

STATE OF TEXAS                   §  
   §  
COUNTY OF FORT BEND       §

**AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES**

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

**WITNESSETH**

WHEREAS, County desires that Contractor provide professional engineering services for the construction of a four-lane concrete curb and gutter boulevard with storm sewer drainage, including a bridge at Buffalo Bayou, from the intersection at Westheimer Parkway to the existing Roesner Road boulevard section approximately 5,800 feet to the south, for the Roesner Road – Segment 1 Project, Number 17305, under the 2017 Mobility Bond Program (hereinafter "Services") pursuant to SOQ 14-025; and

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

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

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

**AGREEMENT**

**Section 1. Scope of Services**

Contractor shall render the professional engineering services, including preliminary engineering and final design as well as associated additional services for the project as described Contractor's proposal dated May 7, 2018 attached hereto as Exhibit A, and incorporated herein for all purposes.

**Section 2. Personnel**

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

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

### **Section 3. Compensation and Payment**

3.1 Contractor's fees shall be calculated at the rates set forth in the attached Exhibit A. The Maximum Compensation for the performance of Services within the Scope of Services described in Exhibit A is one million eighty-five thousand six hundred forty-eight dollars and no/100 (\$1,085,648.00) as set forth in Exhibit A. In no case shall the amount paid by County under this Agreement exceed the Maximum Compensation without a written agreement executed by the parties.

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

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

### **Section 4. Limit of Appropriation**

4.1 Contractor 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 eighty-five thousand six hundred forty-eight dollars and no/100 (\$1,085,648.00) specifically allocated to fully discharge any and all liabilities County may incur.

4.2 Contractor does further understand and agree, said understanding and agreement also being of the absolute essence of this Agreement, that the total maximum compensation that Contractor may become entitled to and the total maximum sum that County may become liable to pay to Contractor shall not under any conditions, circumstances, or interpretations thereof exceed one million eighty-five thousand six hundred forty-eight dollars and no/100 (\$1,085,648.00).

### **Section 5. Time of Performance**

Time for performance of the Scope of Services under this Agreement shall begin with receipt of the Notice to Proceed and end no later than December 31, 2022. Contractor shall

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

#### **Section 6. Modifications and Waivers**

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

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

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

#### **Section 7. Termination**

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

##### **7.2 Termination for Default**

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

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

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

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

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

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

#### **Section 8. Ownership and Reuse of Documents**

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

#### **Section 9. Inspection of Books and Records**

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

#### **Section 10. Insurance**

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

10.1.1 Workers' Compensation insurance. Substitutes to genuine Workers' Compensation Insurance will not be allowed. Employers' Liability insurance with limits of not less than \$1,000,000 per injury by accident, \$1,000,000 per injury by disease, and \$1,000,000 per bodily injury by disease.

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

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



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

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

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

#### **Section 11. Indemnity**

**CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS COUNTY AGAINST LOSSES, LIABILITIES, CLAIMS, AND CAUSES OF ACTION, INCLUDING THE REIMBURSEMENT OF COUNTY'S REASONABLE ATTORNEYS FEES IN PROPORTION TO CONTRACTOR'S LIABILITY, ARISING FROM ACTIVITIES OF CONTRACTOR, ITS AGENTS, SERVANTS OR EMPLOYEES, PERFORMED UNDER THIS AGREEMENT THAT RESULT FROM THE NEGLIGENT ACT, INTENTIONAL TORT, ERROR, OR OMISSION OF CONTRACTOR OR ANY OF CONTRACTOR'S AGENTS, SERVANTS OR EMPLOYEES.**

#### **Section 12. Confidential and Proprietary Information**

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

12.2 Contractor agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Contractor uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the provision of Services to County hereunder, and to advise each of its employees and agents of their obligations to keep Confidential Information confidential. Contractor shall use its best efforts

to assist County in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limitation of the foregoing, Contractor shall advise County immediately in the event Contractor learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Agreement and Contractor will at its expense cooperate with County in seeking injunctive or other equitable relief in the name of County or Contractor against any such person. Contractor agrees that, except as directed by County, Contractor will not at any time during or after the term of this Agreement disclose, directly or indirectly, any Confidential Information to any person, and that upon termination of this Agreement or at County's request, Contractor will promptly turn over to County all documents, papers, and other matter in Contractor's possession which embody Confidential Information.

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

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

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

### **Section 13. Independent Contractor**

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

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

#### **Section 14. Notices**

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

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

County:	Fort Bend County Engineering Department Attn: County Engineer 301 Jackson Street Richmond, Texas 77469
With a copy to:	Fort Bend County Attn: County Judge 401 Jackson Street, 1 <sup>st</sup> Floor Richmond, Texas 77469
Contractor:	Costello, Inc. Attn: Samuel W. Kruse, Jr., P.E. 2107 City West Boulevard, 3rd Floor Houston, Texas 77042

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

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

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

#### **Section 15. Compliance with Laws**

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

certification of compliance with said laws, statutes, ordinances, rules, regulations, orders, and decrees above specified.

**Section 16. Standard of Care**

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

**Section 17. Assignment**

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

17.2 Neither party may delegate any performance under this Agreement.

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

**Section 18. Applicable Law**

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

**Section 19. Successors and Assigns**

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

**Section 20. Third Party Beneficiaries**

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

**Section 21. Severability**

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

**Section 22. Publicity**

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

**Section 23. Captions**

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

**Section 24. Conflict**

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

**Section 25. Certain State Law Requirements for Contracts**

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

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

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

FORT BEND COUNTY

COSTELLO, INC

\_\_\_\_\_  
Robert E. Hebert, County Judge

\_\_\_\_\_  
Samuel W. Kruse, Jr., P.E.  
Vice President – Municipal Services

\_\_\_\_\_  
Date

\_\_\_\_\_  
5/14/18  
Date

ATTEST:

\_\_\_\_\_  
Laura Richard, County Clerk

APPROVED:

\_\_\_\_\_  
Richard W. Stolleis, P.E., County Engineer

APPROVED AS TO LEGAL FORM:

\_\_\_\_\_  
Marcus D. Spencer, First Assistant County Attorney

#### AUDITOR'S CERTIFICATE

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

\_\_\_\_\_  
Robert Ed Sturdivant, County Auditor

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# EXHIBIT A

May 7, 2018



Mr. Richard Stolleis, P.E.  
Fort Bend County Engineer  
310 Jackson St., #101  
Richmond, Texas 77469

RE: Proposal for Engineering Services for  
Roesner Road Segment 1 (Westheimer Pkwy – Exist Roesner Road to the South)  
Fort Bend County, Texas  
2017 Mobility Project 17305

Dear Mr. Stolleis:

Costello, Inc., (CI), is pleased to provide this proposal to provide Engineering services for the referenced project. Within this proposal letter are the project scope, scope of services, compensation, and the schedule for proposed services.

#### PROJECT OBJECTIVE

Fort Bend County Precinct Three is planning for the construction of Roesner Road, Segment 1 (Westheimer Pkwy – Exist Roesner Road to the South) as a four lane reinforced concrete boulevard section with curb and gutter drainage. It is understood that any associated detention facilities / outfall improvements will be provided with the project. The project will extend south from the Westheimer Pkwy intersection to the Existing Boulevard Section 5800 feet to the South. The project will include a traffic signal at Westheimer Pkwy, a 400' length bridge over Buffalo Bayou, and Buffalo Bayou improvements to limit the effects on the floodplain/floodway. Public utilities will be relocated as needed. This proposal is for preliminary engineering and final design as well as associated additional services for the project. We understand all environmental services and environmental mitigation will be performed by others. There are 5 private gas pipeline crossings along the alignment.

Engineering services will be performed in accordance with Harris County, and Fort Bend County ( where applicable ) design criteria, specifications, details, and standards, as well as the TxDOT Manual for Uniform Traffic Control Devices. Where required, coordination will occur w/ the affected MUDs.



## **SCOPE OF SERVICES**

### **BASIC SERVICES**

#### **A Preliminary Engineering**

1. Tasks associated with the development of a preliminary engineering letter report in accordance with Harris County standards. The letter report will include preliminary drawings (30% level), a construction cost estimate, and preliminary schedule.
2. The report will reflect the preliminary design of approximately 5800 linear feet of four lane concrete roadway with storm sewer drainage, including a twin two lane reinforced concrete bridge over Buffalo Bayou.
3. Coordinate with the various MUDs and private utility companies whose facilities may be affected by the proposed construction and obtain the location of their existing and planned facilities. When necessary, we will assist the County in negotiations with the MUDs and pipeline companies and authorities for adjustment of their facilities.
4. Develop a 30% set of construction drawings basically including all existing information in the plan and profile views and proposed information in the plan view only and no details.
5. Develop a preliminary engineering cost estimate.
6. Provide 3 draft copies of the engineering letter report for Fort Bend County review.
7. Receive Fort Bend County, Fort Bend County Drainage District, and agency review comments and incorporate into the final design phase of the project.

#### **B. Final Design**

1. Upon approval of the preliminary engineering report, develop final construction plans, project specifications, and project manual.
2. Prepare an engineer's estimate of construction cost based on the final contract documents.
3. Provide a 70% and a 95% set of plans and specifications for review by the County and agencies of jurisdiction.
4. Receive review comments from County and agencies of jurisdiction and incorporate into the 100% submittal.
5. Pursue approvals of agencies with jurisdiction over the project as well as utility companies and other authorities.

**ADDITIONAL SERVICES**

- A. MBCO will provide surveying services (see attached proposal) including:
  - 1. Verify existing Right- of- Way (ROW) and identify property owners
  - 2. Perform abstracting as necessary
  - 3. Tie soils boring locations
  - 4. Tie coordinate geometry to monument system desired by Fort Bend County
  - 5. Provide topographical survey and cross sections (cross sections @ 100' intervals and extend for the proposed ROW width plus 20' on either side for the project length and for 200 feet through transitions on the north and south end of the project.
  - 6. Provide a Survey Control Index Sheet and Horizontal/Vertical Control Sheet
- B. Aguirre & Fields will provide Bridge Design (see attached proposal)
- C. Costello will provide the H&H Study (see attached proposal)
- D. Transcend will provide the Traffic Signal Design (see attached proposal)
- E. Terracon, Inc. will provide Geotechnical Services (see attached proposals)
- F. Van De Wiele & Vogler will provide SW3P Plan (see attached proposal)
- G. Van De Wiele & Vogler will provide Traffic Control Plan (see attached proposal)
- H. CI will provide a Route Study for the entire Roesner Road alignment from the existing 4 lane roadway at the south end of Segment 1 north to the I10 east bound feeder road in Harris County. (see attached proposal)

## COMPENSATION

### BASIC SERVICES

CI's Basis Services fee will be based on the attached levels of effort for preliminary, final design, and construction phases of the project:

1.	Preliminary Engineering	= \$ 309,070
2.	Final Design	= \$ 504,040
	Total Basic Service	= \$ 813,110

### ADDITIONAL SERVICES

1.	Surveying (MBCO) (LS)	\$ 39,435
2.	Geotechnical Engineering (Terracon) (LS)	\$ 69,100
3.	SWPPP (VDW) (LS)	\$ 13,334
4.	Traffic Control Plans (VDW) (LS)	\$ 16,854
5.	Traffic Signal Design ( Transcend ) (LS)	\$ 31,350
6.	H&H Study (LS)	\$ 65,000
7.	Roesner Road Preliminary Alignment Study (LS@50% Total Effort)	\$ 37,465
	Total Additional Services	\$ 272,538

Total Engineering Services Fees anticipated from the above scope of work are \$ 1,085,648. The attached Exhibit "A" indicates the current billing rates we propose for T&M compensation.

