	
Total Fee for Phase II Basic Services	\$ 1,350	\$ 2,145	\$ 2,400	\$ -	\$ -	\$ 4,995	\$ -	\$ -	\$ -		\$ 10,890.00

LEVEL OF EFFORT (LOE) FEE ESTIMATE FOR DESIGN SERVICES

PROJECT TITLE: STELLA ROAD



Revision No.: 0	Senior Project Manager	Project Manager	Project Engineer	Graduate Engineer 1	Graduate Engineer 2	Designer	CADD Technician	Contract Administrator	Clerical Support	Total Hours	Total Cost
September 15, 2023											
DIRECT LABOR COST	\$ 75	\$ 65	\$ 50	\$ 40	\$ 32	\$ 37	\$ 29	\$ 38	\$ 25		
HOURLY RATE INCLUDING MULTIPLIER (3X)	\$ 225	\$ 195	\$ 150	\$ 120	\$ 96	\$ 111	\$ 87	\$ 114	\$ 75		
OPTION 3: FBCDD & FBC PUBLIC TRANSPORTATION PROPERTY											
D.2 90% Submittal											
Proposed Layout and Grading	0	1	2	3	0	9	0	0	0	15	\$ 1,854.00
Geometric Layout and Point Table	0	0	1	3	0	6	0	0	0	10	\$ 1,176.00
Typical Sections	0	1	1	2	0	6	0	0	0	10	\$ 1,251.00
Outfall Plan and Profile	0	1	1	3	0	6	0	0	0	11	\$ 1,371.00
Drainage Area and Hydraulic Calculations Sheet	0	0	1	1	0	2	0	0	0	4	\$ 492.00
Stormwater Pollution Prevention Plan	0	0	1	1	0	3	0	0	0	5	\$ 603.00
Calculate Quantities	0	1	2	3	0	0	0	0	0	6	\$ 855.00
QA/QC	5	5	5	0	0	0	0	0	0	15	\$ 2,850.00
Total Hours for D.2 90% Submittal	5	9	14	16	0	32	0	0	0	76	
Total Fee for D.2 90% Submittal	\$ 1,125	\$ 1,755	\$ 2,100	\$ 1,920	\$ -	\$ 3,552	\$ -	\$ -	\$ -		\$ 10,452.00
D.3 100% Submittal											
Address 90% Comments	0	1	2	3	0	9	0	0	0	15	\$ 1,854.00
Complete Final PS&E Package	0	1	1	2	0	3	0	0	0	7	\$ 918.00
Calculate Quantities	0	1	1	2	0	0	0	0	0	4	\$ 585.00
QA/QC	4	4	4	0	0	0	0	0	0	12	\$ 2,280.00
Total Hours for D.3 100% Submittal	4	7	8	7	0	12	0	0	0	38	
Total Fee for D.3 100% Submittal	\$ 900	\$ 1,365	\$ 1,200	\$ 840	\$ -	\$ 1,332	\$ -	\$ -	\$ -		\$ 5,637.00
Total Hours for Phase II Basic Services	9	16	22	23	0	44	0	0	0	114	
Total Fee for Phase II Basic Services	\$ 2,025	\$ 3,120	\$ 3,300	\$ 2,760	\$ -	\$ 4,884	\$ -	\$ -	\$ -		\$ 16,089.00