### PROJECT SCHEDULE

A.	Roesner Road Preliminary Alignment Study (Entire Alignment)	60 Calendar Days
B.	Preliminary Engineering	90 Calendar Days*
C.	Final Design – 70%	90 Calendar Days**
	-- 95%	45 Calendar Days**
	-- 100%	45 Calendar Days**

**Costello** Engineering & Surveying

Mr. Richard Stolleis, P.E.  
May 7, 2018

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- \* Calendar Days to draft of PER from written NTP
- \*\* Calendar Days to complete milestone after receiving all written comments

We are pleased to provide this proposal to the County for this important infrastructure project and will be glad to answer any questions you may have.

Sincerely,  
Costello, Inc.



Samuel W. Kruse, Jr., P.E.  
Vice President, Municipal Services

W:\Users\KRUSE\Municipal Proposals\Fort Bend County\3.22.18\draft proposal.docx

FORT BEND COUNTY  
LEVEL OF EFFORT ESTIMATE  
PRELIMINARY ENGINEERING  
ROESNER ROAD - SEG 1

Manhours								
Task	PIC/PM	PE / QA/QC	Staff Engr	CADD	Admin	Consult	Total	
BASIC SERVICES *								
Coord., Sched., Budgets, QA/QC	40	80	39	0	8		\$ 29,210	
Records Collection	12	40	40	0	0		\$ 14,600	
Initial Agency/Utility Coord	12	40	40	0	0		\$ 14,600	
Site Visits	12	40	40	0	0		\$ 14,600	
Base Sheet Preparation	60	80	148	130	6		\$ 58,420	
Prelim Paving Design	16	80	100	152	0		\$ 43,840	
Prelim Bridge Design						\$ 8,220	\$ 8,220	
Prelim Det/ Channel Imp Des	4	24	50	40	0		\$ 14,620	
Prelim Water/San Swr Relocates	4	24	50	40	0		\$ 14,620	
Prelim Storm Sewer Design	16	80	100	152	0		\$ 43,840	
Sight Triangle Exhibits	4	16	8	24	0		\$ 7,040	
Prepare Draft PER	20	40	18	0	6		\$ 14,570	
Incorporate Review Comments	12	16	40	46	0		\$ 14,650	
Consultant Management	12	36	16	0	0		\$ 11,240	
Reimbursable Expenses							\$ 5,000	
							\$ 309,070	
ADDITIONAL SERVICES								
Design Survey						\$ 39,435	\$ 39,435	
Geotech						\$ 69,100	\$ 69,100	
H&H Study	52	144	236				\$ 65,000	
Prelim Traffic Control Des						\$ 2,560	\$ 2,560	
Prelim Traffic Signal Des						\$ 6,090	\$ 6,090	
Prelim SW3P						\$ 1,720	\$ 1,720	
0.5 of Roesner Route Alignment							\$ 37,465	
							\$ 221,370	
TOTAL MANHOURS	276	740	925	584	20			
HOURLY RATE @ 3.0 MULT.	\$ 250	\$ 180	\$ 110	\$ 95	\$ 65			
FEES	\$ 69,000	\$ 133,200	\$ 101,750	\$ 55,480	\$ 1,300	\$ 127,125	\$ 530,440	

\* - Includes Vandewiele

**Marinour Estimate  
Fort Bend County  
Roesner Road, Seg 1  
Phase 2/3 Services**

Costello, Inc.  
SWK  
03/23/18



### **Roesner Drainage Impact Analysis Scope**

The drainage impact analysis for the Roesner Road reconstruction is divided into multiple phases to match the construction phasing of the overall project. The entire project is within the Buffalo Bayou (Willow Fork) watershed which ultimately drains to Barker Reservoir. It is assumed that the DIA will be required to be reviewed and approved by both FBCDD and the Willow Fork Drainage District. FBCDD recently completed a watershed evaluation of Buffalo Bayou/Willow Fork and submitted a Letter of Map Revision to FEMA. The base model and methodologies established in this LOMR will be utilized for the hydrologic and hydraulic evaluations associated with the roadway improvements. All remaining drainage analysis and criteria will be in accordance with the Fort Bend County Drainage District's Drainage Criteria Manual dated 2011.

Below is a description and budget for of each phase of the DIA:

#### **Phase 1: Luna Vista Drive to Westhelmer Parkway**

The Phase 1 Improvements include a new roadway from Luna Vista Drive (within the Westlake development) to Westhelmer Parkway. As part of these Improvements, a bridge crossing over Willow Fork is required. The DIA includes a hydraulic bridge evaluation of Willow Fork utilizing the most current watershed modeling prepared as part of the Willow Fork Letter of Map Revision (LOMR). It is anticipated that the bridge improvements will require channel improvements to Willow Fork within the vicinity of the bridge to maintain the conveyance of the floodwaters through the bridge without impacting the 100-year water surface elevations. The bridge approaches will include fill within the floodplain that is required to be mitigated within a pond facility. It is anticipated that this mitigation can be done directly within the area designated as floodway in the vicinity of the bridge. As part of the DIA, three mitigation pond locations will be evaluated to aid in offsite right-of-way procurement.

The proposed roadway would also increase the runoff due to the new pavement (imperviousness) being added to the watershed. This increased imperviousness will require detention mitigation volume to reduce peak flow rates to existing levels. It is anticipated that the above floodplain fill mitigation and detention volume can be constructed in a combined detention pond to allow for efficiency.

The proposed Improvements will be simulated directly within the Willow Fork watershed models to demonstrate that no adverse impacts are associated with the project in the 10 and 100-year, 24-hour storm events. A report will be prepared and submitted to the county for review and approval. The above scope will require a project budget of \$65,000 for the Phase 1 DIA.

### **Roesner Road Alignment Study Scope of Work**

Prior to the preliminary engineering work for Roesner Road Segments 1 and 2, an alignment study will be performed on the entire length of Roesner ( Segments 1,2, and 3 ) which extends into Harris County from the existing Boulevard Section south of Westheimer Parkway north to the East Bound I-10 Feeder Road. This will allow for a new pavement section to extend from the southern end of Segment 1 north to a tie in to I-10 and provide an alternative north/south route through the region.

Segments 1 and 2 have been pretty much defined in previous planning work while three alternatives have been previously defined for Segment 3. Those 3 alternatives will be examined further ( and modified as deemed beneficial ) and coordination w/ Harris County will occur in hopes of acquiring an agreement between the two counties for a Segment 3 alignment that completes the Roesner Road project alignment and improves mobility for the region.

Tasks associated with the Alignment Study will include:

1. Review of the previously planned Segments 1 & 2 as well as the previously defined alignments for Segment 3
2. Development of any desired modifications, or additional alternatives
3. Provide an alternative analysis including both economic and noneconomic factors
4. Determine preliminary ROW and Environmental requirements for the alignment alternatives
5. Review the tie in to East Bound I-10 Feeder Road and coordinate with Harris County and TxDOT as required.
6. Develop preliminary pavement sections for the alternatives and available ROW
7. Meetings as needed with Ft. Bend County, Harris County, and TxDOT ( up to 3 meetings )
8. Perform initial ROW determination including landowner's research and takings
9. Develop initial cost estimates for Segment 3 utilizing the existing FBC Mobility excel spreadsheet used in the previous 2017 Mobility Bond Program
10. Develop a report identifying the alternatives, the alternative analysis, document coordination efforts, and recommendations/conclusions of the study



FORT BEND COUNTY  
LEVEL OF EFFORT ESTIMATE  
ROUTE ANALYSIS  
ROESNER ROAD

Task	Manhours				Consult	Total
	Proj Mgr	PE / QA/QC	Staff Eng	QA/QC	Admin	
<b>BASIC SERVICES</b>						
Review Previous Alignments	4	24	8	0	0	0 \$ 6,200
Develop Modifications	4	12	8	16	0	0 \$ 5,560
Alternative Analysis	8	16	24	0	0	0 \$ 7,520
Prelim ROW Reqmts.	12	24	8	8	0	0 \$ 8,960
110 Tie In; Tx Dot Coord	4	12	8	0	0	0 \$ 4,040
Prelim Pavement Sections	4	8	16	8	0	0 \$ 4,960
Meetings w/ FBC, HC, TXDOT (6)	12	24	18	0	0	0 \$ 9,300
Level of Mag Cost Estimates	8	16	16	0	0	0 \$ 6,640
Prepare Draft Route Analysis	16	32	24	16	4	0 \$ 14,180
Incorporate Review Comments	8	12	16	16	2	0 \$ 7,570
<b>TOTAL MANHOURS</b>	80	380	198	84	65	
<b>HOURLY RATE @ \$100.00</b>	\$ 20,000	\$ 38,000	\$ 19,800	\$ 8,400	\$ 6,500	\$ 74,950
<b>FEES</b>						

March 6, 2018

Mr. Sam Kruse, P.E.  
Costello, Inc.  
Partner/Vice President  
Municipal Division  
9990 Richmond Avenue, Suite 450 North Building  
Houston, TX 77042

Attn: Mr. Joshua Netardus, P.E., Assistant Project Manager

Re: **Proposal for Roesner Road Segment 1  
Fort Bend County 2017 Mobility Bond Program  
VDWV Project No: 27703-801-1-PAV**

Dear Mr. Kruse,

Van De Wiele & Vogler, Inc. (VDW&V) is pleased to submit this proposal to provide professional engineering services for the above-captioned project.

**Project Location and Understanding:** We understand that Fort Bend County is proposing to design and construct a 4-lane boulevard, concrete curb and gutter with storm drainage, within 100' ROW from existing Roesner Road to Westheimer parkway with a large bridge over Buffalo Bayou. Crossing a total of 5 natural gas pipelines, multiple times running to the existing Enstor facility. Drainage channel improvements to Buffalo Bayou necessary to reduce the floodway area at the bridge crossing. Signal at Westheimer Parkway.

**Scope of Services**

As per the information provided by the Prime Consultant (Costello), we propose the Scope of Services for Storm Sewer Design, Traffic Control Plan, and Storm Water Pollution Protection Plan.

Assumptions are listed below:

1. Completed H&H modeling to be provided by Prime Consultant for the detention pond design and outfall design.
  - a. Assuming 2 detention ponds with the outfall structure at the west and east side of Buffalo Bayou.
  - b. Assuming drainage design is an underground storm sewer system design and NOT an open ditch design.
  - c. Hydraulic calculation of storm sewer system analysis to be done in excel format.
2. Provide a utility conflict table list for storm sewer and detention pond only.
  - a. Contact with utility companies (both overhead and underground) to coordinate the adjustment of existing utilities will be made by the County and/or its project management consultant.
  - b. Sending of record requests to utility companies and obtain an I.D. number to be done by Prime Consultant.
  - c. Submittal of milestone-level drawings to applicable utility companies for their review to be done by Prime Consultant
3. Provide permit exhibits for storm sewer system, detention pond, SW3P, and TCP.
  - a. Permit submittal coordination with any project stakeholders to be done by the County and/or its project management consultant.
4. CAD standards (dgn library, project configuration files etc..) in Microstation format to be provided by Prime Consultant
5. P&P Sheet with project Title Block to be provided by Prime Consultant.
6. Preliminary and Final Roadway and Bridge design to be provided by Prime Consultant.
7. Topographic and ROW data to be provided by Prime Consultant



Mr. Sam Kruse, P.E.  
March 6, 2018  
Page 2

8. Includes comment responses on Storm Sewer, Detention Pond, TCP and SW3P items for PER, 70%, 95% and 100% submittals.
9. Design criteria to be followed as listed in order of priority, (1) Any Fort Bend County Engineering or Drainage District criteria/standards, including the Fort Bend County Drainage Criteria Manual (Fort Bend County Drainage District, November 1987, revised April 1999), (2) municipal design criteria if the project is located within the limits of a municipality and/or ETJ that has design criteria, (3) Guidelines for Engineers Having Contracts with Harris County, Texas (Harris County Public Infrastructure Department, 1987), (4) applicable Texas Department of Transportation design criteria (all County-maintained traffic signals, other items as applicable), and (5) the Infrastructure Design Manual (City of Houston Department of Public Works and Engineering, current version, used for Infrastructure for which design criteria do not exist in the preceding criteria documents)
10. Does NOT include Design Cross Sections
11. Does NOT include SW3P report.
12. Does NOT include Bid and Construction Phase Services
13. Does NOT include Reproduction Services

**Compensation:** Compensation for the three tasks (Storm Sewer Design, Traffic Control Plan, and Storm Water Pollution Protection Plan) will be on a lump sum basis at a total cost of \$208,208.00 (see enclosed level of effort).

Van De Wiele & Vogler, Inc. appreciates this opportunity to provide professional engineering services to Fort Bend County for this important project and are available to initiate the work immediately upon receipt of your written authorization to proceed. Please feel free to contact me anytime if you have questions or need additional information.

Sincerely,



Ruben Martinez, P.E.  
Project Manager  
Transportation and Municipal Projects  
Van De Wiele & Vogler, Inc.  
Texas Registered Engineering Firm F-148

Enclosures:  
Level of Effort

**FORT RAND COUNTY  
ROSENBER ROAD SEGMENT 1**

**Preliminary & Final Basic Services Fee Calculation**

Preliminary and Final Design Basic Services Task																
Sub-Task/Description	Engineer VII		Engineer V		Engineer IV		Engineer III		Engineer II		Engineer I		District Task I		Task Total	
	Rate	Amount	Rate	Amount	Rate	Amount	Rate	Amount	Rate	Amount	Rate	Amount	Rate	Amount		
Subtotal																
1. Project Kick-off Meeting																
2. Site Visit to Identify Key Design Issues/Constraints																
3. Coordination and 2 meetings with W.P. Board County and Private Consultant																
4. Review Work Program (RACQ)																
B. PER and PERA Development																
1. Existing Data Collection, Review/Verification, PER																
a. Analyze existing public utility information: identify problem areas and potential solutions for storm sewer design needs in utility conflict list																
b. Acquire existing private utility and population information: identify potential conflicts with storm sewer design needs in utility conflict list																
c. Acquire appropriate survey: identify potential conflicts with storm sewer design needs in utility conflict list																
d. Identify Permit and Regulatory Requirements for storm sewer design																
e. Storm Sewer Network for PER																
f. TCR Network for PER																
g. SWP Network for PER																
h. Storm Sewer Network for storm sewer design combined with the provided roadway design																
Subtotal																
2. Drainage Design Calculations																
a. Proposed storm sewer and culvert design calculations (60%, 70%, 80%, 100%)																
Subtotal																
3. Plans, Specifications and Estimates Development																
a. SWP Layout Sheets (70%, 80%, 90%, 100%)																
b. TCR Layout Sheets (70%, 80%, 90%, 100%)																
c. Drainage Area Maps Sheets for Storm Sewer (70%, 80%, 90%, 100%)																
d. Storm Sewer Cross-section Sheets (70%, 80%, 90%, 100%)																
e. Culvert Plan and profile sheets (70%, 80%, 90%, 100%)																
f. Storm Sewer Plan and Profile Sheets combined with the provided roadway design (70%, 80%, 90%, 100%)																
g. Drainage Pond Plan Sheets with Outfalls (70%, 80%, 90%, 100%) (DOCS NOT INCLUDED FHEI MODELING)																
h. SWP, TCR, Drainage, Stormwater Sheets (70%, 80%, 90%, 100%)																
i. Project Bidding Manual for Storm Sewer, SWP, TCR items (Specification TOC, Special Specifications or Conditions) (70%, 80%, 90%, 100%) (DOCS NOT INCLUDED SWP REPORT)																
j. Summary of Storm Sewer, SWP, TCR quantities (70%, 80%, 90%, 100%)																
k. Construction Cost Estimate for Storm Sewer, SWP, TCR items (70%, 80%, 90%, 100%)																
Subtotal Preliminary and Final Design Basic Services																
Preliminary and Final Design Basic Services Totals																
Percentage																



**AGUIRRE & FIELDS LP**  
**ENGINEERS AND PLANNERS**

April 4, 2018

Mr. Joshua Netardus, P.E.  
Costello, Inc.  
9990 Richmond, Avenue, Suite 450 North Building  
Houston, TX 77042

Re: Roesner Road Segment 1 - Bridge Proposal

We appreciate the opportunity to submit this proposal to Costello for structural services for the above mentioned project.

**I. Scope of Work**

The project shall consist of twin 400 LF – 5 Span bridges over Willow Fork Buffalo Bayou located in Precinct 3 in Fort Bend County. It's our understanding the bridge design will be inserted into an overall set of bid documents prepared by others. Aguirre & Fields, LP will be responsible for the following services:

**A. Preliminary Design Services**

- Preliminary Bridge Layout & Typical Sections
- Bridge Recommendations
- Cost Estimate

**B. Design Phase Services – 70%, 95% & 100%/final plans and calculations including:**

- Bridge layouts - currently it is our understanding that each bridge will be 5 spans utilizing TxDOT Type Tx Girders with a total bridge length of 400 feet long. The northbound bridge will consist of a 28 feet wide roadway and 6 feet wide sidewalk. The southbound bridge will consist of a 28 feet wide roadway. The bridges are anticipated to be on a tangent alignment with no skew. The bridge will span over Willow Fork Buffalo Bayou.
- Estimated quantities and bearing seat elevations
- Substructure details (abutments, bent, foundations)
- Superstructure details (rails, slab, concrete girders)
- Use of standard TxDOT details
- Review of general notes, specifications and provisions
- Cost estimates
- Comment/Response resolution

Aguirre & Fields will inform Costello if changes in the Scope of Work are required due to significant project changes should the design become unusually complex.

II. Information Required

1. Geotechnical Information
  - a. 100' Deep Borings in close proximity to the proposed bridge foundations
  - b. Recommendations on skin friction and shaft end bearing pressures or TCP blow counts in Wincore CLG format
2. Survey data including existing ground TIN, utility locations and ROW lines
3. Roadway alignment, edges of pavement and profile in CAD format
4. Hydraulic information including 100-year highwater and discharges, scour information and limits of drainage channel improvements at bridge crossing.

III. Proposed Fee

The total proposed fee for the above defined Service is: \$136,805. This fee is detailed as follows:

A. Preliminary Design Phase Services shall be provided on a *lump sum* basis as follows:

Preliminary Phase Services:

Bridge	= \$ 8,220
Total Lump Sum Preliminary Design Phase Service	= \$ 8,220

B. Design Phase Services shall be provided on a *lump sum* basis as follows:

Design Phase Services:

Bridge	= \$ 128,585
Total Lump Sum Design Phase Service	= \$ 128,585

Please contact me at 281-207-2073 or email me at [brian.legaspi@aguirre-fields.com](mailto:brian.legaspi@aguirre-fields.com) if you have any questions or comments regarding this proposal.