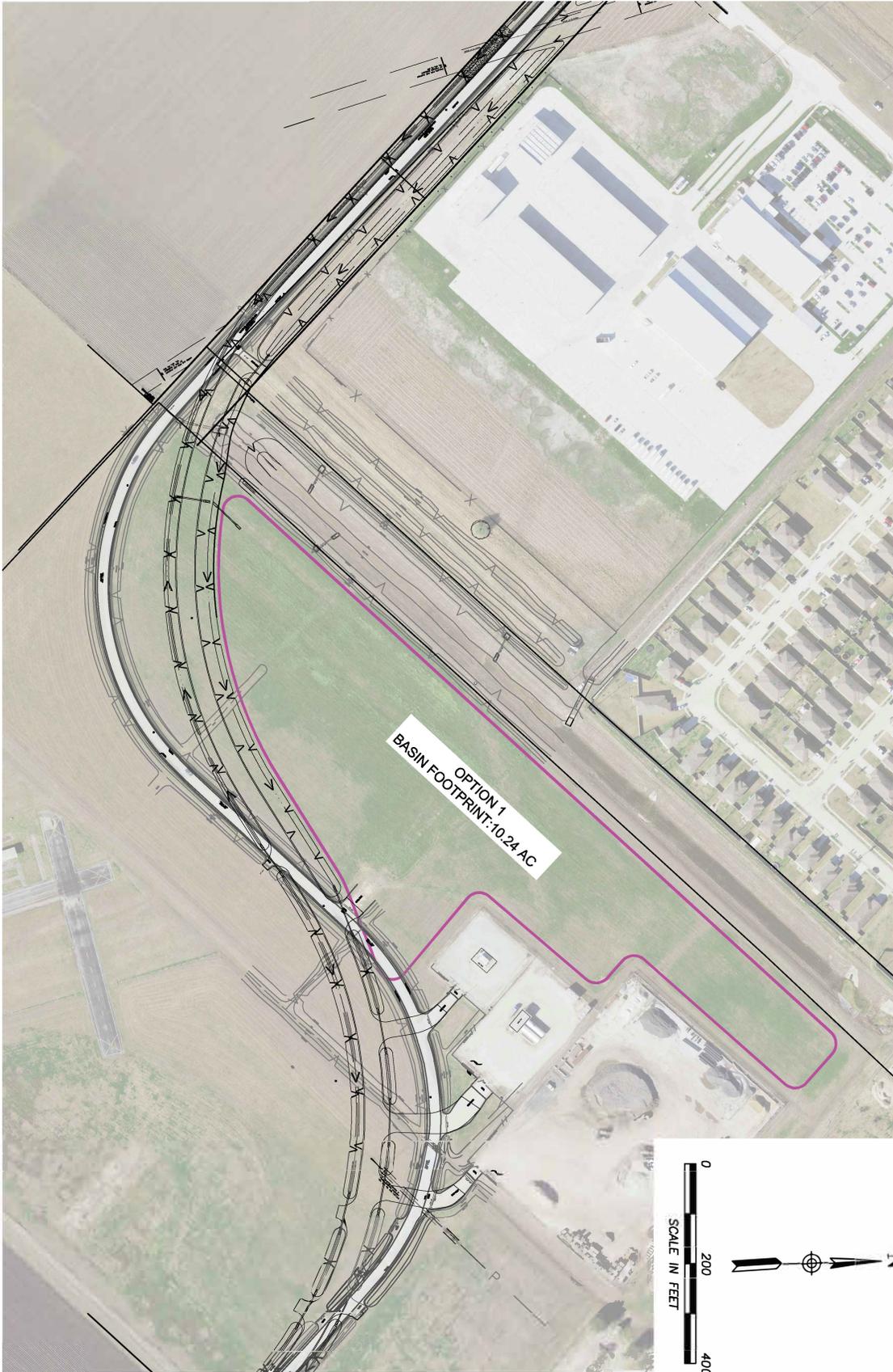


EXHIBIT B

DATE: 9/15/2023



16340 Park Ten Place
Suite 350
Houston, Texas 77084
(713) 461-9600
TEXAS FIRM REGISTRATION NO. F-487

EXH - STELLA ROAD BASIN EXTENSION OPTION 1

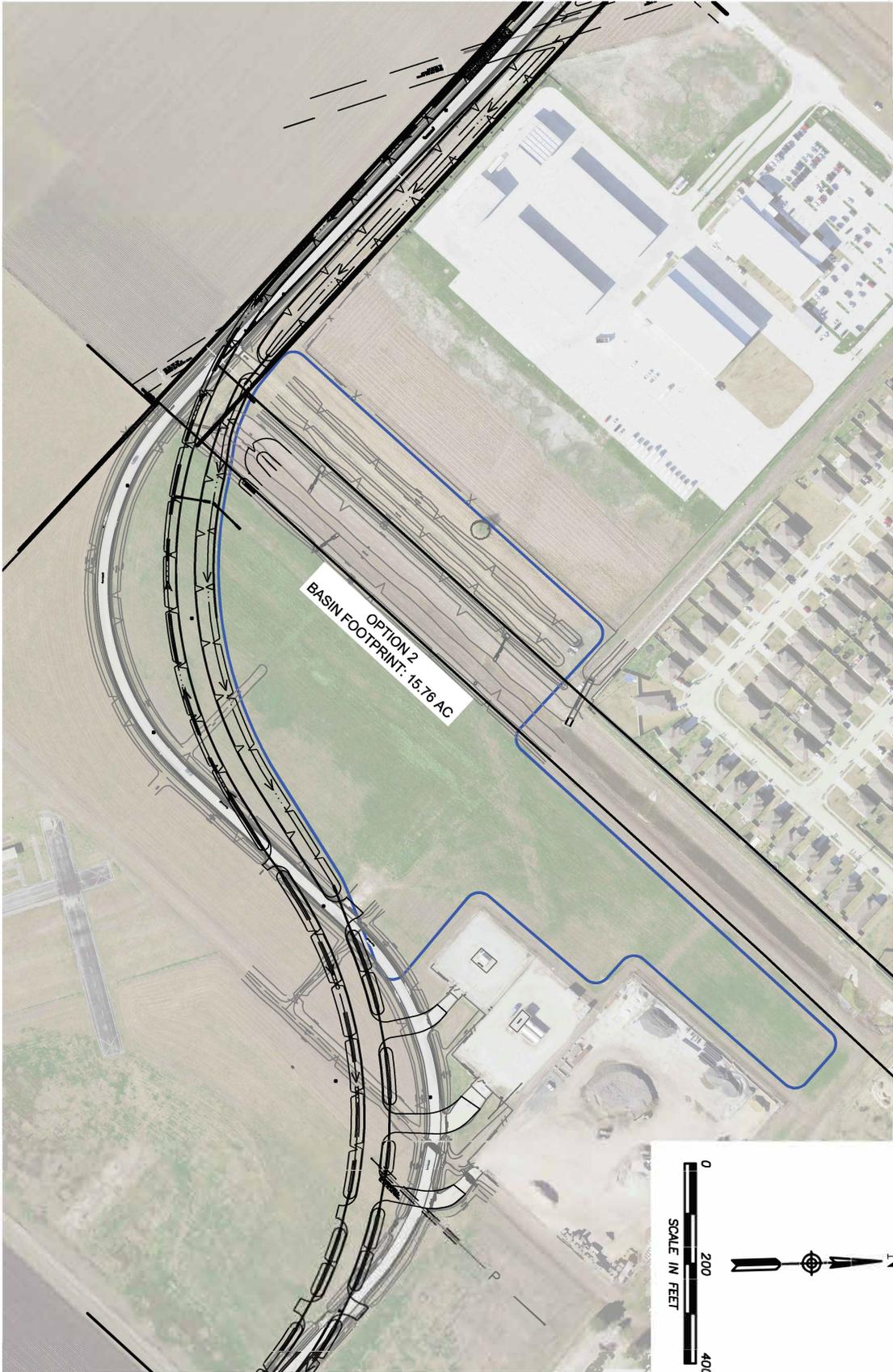


EXHIBIT C

DATE: 9/15/2023



16340 Park Ten Place
Suite 350
Houston, Texas 77084
(713) 461-9800
TEXAS FIRM REGISTRATION NO. F-487

EXH - STELLA ROAD BASIN EXTENSION OPTION 2

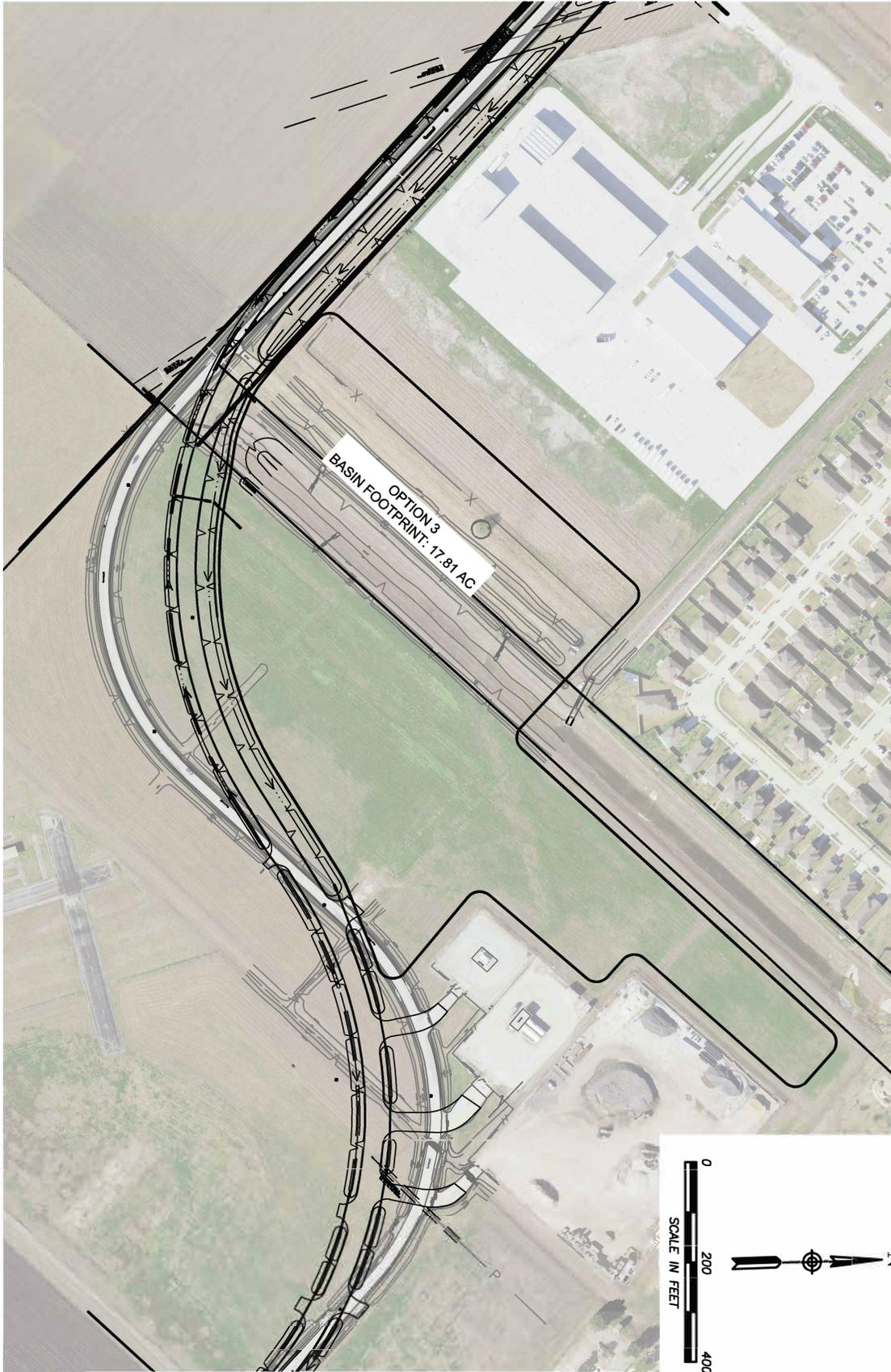


EXHIBIT D

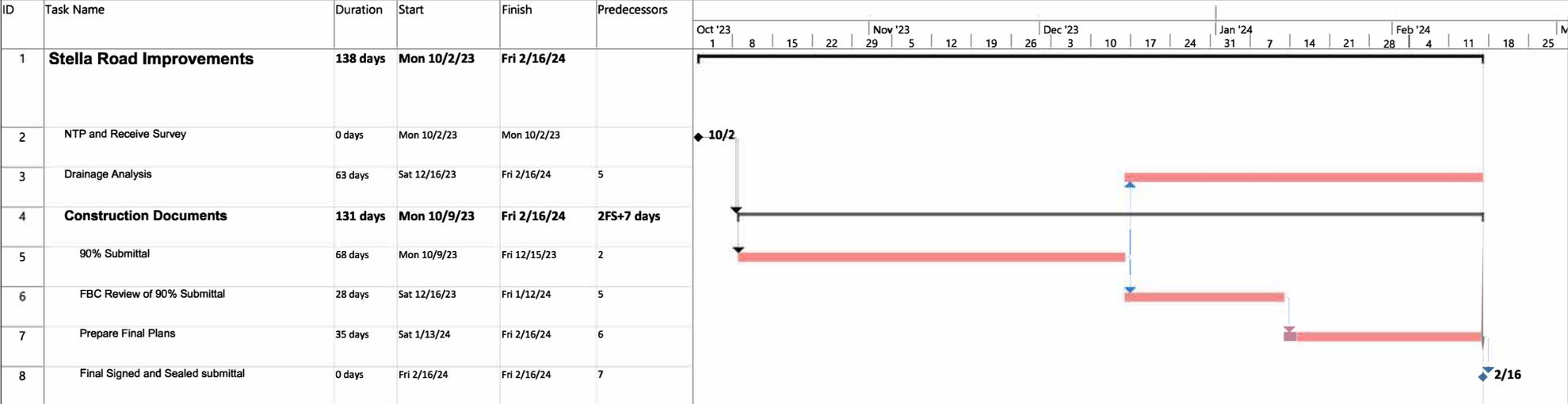
DATE: 9/15/2023



16340 Park Ten Place
Suite 350
Houston, Texas 77084
(713) 461-9800
TEXAS FIRM REGISTRATION NO. F-487

EXH - STELLA ROAD BASIN EXTENSION OPTION 3

**Stella Road Improvements
Schedule**



July 24, 2023

Mr. Austin McLean, P.E.
Project Manager
McDonough Engineering
5625 Schumacher Lane
Houston, Texas 77057