Sincerely,



Brian Legaspi, P.E.  
Project Manager

BAL



**BRIDGE DESIGN FEE ESTIMATE**  
**ROESNER ROAD OVER WILLOW FORK BUFFALO BAYOU**

Per Preliminary Information:

1 - Northbound - 400' Long Bridge - 5 Spans, 2 Concrete Units, 36,583' Total Bridge Width, 24' Roadway Width, 2 - 2' Shoulders, 6' Sidewalk, 2 - 1.252' Rail

1 - Southbound - 400' Long Bridge - 5 Spans, 2 Concrete Units, 36,583' Total Bridge Width, 24' Roadway Width, 2 - 2' Shoulders, 2 - 1.252' Rail

Task	Units	Quantity	MH/Unit	Project Manager	Sr. Bridge Engineer	Bridge Engineer	EIT	Tech	Admin	Total	Total
1. Coordination Meetings & Invoicing	Meetings	2	12	12		12					\$4,140.00
2. Plan Review & Comment Response (70%, 95%, 100%/final)	Submittals	3	15	2	2	16	16	9			\$4,890.00
3. Invoicing	Cycles	6	1	3					3		\$825.00
4. Attend Pre-Bid	Meetings	1	8	4		4					\$1,380.00
Total				71	63	434	418	238	3	1227	
Contract Rate				\$225.00	\$180.00	\$120.00	\$90.00	\$80.00	\$50.00		
Total				\$15,975.00	\$11,340.00	\$52,080.00	\$37,620.00	\$19,040.00	\$150.00		\$136,205.00

Summary	Sheets (w/o Standards)	Man-hours	Direct Labor	Direct Expenses	Total
Preliminary Design		76	\$8,320.00	\$100.00	\$8,420.00
Bridge Design	32	1151	\$128,085.00	\$500.00	\$128,585.00
Total					\$136,805.00

**BRIDGE DESIGN FEE ESTIMATE**  
**ROESNER ROAD OVER WILLOW FORK BUFFALO BAYOU**

Per Preliminary Information:

- 1 - Northbound - 400' Long Bridge - 5 Spans, 2 Concrete Units, 56,583' Total Bridge Width, 24' Roadway Width, 2 - 2' Shoulders, 6' Sidewalk, 2 - 1.292' Rail  
1 - Southbound - 400' Long Bridge - 5 Spans, 2 Concrete Units, 30,583' Total Bridge Width, 24' Roadway Width, 2 - 2' Shoulders, 2 - 1.292' Rail

Task	Units	Quantity	MH/Unit	Project Manager	Sr. Bridge Engineer	Bridge Engineer	ET	Tech	Admin	Total	Total
<b>Preliminary Design Phase</b>											
1. Schematic Bridge Layout & Typical Sections	Sheet	3	18	2	3	19	19	11		54	\$5,860.00
2. Letter Report for Bridge Recommendations	Lump	1	14		1	5	5	3		14	\$1,470.00
3. Cost Estimate	Lump	1	8			3	3	2		8	\$790.00
<b>Design Phase</b>											
<b>A: Final Design - Bridge Design - Northbound Bridge</b>											
1. Bridge Layout	Sheet	1	50	1	3	18	18	10		30	\$5,345.00
2. Estimated Quantities and Bearing Seat Elevations	Sheet	1	25	1	1	9	9	5		25	\$2,695.00
3. Foundation Layout	Sheet	1	35	2	2	12	12	7		35	\$3,890.00
4. Abutments 1 & 5 (& detail sheets)	Sheet	4	35	7	7	49	49	28		140	\$15,365.00
5. Interior Bent (2 - 4)	Sheet	2	35	2	4	25	25	14		70	\$7,540.00
6. Girder Framing Plan	Sheet	2	35	2	4	25	25	14		70	\$7,540.00
7. Prests Conc Gir Unit 1 (Plan View & Typ Sect)	Sheet	2	40	4	4	28	28	16		80	\$8,780.00
8. Prests Conc Gir Unit 2 (Plan View & Typ Sect)	Sheet	2	35	2	4	25	25	14		70	\$7,540.00
9. Prestressed Girder Design & Data Sheet	Sheet	1	15	1	1	5	5	3		15	\$1,695.00
<b>B: Final Design - Bridge Design - Southbound Bridge</b>											
1. Bridge Layout	Sheet	1	40	2	2	14	14	8		40	\$4,390.00
2. Estimated Quantities and Bearing Seat Elevations	Sheet	1	20	1	1	7	7	4		20	\$2,195.00
3. Foundation Layout	Sheet	1	30		2	11	11	6		30	\$3,150.00
4. Abutments 1 & 5 (& detail sheets)	Sheet	4	30	6	6	42	42	24		120	\$13,170.00
5. Interior Bent (2 - 4)	Sheet	2	30	3	3	21	21	12		60	\$6,585.00
6. Girder Framing Plan	Sheet	2	30	3	3	21	21	12		60	\$6,585.00
7. Prests Conc Gir Unit 1 (Plan View & Typ Sect)	Sheet	2	30	3	3	21	21	12		60	\$6,585.00
8. Prests Conc Gir Unit 2 (Plan View & Typ Sect)	Sheet	2	30	3	3	21	21	12		60	\$6,585.00
9. Prestressed Girder Design & Data Sheet	Sheet	1	15	1	1	5	5	3		15	\$1,695.00
<b>C: Standards, Specifications &amp; Estimates</b>											
1. Prepare General Notes, Specification & Provisions	Lump	1	12	1	1	4	4	2		12	\$1,405.00
2. Boring Logs - Integrate Logs from Geotech	Lump	1	12	1	1	4	4	2		12	\$1,405.00
3. Cost Estimates (70%, 95%, 100%/Final)	Submittals	3	8	2	1	8	8	5		24	\$2,710.00





WBE | DBE  
SBE | HUB  
CERTIFIED

## PROPOSAL FOR LAND SURVEYING SERVICES

March 19, 2018 Rev 5-3-18

Costello Engineering & Surveying  
9990 Richmond Ave., Suite 450 North Building  
Houston, TX 77042

Attn: Sam Kruse P.E. |  
Ref: Fort Bend County, Roesner Road Segment 1

Dear Mr. Kruse:

MBCO Engineering, LLC. (MBCO) is pleased to submit this proposal for professional surveying services on the referenced project in accordance Mobility Design Standards. MBCO will provide a full design survey and establish the ROW with acquisition documents for the length of +/- 5800 linear feet from the existing Roesner Road to Westheimer Parkway.

### SCOPE OF BASIC SERVICES

#### **I. BASE MAP/ROE**

MBCO will perform boundary research for all of the adjacent properties and subdivisions along the project length and prepare a base map. MBCO will find and tie in the existing boundary corners and establish the existing ROW of Roesner Road; Prepare Right-of-Entry Letters for a maximum of 15 parcels (to include 2 attempts); Set Primary Control at 1000' intervals.

#### **II. DESIGN SURVEY**

MBCO will perform a design level survey of the Proposed 100' ROW as defined by the exhibits provided by Fort Bend County and will include topo 30' beyond the Proposed ROW for a total design width of 160' as defined in the Mobility Design Standards. We will tie in the back of curb, gutter, natural ground, centerline of road, trees, fences, street lights, signs, pipeline crossings and other improvements within the Proposed ROW. We will make a call to the Texas one-call system and request utility locates and field tie underground utilities that have been marked by the Texas one-call (811). MBCO will complete 100' cross sections throughout the project. Our field crew will also complete inverts on all sanitary and storm sewer manholes, and storm sewer outfalls, that are within the project area. For the crossing of Buffalo Bayou we will run hydraulic cross sections at the centerline of the Proposed ROW line, both Proposed ROW lines and 500' upstream and 500' upstream. Locate trees 18" and up in the proposed ROW. We will prepare signed and sealed Survey Control maps. We will also locate at 1 mobilization geotechnical bore holes.

**DELIVERABLES:**

We will submit a sealed survey control map; AutoCAD Civil 3D 2016 format with x,y, and z coordinates in a CSV file; AutoCAD Civil 3D 2016 file with complete topo; a .CSV file of the geotechnical bore holes.

**TO BE PROVIDED BY THE DESIGN ENGINEER AND/OR COUNTY:**

- An Auto CAD file with the Proposed ROW limits.
- A map and estimated lat/long w/ descriptions of the bore hole location which will be marked by the Geotechnical Engineer by a wood hub flush with the ground and a wood lathe labeling the location within 48 hours of drill completion.

**ITEMS TO BE SPECIFICALLY EXCLUDED:**

- We will not provide SUE services
- We will not include any As-Built plans of utilities linework in our files

**SCHEDULE:**

MBCO will complete the Design Survey services listed above within forty-five (45) calendar days when we receive the signed contract. ROW Mapping deliverables listed above will be delivered in an additional forty-five (45) calendar days.

**COMPENSATION:**

The estimated cost for the above described professional services shall be a one-time Lump Sum fee and will be billed by the 5<sup>th</sup> day of each month based on a percent complete of the total project and will not be based solely on deliverables.

Task I \$2,230.00

Task II \$36,605.00

Direct Cost of \$600.00

Total Fee of \$39,435.00

This cost proposal is valid for 30 days, and may be re-evaluated after such time to account for any changes with the project scope, environmental factors and/or the general rate schedule.

13111 Westheimer Rd., Suite 307 • Houston, TX 77077 • [www.mbcengineering.com](http://www.mbcengineering.com)  
TBPE Firm Registration No. F-16850 | TBPLS Firm Registration No. 10194112



WBE | DBE  
SBE | HUB  
CERTIFIED

If this proposal is acceptable, please sign and return a copy. If you have any questions you may reach me at [trisha.lund@mbcoengineering.com](mailto:trisha.lund@mbcoengineering.com).

Thank you for the opportunity and we appreciate doing business with you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Trisha Lund". The signature is fluid and cursive, with a large loop at the end.

Trisha Lund, RPLS

**Acceptance:** If this proposal meets with your approval, please so indicate your acceptance by executing it in the space provided below and return two originals. Your written acceptance of this proposal will consummate the Agreement which can be terminated by either party upon receipt of written notice. Upon termination, all fees currently earned under the terms of this Agreement will be due and promptly paid.

\_\_\_\_\_  
"OWNER"

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

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

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

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

MBCO ENGINEERING, LLC.  
"ENGINEER"

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

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

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

TITLE: \_\_\_\_\_

ADDRESS: 13111 Westheimer Rd, Suite 307  
Houston, TX 77077

13111 Westheimer Rd., Suite 307 • Houston, TX 77077 • [www.mbcengineering.com](http://www.mbcengineering.com)  
TBPE Firm Registration No. F-16850 | TBPLS Firm Registration No. 10194112

# EXHIBIT D Fee Schedule

MBCO ENGINEERING, LLC  
Rosen Road Segment 1

TASK DESCRIPTION	SURVEY PROJECT MANAGER	RPLS	SURVEY TECHNICIAN	SURVEY TECHNICIAN - GPS, SIT	2-MAN SURVEY CREW	3-MAN SURVEY CREW	ABSTRACTOR	ADMIN/CLERICAL	TOTAL HRS.	TOTAL LABOR HRS. & COSTS
<b>BASE MAP</b>										
Right-of Entry (max 15 parcels)	2			4			16	10	32	\$ 2,250.00
									0	\$ -
									0	\$ -
									0	\$ -
									0	\$ -
									0	\$ -
									0	\$ -
<b>HOURS SUB-TOTALS</b>	2	0	0	4	0	0	16	10	32	32
CONTRACT RATE PER HOUR	\$ 185.00	\$ 185.00	\$ 85.00	\$ 100.00	\$ 135.00	\$ 175.00	\$ 80.00	\$ 50.00		\$ 2,250.00
TOTAL LABOR COSTS	\$370.00	\$0.00	\$0.00	\$400.00	\$0.00	\$0.00	\$800.00	\$500.00		\$ 2,250.00
% DISTRIBUTION OF STAFF HOURS	6.3%	0.0%	0.0%	12.5%	0.0%	0.0%	50.0%	31.3%		
<b>SUBTOTAL Task</b>	\$370.00	\$0.00	\$0.00	\$400.00	\$0.00	\$0.00	\$800.00	\$500.00		\$ 2,250.00
<b>DESIGN SURVEYING</b>										
Establish Primary & Secondary Control	1	2		4		20			27	\$ 4,365.00
Design Topo w/ Improvements-100' sections+heavy trees*	5	10	30	10	80				135	\$ 19,875.00
Hydraulic Cross Sections-Buffalo Bayou	1	1	8	2	24				36	\$ 5,415.00
Survey Control Maps	2	4	16	8					30	\$ 3,130.00
Trees 18" up	0.5	0.5	2	1		8			12	\$ 1,857.50
Geotechnical Bore Hole Locations	0.5	1	2	1	10				14.5	\$ 1,852.50
										\$ -
										\$ -
										\$ -
<b>HOURS SUB-TOTALS</b>	10	18.5	58	26	10	132	0	0	254.5	254.5
CONTRACT RATE PER HOUR	\$ 185.00	\$ 185.00	\$ 85.00	\$ 100.00	\$ 135.00	\$ 175.00	\$ 80.00	\$ 50.00		\$ 36,805.00
TOTAL LABOR COSTS	\$1,850.00	\$2,775.00	\$4,930.00	\$2,600.00	\$1,350.00	\$23,100.00	\$0.00	\$0.00		\$ 36,805.00
% DISTRIBUTION OF STAFF HOURS	3.9%	7.3%	22.8%	10.2%	3.6%	51.8%	0.0%	0.0%		
<b>SUBTOTAL Task</b>	\$1,850.00	\$2,775.00	\$4,930.00	\$2,600.00	\$1,350.00	\$23,100.00	\$0.00	\$0.00		\$ 36,805.00
<b>Direct Cost</b>										
Property Record Fees				Per Item Rate	Number of Items		Number of Items			Total Cost
Mileage				\$25.00			15			\$ 375.00
Certified Letters (includes 2 attempts)				\$0.58						\$ -
				\$7.50	2		15			\$ 225.00
<b>Direct Cost Totals</b>										\$ 600.00
<b>Project Totals</b>										\$ 39,435.00

March 21, 2018



Costello, Inc.  
9990 Richmond Avenue, Suite 450 North Building  
Houston, Texas 77042

Attn: Mr. Sam Kruse, P.E. – Partner / Vice President  
P: (713) 579 3850  
E: [skruse@costelloinc.com](mailto:skruse@costelloinc.com)

Re: Cost Estimate for Geotechnical Engineering Services  
Roesner Road Segment 1  
Roesner Road and Westheimer Parkway  
Fort Bend County, Texas  
Terracon Document No. P92185115

Dear Mr. Kruse:

We understand we have been selected based on our qualifications to provide Geotechnical Engineering Services for the above referenced project. The following are exhibits to the attached Agreement for Services.

Exhibit A	Project Understanding
Exhibit B	Scope of Services
Exhibit C	Compensation and Project Schedule
Exhibit D	Site Location
Exhibit E	Anticipated Exploration Plan

Our base fee to perform the scope of services described in this proposal is **\$64,100**. See **Exhibit C** for more details of our fees and consideration of additional services.

Terracon Consultants, Inc. 11555 Clay Road, Suite 100 Houston, Texas 77007  
P (713) 690 8989 F (713) 690 8787 [terracon.com](http://terracon.com)

Environmental

Facilities

Geotechnical

Materials



Cost Estimate for Geotechnical Engineering Services  
Roesner Road Segment 1 ■ Fort Bend County, Texas  
March 21, 2018 ■ Terracon Document No. P92185115



Your authorization for Terracon to proceed in accordance with this proposal can be issued by signing and returning a copy of the attached Agreement for Services to our office. If you have any questions, please do not hesitate to contact us.

Sincerely,  
Terracon Consultants, Inc.  
(Texas Firm Registration No. F3272)

A handwritten signature in blue ink, appearing to read "Fernando L. Aponte-Rivera".

Fernando L. Aponte-Rivera, E.I.T.  
Senior Staff Geotechnical Engineer

A handwritten signature in blue ink, appearing to read "Robert S. Scullion".

Robert S. Scullion, P.E.  
Project Engineer

A handwritten signature in blue ink, appearing to read "Patrick M. Beecher".

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



## AGREEMENT FOR SERVICES

This **AGREEMENT** is between Costello Inc ("Client") and Terracon Consultants, Inc. ("Consultant") for Services to be provided by Consultant for Client on the Roesner Road Seg 1 project ("Project"), as described in the Project Information section of Consultant's Proposal dated 02/28/2018 ("Proposal") unless the Project is otherwise described in Exhibit A to this Agreement (which section or Exhibit is incorporated into this Agreement).

1. **Scope of Services.** The scope of Consultant's services is described in the Scope of Services section of the Proposal ("Services"), unless Services are otherwise described in Exhibit B to this Agreement (which section or exhibit is incorporated into this Agreement). Portions of the Services may be subcontracted. When Consultant subcontracts to other individuals or companies, then consultant will collect from Client on the Subcontractors' behalf. Consultant's Services do not include the investigation or detection of, nor do recommendations in Consultant's reports address the presence or prevention of biological pollutants (e.g., mold, fungi, bacteria, viruses, or their byproducts) or occupant safety issues, such as vulnerability to natural disasters, terrorism, or violence. If Services include purchase of software, Client will execute a separate software license agreement. Consultant's findings, opinions, and recommendations are based solely upon data and information obtained by and furnished to Consultant at the time of the Services.
2. **Acceptance/ Termination.** Client agrees that execution of this Agreement is a material element of the consideration Consultant requires to execute the Services, and if Services are initiated by Consultant prior to execution of this Agreement as an accommodation for Client at Client's request, both parties shall consider that commencement of Services constitutes formal acceptance of all terms and conditions of this Agreement. Additional terms and conditions may be added or changed only by written amendment to this Agreement signed by both parties. In the event Client uses a purchase order or other form to administer this Agreement, the use of such form shall be for convenience purposes only and any additional or conflicting terms it contains are stricken. This Agreement shall not be assigned by either party without prior written consent of the other party. Either party may terminate this Agreement or the Services upon written notice to the other. In such case, Consultant shall be paid costs incurred and fees earned to the date of termination plus reasonable costs of closing the Project.
3. **Change Orders.** Client may request changes to the scope of Services by altering or adding to the Services to be performed. If Client so requests, Consultant will return to Client a statement (or supplemental proposal) of the change setting forth an adjustment to the Services and fees for the requested changes. Following Client's review, Client shall provide written acceptance. If Client does not follow these procedures, but instead directs, authorizes, or permits Consultant to perform changed or additional work, the Services are changed accordingly and Consultant will be paid for this work according to the fees stated or its current fee schedule. If project conditions change materially from those observed at the site or described to Consultant at the time of proposal, Consultant is entitled to a change order equitably adjusting its Services and fee.
4. **Compensation and Terms of Payment.** Client shall pay compensation for the Services performed at the fees stated in the Compensation section of the Proposal unless fees are otherwise stated in Exhibit C to this Agreement (which section or Exhibit is incorporated into this Agreement). If not stated in either, fees will be according to Consultant's current fee schedule. Fee schedules are valid for the calendar year in which they are issued. Fees do not include sales tax. Client will pay applicable sales tax as required by law. Consultant may invoice Client at least monthly and payment is due upon receipt of invoice. Client shall notify Consultant in writing, at the address below, within 15 days of the date of the invoice if Client objects to any portion of the charges on the invoice, and shall promptly pay the undisputed portion. Client shall pay a finance fee of 1.5% per month, but not exceeding the maximum rate allowed by law, for all unpaid amounts 30 days or older. Client agrees to pay all collection-related costs that Consultant incurs, including attorney fees. Consultant may suspend Services for lack of timely payment. It is the responsibility of Client to determine whether federal, state, or local prevailing wage requirements apply and to notify Consultant if prevailing wages apply. If it is later determined that prevailing wages apply, and Consultant was not previously notified by Client, Client agrees to pay the prevailing wage from that point forward, as well as a retroactive payment adjustment to bring previously paid amounts in line with prevailing wages. Client also agrees to defend, indemnify, and hold harmless Consultant from any alleged violations made by any governmental agency regulating prevailing wage activity for failing to pay prevailing wages, including the payment of any fines or penalties.
5. **Third Party Reliance.** This Agreement and the Services provided are for Consultant and Client's sole benefit and exclusive use with no third party beneficiaries intended. Reliance upon the Services and any work product is limited to Client, and is not intended for third parties other than those who have executed Consultant's reliance agreement, subject to the prior approval of Consultant and Client.
6. **LIMITATION OF LIABILITY.** CLIENT AND CONSULTANT HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING CONSULTANT'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE ASSOCIATED RISKS. TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF CONSULTANT (AND ITS RELATED CORPORATIONS AND EMPLOYEES) TO CLIENT AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE GREATER OF \$50,000 OR CONSULTANT'S FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF CONSULTANT'S SERVICES OR THIS AGREEMENT. PRIOR TO ACCEPTANCE OF THIS AGREEMENT AND UPON WRITTEN REQUEST FROM CLIENT, CONSULTANT MAY NEGOTIATE A HIGHER LIMITATION FOR ADDITIONAL CONSIDERATION IN THE FORM OF A SURCHARGE TO BE ADDED TO THE AMOUNT STATED IN THE COMPENSATION SECTION OF THE PROPOSAL. THIS LIMITATION SHALL APPLY REGARDLESS OF AVAILABLE PROFESSIONAL LIABILITY INSURANCE COVERAGE, CAUSE(S), OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY. THIS LIMITATION SHALL NOT APPLY TO THE EXTENT THE DAMAGE IS PAID UNDER CONSULTANT'S COMMERCIAL GENERAL LIABILITY POLICY.
7. **Indemnity/Statute of Limitations.** Consultant and Client shall indemnify and hold harmless the other and their respective employees from and against legal liability for claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are legally determined to be caused by their negligent acts, errors, or omissions. In the event such claims, losses, damages, or expenses are legally determined to be caused by the joint or concurrent negligence of Consultant and Client, they shall be borne by each party in proportion to its own negligence under comparative fault principles. Neither party shall have a duty to defend the other party, and no duty to defend is hereby created by this Indemnity provision and such duty is explicitly waived under this Agreement. Causes of action arising out of Consultant's Services or this Agreement regardless of cause(s) or the theory of liability, including negligence, indemnity or other recovery shall be deemed to have accrued and the applicable statute of limitations shall commence to run not later than the date of Consultant's substantial completion of Services on the project.
8. **Warranty.** Consultant will perform the Services in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. EXCEPT FOR THE STANDARD OF CARE PREVIOUSLY STATED, CONSULTANT MAKES NO WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, RELATING TO CONSULTANT'S SERVICES AND CONSULTANT DISCLAIMS ANY IMPLIED WARRANTIES OR WARRANTIES IMPOSED BY LAW, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
9. **Insurance.** Consultant represents that it now carries, and will continue to carry: (i) workers' compensation insurance in accordance with the laws of the states having jurisdiction over Consultant's employees who are engaged in the Services, and employer's liability insurance (\$1,000,000); (ii)



commercial general liability insurance (\$1,000,000 occ / \$2,000,000 agg); (iii) automobile liability insurance (\$1,000,000 B.I. and P.D. combined single limit); and (iv) professional liability insurance (\$1,000,000 claim / agg). Certificates of insurance will be provided upon request. Client and Consultant shall waive subrogation against the other party on all general liability and property coverage.