RE: FBCSO Training Facility Campus

Dear Mr. McLean:

It is my pleasure to submit the following proposal for providing professional surveying service for the above referenced project. The scope of work will be as follows:

Topographic survey of option one at 50 foot grid. Provide CAD file of the field and update the previously completed right of way and topographic survey sheets.

2 Man Field Party.....	12 hours x \$165.00=	\$1,980.00
Survey Technician.....	3 hours x \$115.00=	345.00
CADD.....	12 hours x \$102.00=	1,224.00
Project Surveyor.....	2 hours x \$170.00=	340.00
Project Manager.....	1 hours x \$195.00=	<u>195.00</u>
		\$4,084.00

Topographic survey of option two at 50 foot grid. Provide CAD file of the field and update the previously completed right of way and topographic survey sheets.

2 Man Field Party.....	8 hours x \$165.00=	\$1,320.00
Survey Technician.....	2 hours x \$115.00=	230.00
CADD.....	8 hours x \$102.00=	816.00
Project Surveyor.....	1 hour x \$170.00=	170.00
Project Manager.....	1 hour x \$195.00=	<u>195.00</u>
		\$2,731.00

Topographic survey of option three at 50 foot grid. Provide CAD file of the field and update the previously completed right of way and topographic survey sheets.

2 Man Field Party.....	10 hours x \$165.00=	\$1,650.00
Survey Technician.....	2 hours x \$115.00=	230.00
CADD.....	8 hours x \$102.00=	816.00

Project Surveyor.....1 hour x \$170.00= 170.00
 Project Manager.....1 hour x \$195.00= 195.00
 \$3,061.00

COST TABLE				
TOPO SURVEY OPTIONS	OPTION 1	OPTION 2	OPTION 3	TOTAL COST
1. OPTION 1	\$4,084.00	-----	-----	\$4,084.00
2. OPTION 1+2	\$4,084.00	\$2,731.00	-----	\$6,815.00
3. OPTION 1+2+3	\$4,084.00	\$2,731.00	\$3,061.00	\$9,876.00

Thank you for the opportunity to submit this proposal.

Sincerely,



Paul P. Kwan, R.P.L.S., President

S:\Users\Receptionist\FBCSO Training Facility Campus 08/16/2023



August 18, 2023

Mr. Austin McLean, P.E.
McDonough Engineering Corporation
5625 Schmuacher Lane
Houston, Texas 77057

Re: Geotechnical Investigation Proposal
Additional Borings for Stella Road Detention Pond
Fort Bend County, Texas
AEC Proposal No. G2023-07-10R1
AEC Project No. G126-21

Dear Mr. McLean,

Aviles Engineering Corporation (AEC) is pleased to present this geotechnical investigation proposal to perform additional borings for Fort Bend County (FBC) Precinct 1's proposed Stella Road Reconstruction project from Cottonwood School Road to Band Road, in Fort Bend County, Texas. AEC understands that a new location and perimeter of the proposed detention pond for the project is under consideration, which will require a geotechnical investigation. Based on the preliminary information provided, there are three properties under consideration, identified as Options 1 through 3, respectively. According to McDonough Engineering Corporation (MEC), Option 1 will be the base scope, and Options 2 and 3 may be added to the base scope. AEC understands the pond will have a maximum depth of 7 feet and will be dry bottom when not in use. AEC will incorporate previous soil borings performed (AEC Project G126-21, Borings B-6 through B-9, B-18, B-22, and B-23) that are in the vicinity of the proposed pond location.

AEC proposes to drill up to a total of 9 new borings (covering all three options, Borings B-24 through B-32), each to a depth of 14 feet. Four borings (Borings B-24 through B-27) for Option 1 (base scope), two borings (Borings B-28 and B-29) for Option 2, and three borings (Borings B-30 through B-32) for Option 3. A Proposed Boring Location plan (showing both existing and proposed borings) is presented in the Attachments. We will perform a site reconnaissance prior to drilling and mark the boring locations. We will contact the Texas 811 System to confirm utility locations; however, Texas 811 does not locate water, sanitary, or storm sewer lines. AEC also requests that MEC provide drawings showing the locations of existing utilities (if any) within the project area prior to mobilization of the drill rig. The proposed boring locations may be adjusted in the field as necessary for drill rig access and to avoid conflicts with overhead and known underground utilities. AEC also requests that MEC arrange right of entry access to all properties where the proposed borings will be located. Furthermore, AEC requests that the boring locations be surveyed by others upon completion of drilling.

Based on our previous field work, a buggy-mounted drilling rig will be required to access the boring locations. We will collect samples continuously at 2 foot intervals from the ground surface to the boring termination depth of 14 feet. Undisturbed samples will be obtained of cohesive soils by pushing a Shelby tube (ASTM D-1587). Standard Penetration Test samples will be obtained of granular soils (ASTM D-1586). Representative portions of all soil samples will be sealed, packaged, and transported to our laboratory. We will note any visual evidence or odor indicating hazardous materials if encountered in the samples. Water level readings will be noted during drilling and obtained upon completion of drilling. The borings will be backfilled with bentonite chips upon completion of drilling. AEC requests that the boring locations be surveyed once drilling is completed.

Laboratory testing may consist of moisture contents, Atterberg limits, percentage passing No. 200 sieve, sieve analysis, unconfined compression (UC), and unconsolidated-undrained (UU) triaxial tests depending on the soil types encountered. Crumb dispersion, double hydrometer dispersion, and consolidated-undrained (CU) triaxial tests will also be performed. AEC will prepare a geotechnical engineering report that will include: (i) boring logs showing soil and groundwater conditions encountered; (ii) determination if onsite soils are dispersive; (iii) slope stability analyses on the detention basin, including minimum slope inclination necessary to meet minimum factor of safety requirements; (iv) evaluate if a liner system is required for erosion or dispersive soil protection; (v) evaluate the suitability of excavated soil for re-use as select fill; and (vi) basin excavation and groundwater control recommendations.

The estimated fee for our supplemental services is: **\$23,140.00** for Option 1 (Base Scope), an additional **\$5,657.50** for Option 2, and an additional **\$7,191.50** for Option 3, as presented on the Itemized Fee Estimate in the Attachments. The total fee if all three options are selected is **\$35,989.00**. The fees are based on the following assumptions: (1) the field personnel will use Level D protection during the field exploration; (2) no standby time (weather-related or incurred due to reasons beyond our control) is included; and (3) surveying, environmental testing and evaluation, and construction document review are not included. We will invoice our services on a time and effort basis in accordance with the unit rates shown; the rates assume our services will be provided in 2023-2024.