10. **CONSEQUENTIAL DAMAGES.** NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR LOSS OF PROFITS OR REVENUE; LOSS OF USE OR OPPORTUNITY; LOSS OF GOOD WILL; COST OF SUBSTITUTE FACILITIES, GOODS, OR SERVICES; COST OF CAPITAL; OR FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, PUNITIVE, OR EXEMPLARY DAMAGES.
11. **Dispute Resolution.** Client shall not be entitled to assert a Claim against Consultant based on any theory of professional negligence unless and until Client has obtained the written opinion from a registered, independent, and reputable engineer, architect, or geologist that Consultant has violated the standard of care applicable to Consultant's performance of the Services. Client shall provide this opinion to Consultant and the parties shall endeavor to resolve the dispute within 30 days, after which Client may pursue its remedies at law. This Agreement shall be governed by and construed according to Kansas law.
12. **Subsurface Explorations.** Subsurface conditions throughout the site may vary from those depicted on logs of discrete borings, test pits, or other exploratory services. Client understands Consultant's layout of boring and test locations is approximate and that Consultant may deviate a reasonable distance from those locations. Consultant will take reasonable precautions to reduce damage to the site when performing Services; however, Client accepts that invasive services such as drilling or sampling may damage or alter the site. Site restoration is not provided unless specifically included in the Services.
13. **Testing and Observations.** Client understands that testing and observation are discrete sampling procedures, and that such procedures indicate conditions only at the depths, locations, and times the procedures were performed. Consultant will provide test results and opinions based on tests and field observations only for the work tested. Client understands that testing and observation are not continuous or exhaustive, and are conducted to reduce - not eliminate - project risk. Client shall cause all tests and inspections of the site, materials, and Services performed by Consultant to be timely and properly scheduled in order for the Services to be performed in accordance with the plans, specifications, contract documents, and Consultant's recommendations. No claims for loss or damage or injury shall be brought against Consultant by Client or any third party unless all tests and inspections have been so performed and Consultant's recommendations have been followed. Unless otherwise stated in the Proposal, Client assumes sole responsibility for determining whether the quantity and the nature of Services ordered by Client is adequate and sufficient for Client's intended purpose. Client is responsible (even if delegated to contractor) for requesting services, and notifying and scheduling Consultant so Consultant can perform these Services. Consultant is not responsible for damages caused by Services not performed due to a failure to request or schedule Consultant's Services. Consultant shall not be responsible for the quality and completeness of Client's contractor's work or their adherence to the project documents, and Consultant's performance of testing and observation services shall not relieve Client's contractor in any way from its responsibility for defects discovered in its work, or create a warranty or guarantee. Consultant will not supervise or direct the work performed by Client's contractor or its subcontractors and is not responsible for their means and methods. The extension of unit prices with quantities to establish a total estimated cost does not guarantee a maximum cost to complete the Services. The quantities, when given, are estimates based on contract documents and schedules made available at the time of the Proposal. Since schedule, performance, production, and charges are directed and/or controlled by others, any quantity extensions must be considered as estimated and not a guarantee of maximum cost.
14. **Sample Disposition, Affected Materials, and Indemnity.** Samples are consumed in testing or disposed of upon completion of the testing procedures (unless stated otherwise in the Services). Client shall furnish or cause to be furnished to Consultant all documents and information known or available to Client that relate to the identity, location, quantity, nature, or characteristic of any hazardous waste, toxic, radioactive, or contaminated materials ("Affected Materials") at or near the site, and shall immediately transmit new, updated, or revised information as it becomes available. Client agrees that Consultant is not responsible for the disposition of Affected Materials unless specifically provided in the Services, and that Client is responsible for directing such disposition. In no event shall Consultant be required to sign a hazardous waste manifest or take title to any Affected Materials. Client shall have the obligation to make all spill or release notifications to appropriate governmental agencies. The Client agrees that Consultant neither created nor contributed to the creation or existence of any Affected Materials conditions at the site and Consultant shall not be responsible for any claims, losses, or damages allegedly arising out of Consultant's performance of Services hereunder, or for any claims against Consultant as a generator, disposer, or arranger of Affected Materials under federal, state, or local law or ordinance.
15. **Ownership of Documents.** Work product, such as reports, logs, data, notes, or calculations, prepared by Consultant shall remain Consultant's property. Proprietary concepts, systems, and ideas developed during performance of the Services shall remain the sole property of Consultant. Files shall be maintained in general accordance with Consultant's document retention policies and practices.
16. **Utilities.** Client shall provide the location and/or arrange for the marking of private utilities and subterranean structures. Consultant shall take reasonable precautions to avoid damage or injury to subterranean structures or utilities. Consultant shall not be responsible for damage to subterranean structures or utilities that are not called to Consultant's attention, are not correctly marked, including by a utility locate service, or are incorrectly shown on the plans furnished to Consultant.
17. **Site Access and Safety.** Client shall secure all necessary site related approvals, permits, licenses, and consents necessary to commence and complete the Services and will execute any necessary site access agreement. Consultant will be responsible for supervision and site safety measures for its own employees, but shall not be responsible for the supervision or health and safety precautions for any other parties, including Client, Client's contractors, subcontractors, or other parties present at the site.

Consultant: **Terracon Consultants, Inc.**  
 By:  Date: **3/21/2018**  
 Name/Title: **Patrick M. Beecher, P.E. / Senior Principal / Geotechnical Services Manager**  
 Address: **11555 Clay Rd Ste 100**  
**Houston, TX 77043-1239**  
 Phone: **(713) 690-8989** Fax: **(713) 690-8787**  
 Email: **Patrick.Beecher@terracon.com**

Client: **Costello Inc**  
 By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Name/Title: **Sam Kruse /**  
 Address: **9990 Richmond Ave Ste 450 North Building**  
**Houston, TX 77042**  
 Phone: **(713) 579-3850** Fax: \_\_\_\_\_  
 Email: **skruse@coseng.com**



## EXHIBIT A - PROJECT UNDERSTANDING

Our scope of services is based on our understanding of the project as described by Costello and the expected subsurface conditions as described below. We have not visited the project site to confirm the information provided. Aspects of the project, undefined or assumed, are highlighted as shown below. We request the design team verify this information prior to our initiation of field exploration activities.

### Site Location

Item	Description
Parcel information	The project is located at Roesner Road and Westheimer Parkway in Fort Bend County, Texas.
Existing improvements	A residential subdivision with detention pond areas can be found in the southern portion of the site. In addition, moderately to heavily vegetated areas and Buffalo Bayou can be found within the project limits. We also understand that several natural gas line easements are located north of the Buffalo Bayou crossing.
Current ground cover	Moderately to heavily vegetated areas.
Existing topography	Relatively level.
Site access	We anticipate to access the site with an ATV drilling equipment.

### Planned Construction

Item	Description
Project description	The project is planned to include the construction of a new four-lane boulevard beginning about ¼ miles northeast of the intersection of Roesner Road and Gaston Road and extending just over one mile northeast to the intersection of Roesner Road and Westheimer Parkway. The project also is planned to include the construction of a new bridge over the Buffalo Bayou crossing, improvements to the existing channel and culvert and sewer lines additions.

Item	Description
Proposed improvements	Roadway
	<ul style="list-style-type: none"> <li>■ Four-lane concrete roadway with curb and gutter, approximately one mile in length. We anticipate maximum cuts and fills in the order of 2 feet.</li> <li>■ We understand traffic information is not available at this time.</li> </ul>
	Bridge over Buffalo Bayou
	<ul style="list-style-type: none"> <li>■ We understand that two five-span bridges with an approximate length of 300 feet are planned to be constructed to accommodate traffic from northbound and southbound directions.</li> <li>■ We understand the bridges are planned to be supported by drilled shaft foundations.</li> </ul>
	Culvert and Sewer Lines
	<ul style="list-style-type: none"> <li>■ A new culvert is planned to be constructed at the Westheimer Parkway crossing using trenchless construction methods.</li> <li>■ We understand that sewer lines are planned to be constructed at the beginning and end of the proposed road alignment using open-cut methods.</li> <li>■ We assume a maximum embedment depth of approximately 15 feet below the existing grade for the proposed culvert and sewer lines.</li> </ul>
	Channel Improvements
	<ul style="list-style-type: none"> <li>■ We understand the existing channel along the Buffalo Bayou will be improved to reduce the floodway area near the proposed bridge location.</li> <li>■ Information about the existing channel dimensions and details regarding the planned improvements has not been provided at this time.</li> </ul>



## EXHIBIT B - SCOPE OF SERVICES

Our proposed scope of services consists of field exploration, laboratory testing, and engineering/project delivery. These services are described in the following sections.

### Field Exploration

The field exploration program consists of the following:

Number of Borings	Planned Boring Depth (feet) <sup>1</sup>	Planned Location
8	20	Proposed roadway alignment
3	100	Proposed bridges
3	50	Channel improvement area
3	30	Culvert and sewer lines

<sup>1</sup>. Below existing grade

**Boring Layout and Elevations:** We use handheld GPS equipment to locate borings with an estimated horizontal accuracy of +/-25 feet. Field measurements from existing site features may be utilized. The layout of the borings and test locations will be approximate. If available, approximate elevations are obtained by interpolation from a site specific, surveyed topographic map.