After we receive notice to proceed and right of entry to the project location has been authorized, we will mark the boring locations and contact Texas 811 to locate and clear utilities. We will mobilize the drill rig within 2 to 3 weeks after the boring locations are marked. Drilling will take approximately 1 to 3 days to complete (depending on which options are selected). The laboratory soil testing will require approximately 4 to 5 weeks after completion of drilling (due to the CU tests, and depending on which options are selected). We will provide a draft geotechnical report approximately 2 weeks after laboratory testing is completed AND necessary project drawings are provided to AEC by MEC. We will provide the final geotechnical report approximately 2 weeks after review comments from MEC are received. The geotechnical reports will be provided as an electronic copy. The provided time frame is an estimate based on AEC's current schedule at the time this proposal was written and will remain valid for 60 days from the date of the proposal. If project authorization is received after 60 days, then the schedule estimated herein may be subject to change.

If any of the project details described in this proposal are incorrect or the scope described or the assumptions listed need to be revised, please inform us immediately so we can revise the proposal, as necessary. The project terms and conditions will be in accordance with the Professional Services Consultant Agreement currently in place between MEC and AEC, dated 05/13/2021. Please issue a new work authorization (referencing this proposal) to authorize AEC to proceed with the services. We appreciate the opportunity to present this proposal and look forward to working with you.

AVILES ENGINEERING CORPORATION
(TBPELS Firm Registration No. F-42)



Wilber L. Wang, P.E.
Senior Engineer

Attachments: Itemized Fee Estimate, Boring Location Plan

ITEMIZED FEE ESTIMATE - Option 1 (Base Scope)

Four Additional Borings (B-24 to B-27)

A. FIELD EXPLORATION	QTY	UNIT		RATE	AMOUNT
Mobilization/Demobilization (Buggy Rig)	1	LS	@	\$950.00	\$950.00
Drill Crew Travel (not including first day)	0	days	@	\$500.00	\$0.00
Coordination & Utility Checking (Project Geologist)	3	hrs.	@	\$165.00	\$495.00
Boring Layout & Site Reconnaissance (Project Geologist)	5	hrs.	@	\$165.00	\$825.00
Boring Logging and Field Supervising (Senior Technician)	10	hrs.	@	\$90.00	\$900.00
Concrete Pavement Coring and Patching (6" dia, 0"-6" thick)	0	ea.	@	\$170.00	\$0.00
Concrete Pavement Coring (6" dia, 6" to 12" thick)	0	in.	@	\$16.00	\$0.00
Asphalt Coring and Patching (6" dia, 0"-6" thick)	0	ea.	@	\$159.00	\$0.00
Asphalt Patching (6" diameter)	0	ea.	@	\$50.00	\$0.00
Soil Drilling w/truck-mounted rig (0'-20' continuous)	56	ft.	@	\$25.00	\$1,400.00
Soil Drilling w/truck-mounted rig (20'-50' intermittent)	0	ft.	@	\$23.00	\$0.00
Backfill Holes (Bentonite Chips)	56	ft.	@	\$12.00	\$672.00
Surcharge for Drilling with Buggy Rig	56	ft.	@	\$10.00	\$560.00
Metal Cover for Piezometers	0	ea.	@	\$100.00	\$0.00
Installing Piezometers	0	ft.	@	\$24.00	\$0.00
Piezometer Monitoring (Senior Technician)	0	hrs.	@	\$90.00	\$0.00
Plug and Abandon Piezometers	0	ea.	@	\$20.00	\$0.00
Standby Time (Drill Crew)	0	hrs.	@	\$300.00	\$0.00
Vehicle Charge	15	hrs.	@	\$12.00	\$180.00
	SUBTOTAL				\$5,982.00
B. GEOTECHNICAL LABORATORY TESTING					
Atterberg Limits (ASTM D-4318)	8	ea.	@	\$71.00	\$568.00
Passing No. 200 Sieve (ASTM D-1140)	6	ea.	@	\$55.00	\$330.00
Sieve Analysis w/o Hydrometer (ASTM D-422)	2	ea.	@	\$65.00	\$130.00
Double Hydrometer (ASTM D-4221)	1	ea.	@	\$250.00	\$250.00
Crumb Test (ASTM D-6572)	5	ea.	@	\$43.00	\$215.00
Moisture Content (ASTM D-2216)	28	ea.	@	\$11.00	\$308.00
Unconfined Compression (ASTM D-2166)	4	ea.	@	\$51.00	\$204.00
Unconsolidated-Undrained Triaxial Test (ASTM D-2850)	4	ea.	@	\$72.00	\$288.00
Consolidated-Undrained Triaxial Test (ASTM D-4767)	2	ea.	@	\$1,800.00	\$3,600.00
	SUBTOTAL				\$5,893.00
C. SLOPE STABILITY ANALYSES					
Senior Engineer, P.E.	2	hrs.	@	\$205.00	\$410.00
Project Engineer, P.E.	32	hrs.	@	\$165.00	\$5,280.00
	SUBTOTAL				\$5,690.00
D. ENGINEERING ANALYSIS & REPORT PREPARATION					
Senior Engineer, P.E.	2	hrs.	@	\$205.00	\$410.00
Project Engineer, P.E.	12	hrs.	@	\$165.00	\$1,980.00
Graduate Engineer, EIT	24	hrs.	@	\$115.00	\$2,760.00
CAD Operator	5	hrs.	@	\$85.00	\$425.00
Engineering Assistant	0	hrs.	@	\$70.00	\$0.00
Reproduction (electronic copies only)	0	copies	@	\$40.00	\$0.00
	SUBTOTAL				\$5,575.00
				TOTAL ESTIMATED FEE	\$23,140.00

ITEMIZED FEE ESTIMATE - Option 2

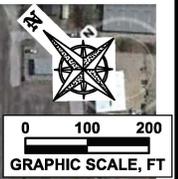
Two Additional Borings (B-28 and B-29)

A. FIELD EXPLORATION	QTY	UNIT	@	RATE	AMOUNT
Mobilization/Demobilization (Buggy Rig)	0	LS	@	\$950.00	\$0.00
Drill Crew Travel (not including first day)	0.5	days	@	\$500.00	\$250.00
Coordination & Utility Checking (Project Geologist)	0.5	hrs.	@	\$165.00	\$82.50
Boring Layout & Site Reconnaissance (Project Geologist)	0.5	hrs.	@	\$165.00	\$82.50
Boring Logging and Field Supervising (Senior Technician)	1.5	hrs.	@	\$90.00	\$135.00
Concrete Pavement Coring and Patching (6" dia, 0"-6" thick)	0	ea.	@	\$170.00	\$0.00
Concrete Pavement Coring (6" dia, 6" to 12" thick)	0	in.	@	\$16.00	\$0.00
Asphalt Coring and Patching (6" dia, 0"-6" thick)	0	ea.	@	\$159.00	\$0.00
Asphalt Patching (6" diameter)	0	ea.	@	\$50.00	\$0.00
Soil Drilling w/truck-mounted rig (0'-20' continuous)	28	ft.	@	\$25.00	\$700.00
Soil Drilling w/truck-mounted rig (20'-50' intermittent)	0	ft.	@	\$23.00	\$0.00
Backfill Holes (Bentonite Chips)	28	ft.	@	\$12.00	\$336.00
Surcharge for Drilling with Buggy Rig	28	ft.	@	\$10.00	\$280.00
Metal Cover for Piezometers	0	ea.	@	\$100.00	\$0.00
Installing Piezometers	0	ft.	@	\$24.00	\$0.00
Piezometer Monitoring (Senior Technician)	0	hrs.	@	\$90.00	\$0.00
Plug and Abandon Piezometers	0	ea.	@	\$20.00	\$0.00
Standby Time (Drill Crew)	0	hrs.	@	\$300.00	\$0.00
Vehicle Charge	2	hrs.	@	\$12.00	\$24.00
SUBTOTAL					\$1,890.00
B. GEOTECHNICAL LABORATORY TESTING					
Atterberg Limits (ASTM D-4318)	4	ea.	@	\$71.00	\$284.00
Passing No. 200 Sieve (ASTM D-1140)	4	ea.	@	\$55.00	\$220.00
Sieve Analysis w/o Hydrometer (ASTM D-422)	0	ea.	@	\$65.00	\$0.00
Double Hydrometer (ASTM D-4221)	0	ea.	@	\$250.00	\$0.00
Crumb Test (ASTM D-6572)	2	ea.	@	\$43.00	\$86.00
Moisture Content (ASTM D-2216)	14	ea.	@	\$11.00	\$154.00
Unconfined Compression (ASTM D-2166)	2	ea.	@	\$51.00	\$102.00
Unconsolidated-Undrained Triaxial Test (ASTM D-2850)	2	ea.	@	\$72.00	\$144.00
Consolidated-Undrained Triaxial Test (ASTM D-4767)	0	ea.	@	\$1,800.00	\$0.00
SUBTOTAL					\$990.00
C. SLOPE STABILITY ANALYSES					
Senior Engineer, P.E.	0	hrs.	@	\$205.00	\$0.00
Project Engineer, P.E.	8	hrs.	@	\$165.00	\$1,320.00
SUBTOTAL					\$1,320.00
D. ENGINEERING ANALYSIS & REPORT PREPARATION					
Senior Engineer, P.E.	0	hrs.	@	\$205.00	\$0.00
Project Engineer, P.E.	3	hrs.	@	\$165.00	\$495.00
Graduate Engineer, EIT	8	hrs.	@	\$115.00	\$920.00
CAD Operator	0.5	hrs.	@	\$85.00	\$42.50
Engineering Assistant	0	hrs.	@	\$70.00	\$0.00
Reproduction (electronic copies only)	0	copies	@	\$40.00	\$0.00
SUBTOTAL					\$1,457.50
TOTAL ESTIMATED FEE					\$5,657.50

ITEMIZED FEE ESTIMATE - Option 3

Three Additional Borings (B-30 to B-32)