**Subsurface Exploration Procedures:** We advance soil borings with an all-terrain (ATV) mounted drill rig using continuous flight augers (solid stem and/or hollow stem, as necessary, depending on soil conditions). Samples are obtained at intervals of 2 feet in the upper 12 feet of each boring and at intervals of 5 feet thereafter. Soil sampling is typically performed using open tube and/or split-barrel sampling procedures. In the open tube sampling procedure, an open, seamless steel tube with a sharp cutting edge is pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split barrel sampling procedure, a standard 2-inch outer diameter split barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. The samples are placed in appropriate containers, taken to our soil laboratory for testing, and classified by a geotechnical engineer. In addition, we observe and record groundwater levels during drilling and sampling.

Our exploration team prepares field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials encountered during drilling, and our interpretation of subsurface



conditions between samples. Final boring logs, prepared from field logs, represent the geotechnical engineer's interpretation, and include modifications based on observations and laboratory tests.

Based on the information provided to us and available aerial photographs, we understand that the site is moderately to heavily wooded. Therefore, the site is likely inaccessible to drilling equipment and clearing of pathways will likely be required. We understand that there are no conflicts with regard to clearing of pathways. If there are any restricted areas, trees, facilities, etc. on-site that are sensitive to clearing, Terracon should be notified in advance so that we avoid these areas during our clearing activities. The additional cost associated with having Terracon coordinate and clear pathways on-site is provided in **Exhibit C**.

Our scope of services does not include services associated with wet ground conditions, surveying of the boring locations, or repair of damage to existing landscape. If such services are desired by the owner/client, we should be notified so we can adjust our scope of services.

**Property Disturbance:** We backfill borings with auger cuttings after completion. Our services do not include repair of the site beyond backfilling our boreholes. Excess auger cuttings are dispersed in the general vicinity of the borehole. Because backfill material often settles below the surface after a period, we recommend boreholes are checked periodically and backfilled, if necessary. We can provide this service, or grout the boreholes for additional fees, at your request.

### **Laboratory Testing**

The project engineer reviews field data and assigns various laboratory tests to better understand the engineering properties of various soil strata. Procedural standards noted below are for reference to methodology in general. In some cases, method variations are applied based on local practices and professional judgement. Standards noted below include reference to other related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D1140 Standard Test Methods for Amount of Materials in Soils Finer than the No. 200 Sieve
- ASTM D422 Standard Test Method for Particle-Size Analysis of Soils
- ASTM D2166/D2166M Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
- ASTM D2850 Standard Test Method for Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils



- ASTM D4767 Standard Test Method for Consolidated Undrained Triaxial Test for Cohesive Soils
- ASTM D2435/D2435M Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
- ASTM D4221 Standard Test Method for Dispersive Characteristics of Clay Soil by Double Hydrometer

Our laboratory testing program includes examination of soil samples by an engineer. Based on the results of our field and laboratory testing programs, we describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

### **Safety**

Terracon is currently not aware of environmental concerns at this project site that would create health or safety hazards associated with our exploration program; thus, our scope considers standard OSHA Level D Personal Protection Equipment (PPE) appropriate. Our scope of services does not include environmental site assessment services, but identification of unusual or unnatural materials encountered while drilling will be noted on our logs and discussed in our report.

Exploration efforts require borings (and possibly excavations) into the subsurface, therefore Terracon complies with local regulations to request a utility location service, Texas811, to help locate public utilities within the vicinity of the site. We consult with the owner/client regarding potential utilities or other unmarked underground hazards. Based upon the results of this consultation, we consider the need for alternative subsurface exploration methods, as the safety of our field crew is a priority.

All private utilities should be marked by the owner/client prior to commencement of field exploration. Terracon will not be responsible for damage to private utilities that are not made aware to us. If the owner/client is not able to accurately locate private utilities, Terracon can assist the owner/client by coordinating or subcontracting with a private utility locating services. Fees associated with the additional services are not included in our current scope of services. The detection of underground utilities is dependent upon the composition and construction of the utility line; some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private utility locate service would not relieve the owner of their responsibilities in identifying private underground utilities.

**Site Access:** Terracon must be granted access to the site by the property owner. By acceptance of this proposal, without information to the contrary, we consider this as authorization to access the property for conducting field exploration in accordance with the scope of services.

## Engineering and Project Delivery

Results of our field and laboratory programs are evaluated by a professional engineer. The engineer develops a geotechnical site characterization, performs the engineering calculations necessary to evaluate foundation alternatives, and develops appropriate geotechnical engineering design criteria for earth-related phases of the project.

Your project is delivered using our **GeoReport** system. Upon initiation, we provide you and your design team the necessary link and password to access the website (if not previously registered). Each project includes a calendar to track the schedule, an interactive site map, a listing of team members, access to the project documents as they are uploaded to the site, and a collaboration portal. A typical delivery process includes three basic stages:

- Stage 1: Project Planning
- Stage 2: Site Characterization
- Stage 3: Geotechnical Engineering

When utilized, a collaboration portal documents communication, eliminating the need for long email threads. This collaborative effort allows prompt evaluation and discussion of options related to the design and associated benefits and risks of each option. With the ability to inform all parties as the work progresses, decisions and consensus can be reached faster. In some cases, only minimal uploads and collaboration will be required, because options for design and construction are limited or unnecessary. This is typically the case for uncomplicated projects with no anomalies found at the site.

When services are complete, we upload a printable version of our completed final geotechnical engineering report, including the professional engineer's seal and signature, which documents our services. Previous submittals, collaboration, and final report are maintained in our system indefinitely. This allows future reference and integration into subsequent aspects of our services, as the project goes through final design and construction.

The final geotechnical engineering report provides the following:

- Boring logs with field and laboratory data
- Stratification based on visual soil classification
- Groundwater levels observed during and after completion drilling
- Site and Boring location plans
- Subsurface exploration procedures
- Description of subsurface conditions
- Bridge foundation design and construction recommendations
- Subgrade preparation/earthwork recommendations
- Utility construction considerations



■ Pavement design guidelines

If needed, Terracon can perform slope stability analyses of side slopes once the channel improvements have been defined. Therefore, we included these services as a separate item as presented on Exhibit C. Slope stability analysis would be performed under short-term, long-term, and rapid drawdown conditions. We request that the client provide all applicable cross sections and any other data relevant to the slope stability analysis.

We understand that erosion and scour analysis will be performed by others and are not included in our scope of work.

### Additional Services

In addition to basic services noted above, the following services are often associated with geotechnical engineering services. Fees for basic services noted above do not include the following:

**Review of Plans and Specifications:** Our geotechnical report and associated verbal and written communications will be used by others in the design team to develop plans and specifications for construction. Review of the project plans and specifications is a vital part of our geotechnical engineering services. This consists of review of project plans and specifications related to site preparation, foundation, and pavement construction. Our review includes a written statement, which conveys our opinions, related to the plans and specifications' consistency with our geotechnical engineering recommendations.

**Perform Environmental Assessments:** Our scope for this project does not include, either specifically or by implication, an environmental assessment of the site intended to identify or quantify potential site contaminants. If the client/owner is concerned about potential for such conditions and/or contamination, an environmental site assessment should be conducted. We can provide a proposal for an environmental assessment, if desired.

## EXHIBIT C - COMPENSATION AND PROJECT SCHEDULE

### Compensation

Based upon our understanding of the site, the project as summarized in **Exhibit A** and our planned scope of services outlined in **Exhibit B**, our fee is shown in the following table:

Task	Cost
Field Exploration	\$22,850.00
Laboratory Testing	\$22,050.00



Task	Cost
Geotechnical Consulting and Reporting	\$19,200.00
<b>Total Estimate</b>	<b>\$64,100.00</b>

Slope stability analysis, if needed to support the proposed channel improvements, is not included in our scope of work and can be performed as an additional service. We estimate performing our slope stability analyses on a time-and-materials basis using a Project Engineer hourly rate of \$150/hour. We anticipate a budget of \$4,000 to \$8,000 be established for anticipated slope stability analyses associated with the channel improvements.

To have Terracon clear pathways to the boring locations by bulldozer for our field program we anticipate an additional cost of \$3,000 to \$5,000 in addition to our total estimate. (The tree debris would only be moved away from the cleared pathways but not removed from the site.). The total cost for our scope of services would then be \$67,100.00 to \$69,100.00.

Unless instructed otherwise, we will submit our invoice(s) to the address shown at the beginning of this proposal. If conditions are encountered that require scope of work revisions and/or result in higher fees, we will contact you for approval prior to initiating these services. A supplemental proposal stating the modified scope of services as well as its effect on our fee will be prepared. We will not proceed without your authorization, as evidenced by your signature on the Supplemental Agreement for Services form.

### Project Schedule

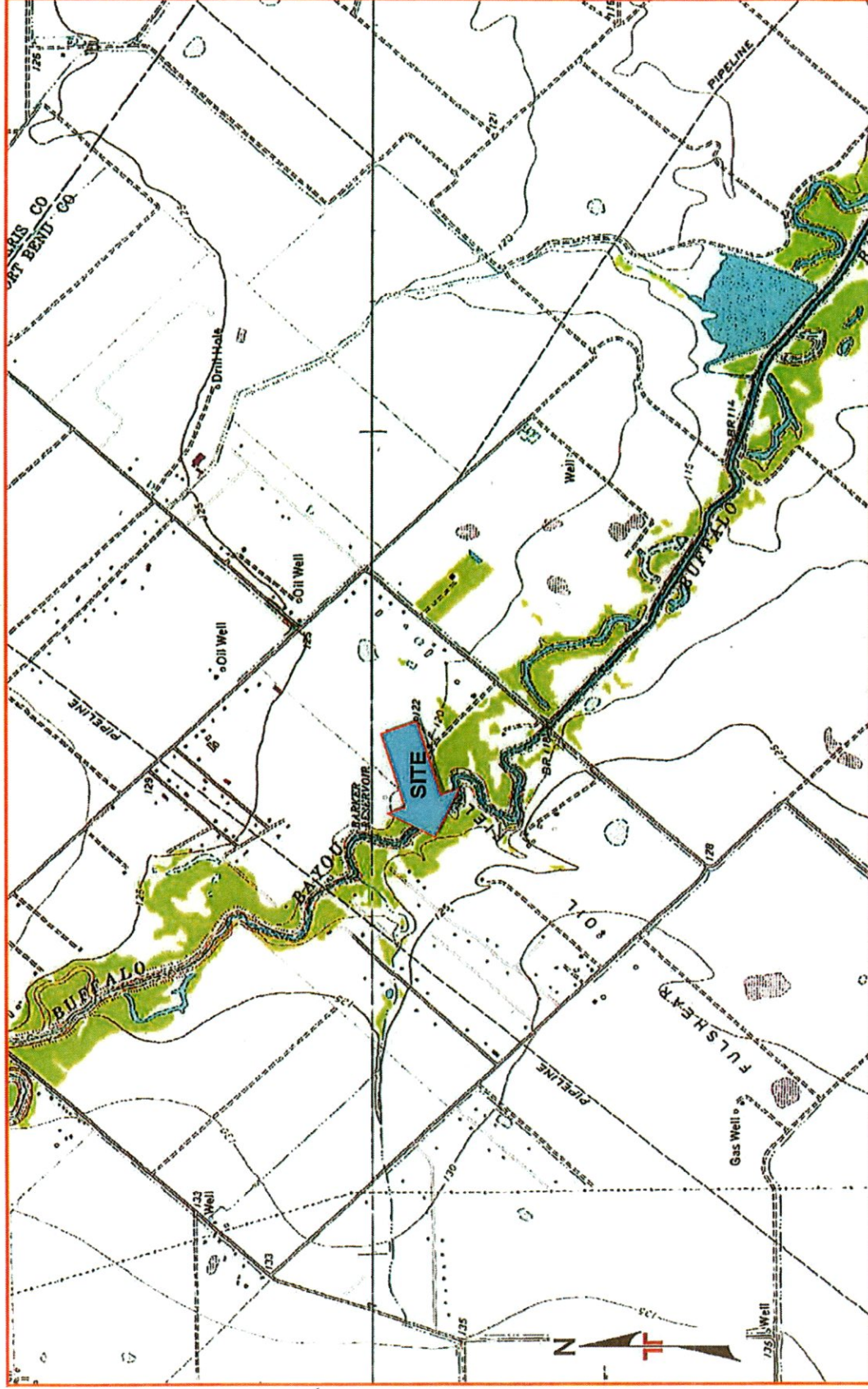
We developed a schedule to complete the scope of services based upon our existing availability and understanding of your project schedule. This schedule does not account for any delays in field exploration beyond our control, such as weather conditions, permit delays, or lack of permission to access the boring locations. In the event the schedule provided is inconsistent with your needs, please contact us so we may consider alternatives.

GeoReport Stage	Posting Date from Notice to Proceed <sup>1,2</sup>
Project Planning	5 working days
Site Characterization	20 working days
Geotechnical Engineering	40 working days

1. Upon receipt of your notice to proceed we will activate the schedule component of our **GeoReport** website with specific, anticipated calendar dates for the three delivery points noted above as well as other pertinent events such as field exploration crews on-site, etc.
2. We will maintain a current calendar of activities within our **GeoReport** website. In the event of a need to modify the schedule, the schedule will be updated to maintain a current awareness of our plans for delivery.



**SITE LOCATION - EXHIBIT D**  
Roesner Road Segment 1 ■ Fort Bend County, Texas  
March 21, 2018 ■ Terracon Proposal No. P92185115



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY  
QUADRANGLES INCLUDE: KATY, TX (11°19'00") and RICHMOND NE, TX (11°19'00").

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT  
INTENDED FOR CONSTRUCTION PURPOSES



**EXPLORATION PLAN – EXHIBIT E**  
Roesner Road Segment 1 ■ Fort Bend County, Texas  
March 21, 2018 ■ Terracon Project No. P92185115



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT  
INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY  
MICROSOFT BING MAPS



May 7, 2018

Mr. Sam Kruse, P.E.  
Partner/Vice President Municipal Division  
Costello Engineering & Surveying  
9990 Richmond Avenue, Suite 450 North Building  
Houston, Texas 77042

Subject: Project No. 3-05: Roesner Road Segment 1  
Signalization at Westheimer Parkway

Dear Sam,

Transcend Engineers & Planners, LLC (Transcend) is pleased to submit this proposal to provide engineering services for Signal Design at the intersection of Roesner Road and Westheimer Parkway in Katy, TX including traffic signal support for Preliminary Engineering. Based on information received from you, we understand that the project will:

- Design and construct a 4-lane boulevard within 100' ROW from existing Roesner Road to Westheimer parkway with large bridge over Buffalo Bayou crossing
- Cross a total of 5 natural gas pipelines multiple times running to the existing Enstor facility.
- Provide drainage channel improvements to Buffalo Bayou necessary to reduce floodway area at bridge crossing.
- Install a signal at Westheimer Parkway.

#### Assumptions

- Fort Bend County has performed operational analysis of the subject intersection and has established required Level of Service (LOS) in the design year.
- Fort Bend County has performed signal warrant study and left turn phasing analysis for the subject intersection.
- Signal Timing and Crosswalk Locations have been identified by Fort Bend County based on previously performed engineering studies.
- The engineering design shall be performed in accordance with Fort Bend County and TxDOT design guidelines, standards and specifications and generally accepted procedures, including approved variances.
- The intersection is unsignalized at this time and shall receive a new conventional signal system controlled by Econolite Cobalt controller or similar in a ground-mounted cabinet.
- In addition to the design of the signal, Transcend shall provide contract and construction support.
- Interim reviews shall be at the 70% and 95% submittals.

#### Scope of Work

##### PER Support Services

Transcend shall support the Preliminary Engineering Report (PER) preparation to include the following:

- Present an analysis of the intersection traffic operation and LOS for the AM and PM peak hours for existing traffic/geometric conditions and proposed traffic/geometric conditions
- Develop schematic of the proposed signal layout [up to two (2) layouts]
- Develop Construction Cost estimate for the approved signal layout

## Design Services

Transcend shall design the SIGNAL to include the following:

- Mast arm configuration and horizontal LED vehicle signal heads
- Four pole-mounted LED luminaires, one at each corner, for safety lighting.
- Wireless magnetometer vehicle detection system (WMVDS) for vehicles, and push buttons for pedestrians and be fully actuated
- Protected/permissive phasing with flashing yellow indications for left turns
- Pedestrian related LED countdown signals, push buttons, signing and crosswalks
- New wheelchair ramps (perpendicular or diagonal) in compliance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) as adopted by Fort Bend County/TxDOT
- New pavement markings up to 200 feet on each leg of the intersection

Transcend shall develop Plan layouts to include the following sheets:

- Title Sheet & Index of sheets
- General Notes
- Basis of Estimate
- Existing Conditions Layout
- Proposed Traffic Signal Layout
- Signal Standards and Details
- Signing and Pavement Markings Layout

Transcend shall prepare Plan Layouts per Fort Bend County and TxDOT signal design guidelines as one bid-ready package as follows:

- Prepare at 1"=40' scale in English Units as 11" x 17" layouts
- Submit one set of bond layouts and one PDF copy submitted at each interim review
- Sign and Seal bond set of plans for final submittal
- Prepare all design drawings using MicroStation consistent with the level structure required by Fort Bend County
- Provide basis of estimate in Fort Bend County format
- Provide computer files containing all required design drawings

## Exclusions

The following are NOT included in Transcend's scope of work:

- Left Turn Lane modifications/extensions
- Interconnect Layout
- Site-specific traffic control plans
- Traffic signal timing adjustment
- Topographic Survey
- Construction Staking
- ROW Abstracting
- Geotechnical Engineering
- Drainage Design
- Storm Water Pollution Prevention Plans (SW3P)
- Expert Testimony
- Record drawings
- Design changes outside scope of services





- Coordination on Easements and Mast Arm Style
- Coordination with power company, electric company, HOA and Utilities
- Review shop drawings or perform final inspection
- Contract Support Services
- Construction Support Services

#### Compensation

Transcend's estimated fixed fee is as follows which includes labor and non-labor reimbursable expenses. The hours estimate and cost breakdown are shown in Attachment A.

Task	Fee
PER Support Services	\$6,090
Design Services	\$25,260
<b>TOTAL</b>	<b>\$31,350</b>

Transcend shall submit monthly Invoices as lumpsum showing percent work complete. Transcend will consider work not specifically stated above as additional with a right to negotiate.

#### Schedule

Transcend estimates that the Design Services for the subject signal can be completed within 120 calendar days from Notice to Proceed (NTP). This schedule includes a reasonable time required for topographic survey, utility coordination and agency review. If the schedule needs to be revised, Transcend will defer to you and Fort Bend County. Note that Transcend shall not proceed with any work or additional services without written NTP from Fort Bend County.

Please contact me at 832.492.4499 or at [raj@transcendengineers.com](mailto:raj@transcendengineers.com) with any questions. We appreciate the opportunity to serve Fort Bend County by working with you and look forward to NTP.

Regards,

Transcend Engineers & Planners, LLC.

*RB Basavaraju*

Raj Basavaraju, P.E., PTOE  
Principal

Attachment A: Hours Estimate & Cost Breakdown

**ATTACHMENT A**  
**HOURS ESTIMATE & COST BREAKDOWN**  
**PROJECT NO. 3-05: ROESNER ROAD SEGMENT 1**  
**SIGNALIZATION AT WESTHEIMER PARKWAY**

Task Description	No. of Sheets	Project Manager	Project Engineer	Traffic Engineer	CADD Technician	Project Admin.	Total Hours	Cost
<b>PER SUPPORT SERVICES</b>								
Project Management (incl. QA/QC)	n/a	1	2	6		1	2	\$300.00
Operational Analysis Summary	n/a						8	\$1,140.00
Signal Schematics (2 Proposed Layouts)	2	2	4	6	18		30	\$3,780.00
Construction Cost Estimate (1 Approved Layout)	n/a		2	4			6	\$870.00
<b>PER SUPPORT SERVICES HOURS/COST</b>	<b>2</b>	<b>3</b>	<b>8</b>	<b>16</b>	<b>18</b>	<b>1</b>	<b>46</b>	<b>\$6,090.00</b>
<b>DESIGN SERVICES</b>								
Project Management (incl. QA/QC)	n/a	4	4	4		2	6	\$1,020.00
Site Inventory	n/a						8	\$1,200.00
Meetings (Kick-off, Coordination)	n/a	2	2				4	\$750.00
Title Sheet & Index of sheets	1		1	1	4		5	\$555.00
General Notes	1	1	1	2	4		8	\$1,065.00
Basis of Estimate	1	1	6	6	4		17	\$2,430.00
Existing Conditions Layout	1	1	3	4	8		16	\$2,085.00
Proposed Traffic Signal Layout	3	4	8	12	60		84	\$10,080.00
Signal Standards and Details	10		2	2	6		10	\$1,230.00
Signing and Pavement Markings Layout	1	1	3	8	16		28	\$3,465.00
Submittals (70%, 95%, 100%)	n/a		1	3	6	2	12	\$1,380.00
<b>DESIGN SERVICES HOURS/COST</b>	<b>18</b>	<b>14</b>	<b>30</b>	<b>42</b>	<b>108</b>	<b>4</b>	<b>198</b>	<b>\$25,260.00</b>
<b>GRAND TOTAL</b>								<b>\$31,350.00</b>