A. FIELD EXPLORATION	QTY	UNIT		RATE	AMOUNT
Mobilization/Demobilization (Buggy Rig)	0	LS	@	\$950.00	\$0.00
Drill Crew Travel (not including first day)	0.5	days	@	\$500.00	\$250.00
Coordination & Utility Checking (Project Geologist)	0.5	hrs.	@	\$165.00	\$82.50
Boring Layout & Site Reconnaissance (Project Geologist)	0.5	hrs.	@	\$165.00	\$82.50
Boring Logging and Field Supervising (Senior Technician)	2	hrs.	@	\$90.00	\$180.00
Concrete Pavement Coring and Patching (6" dia, 0"-6" thick)	0	ea.	@	\$170.00	\$0.00
Concrete Pavement Coring (6" dia, 6" to 12" thick)	0	in.	@	\$16.00	\$0.00
Asphalt Coring and Patching (6" dia, 0"-6" thick)	0	ea.	@	\$159.00	\$0.00
Asphalt Patching (6" diameter)	0	ea.	@	\$50.00	\$0.00
Soil Drilling w/truck-mounted rig (0'-20' continuous)	42	ft.	@	\$25.00	\$1,050.00
Soil Drilling w/truck-mounted rig (20'-50' intermittent)	0	ft.	@	\$23.00	\$0.00
Backfill Holes (Bentonite Chips)	42	ft.	@	\$12.00	\$504.00
Surcharge for Drilling with Buggy Rig	42	ft.	@	\$10.00	\$420.00
Metal Cover for Piezometers	0	ea.	@	\$100.00	\$0.00
Installing Piezometers	0	ft.	@	\$24.00	\$0.00
Piezometer Monitoring (Senior Technician)	0	hrs.	@	\$90.00	\$0.00
Plug and Abandon Piezometers	0	ea.	@	\$20.00	\$0.00
Standby Time (Drill Crew)	0	hrs.	@	\$300.00	\$0.00
Vehicle Charge	2.5	hrs.	@	\$12.00	\$30.00
				SUBTOTAL	\$2,599.00
B. GEOTECHNICAL LABORATORY TESTING					
Atterberg Limits (ASTM D-4318)	6	ea.	@	\$71.00	\$426.00
Passing No. 200 Sieve (ASTM D-1140)	6	ea.	@	\$55.00	\$330.00
Sieve Analysis w/o Hydrometer (ASTM D-422)	0	ea.	@	\$65.00	\$0.00
Double Hydrometer (ASTM D-4221)	0	ea.	@	\$250.00	\$0.00
Crumb Test (ASTM D-6572)	3	ea.	@	\$43.00	\$129.00
Moisture Content (ASTM D-2216)	21	ea.	@	\$11.00	\$231.00
Unconfined Compression (ASTM D-2166)	3	ea.	@	\$51.00	\$153.00
Unconsolidated-Undrained Triaxial Test (ASTM D-2850)	3	ea.	@	\$72.00	\$216.00
Consolidated-Undrained Triaxial Test (ASTM D-4767)	0	ea.	@	\$1,800.00	\$0.00
				SUBTOTAL	\$1,485.00
C. SLOPE STABILITY ANALYSES					
Senior Engineer, P.E.	0	hrs.	@	\$205.00	\$0.00
Project Engineer, P.E.	8	hrs.	@	\$165.00	\$1,320.00
				SUBTOTAL	\$1,320.00
D. ENGINEERING ANALYSIS & REPORT PREPARATION					
Senior Engineer, P.E.	0	hrs.	@	\$205.00	\$0.00
Project Engineer, P.E.	5	hrs.	@	\$165.00	\$825.00
Graduate Engineer, EIT	8	hrs.	@	\$115.00	\$920.00
CAD Operator	0.5	hrs.	@	\$85.00	\$42.50
Engineering Assistant	0	hrs.	@	\$70.00	\$0.00
Reproduction (electronic copies only)	0	copies	@	\$40.00	\$0.00
				SUBTOTAL	\$1,787.50
				TOTAL ESTIMATED FEE	\$7,191.50



Possible Overall Perimeter of New Detention Basin (Approximately 29 acres)

LEGEND:
B-# (X')
 PROPOSED BORING LOCATION (DEPTH IN FEET)
B-# (X')
 EXISTING BORING LOCATION (DEPTH IN FEET)

AVILES ENGINEERING CORPORATION
 PROPOSED BORING LOCATION PLAN
 STELLA ROAD IMPROVEMENTS
 FROM COTTONWOOD SCHOOL ROAD TO BAND ROAD
 FORT BEND COUNTY, TEXAS

ADC PROPOSAL NO. G2023-07-10R1	DATE 08-18-2023	SOURCE DRAWING PROVIDED BY GOOGLE EARTH
SCALE 1" = 200'	DRAWN BY WLW	PLATE NO. PLATE 1

Notes:
 1) Borings B-1 through B-19 have been surveyed by Landtech, Inc.