STATE OF TEXAS §
§
COUNTY OF FORT BEND §

AMENDMENT TO AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES

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

WHEREAS, the parties executed and accepted that certain Agreement for Professional Engineering Services on May 22, 2018 pursuant to SOQ 14-025, (hereinafter "Agreement"); and

WHEREAS, the parties desire to amend the Agreement to allow Contractor to provide additional Services under the Agreement.

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

1. County shall pay Contractor an additional amount not to exceed one hundred thirty thousand six hundred twenty-six dollars and 60/100 ($130,626.60) to perform the additional Services, as described in Contractor's Proposal for Engineering Services – Amendment No. 1 dated November 26, 2018 attached hereto as Exhibit "A" and incorporated herein for all purposes.

2. The Maximum Compensation payable to Contractor for all Services rendered is hereby increased to an amount not to exceed six hundred two thousand nine hundred forty-eight dollars and 60/100 ($602,948.60), authorized as follows:

   $472,322.00 under the Agreement; and

   $130,626.60 under this Amendment.

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

Except as provided herein, all terms and conditions of the Agreement shall remain unchanged.

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

FORT BEND COUNTY

____
KP George, County Judge

____
Date

ATTEST:

____
Laura Richard, County Clerk

APPROVED:

Richard W. Stolleis

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

APPROVED AS TO LEGAL FORM:

____
Marcus D. Spencer, First Assistant County Attorney

MCDONOUGH ENGINEERING CORPORATION

Ranney McDonough
Ranney McDonough, President

3-20-19
Date

AUDITOR'S CERTIFICATE

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

____
Robert Ed Sturdivant, County Auditor

I:\Marcus\Agreements\Engineering\Road Construction\Benton\17110\Amend 1 - Pro Eng Svcs.Benton - Seg 1.MDE.v2.docx.3/20/2019

EXHIBIT A

McDONOUGH ENGINEERING CORPORATION
Civil Engineers

EXHIBIT "A" SCOPE OF SERVICES

November 26, 2018

Binkley & Barfield, Inc.
Tommy V. Cromer, P.E.
1710 Seamist Dr.
Houston, TX 77008

Attn: Kevin A. Mineo, P.E.

RE: Proposal for Professional Engineering Services- Amendment No. 1
Benton Road: From FM 762 to 300' South of Reading Road
Precinct 1
Fort Bend County
MEC Project No. 18110

PROPOSED SCOPE

In response to additional scoping items requested by Fort Bend County, a scope change for the Benton Road project has been prepared which includes the following items:

BASIC SERVICES

1. Extension of project limits to include completion of the boulevard section of Williams Way North of FM 762, as well as reconstructing a portion of FM 762 to allow for a reverse crown section at the intersection with Benton Road, and the corresponding transition lengths from normal crown to the East and West of the intersection. The reverse crown section of FM 762 at the Benton Road intersection was requested to provide a more continuous vertical slope from the rail road crossing, just South of the intersection, through the intersection and connecting to Williams Way to the North. Civil engineering design services related to this item are further outlined in the attached task breakdown by MEC, and scope of work by BGE.

2. Addition of a traffic signal warrant study at the intersection of Benton Road and Reading Road, as further outlined in the attached scope of work from TranSystems.

3. Addition of signal improvements at the intersection of Benton Road and FM 762, as further outlined in the attached scope of work from TranSystems.

4. Additional survey as related to the items added above, as further outlined in the attached scope of work from Jones and Carter.

5. Additional geotechnical services as related to the items added above, as further outlined in the attached scope of work from Aviles Engineering Corporation.

CIVIL DESIGN SERVICES

McDonough Engineering Corporation proposes to complete the following tasks:

- Coordinate with subconsultants, including TranSystems, Jones and Carter, BGE, and Aviles
- Coordinate with TxDOT on the proposed work within their Right-of-Way at FM 762, including responding to their review comments, correspondence, and some meetings if required
- Prepare a plan sheet for existing and proposed typical section for FM 762 improvements
- Prepare roadway plan and profile sheets for FM 762 intersection with Williams Way Boulevard and Benton Road, and for FM 762 along the transition from normal crown to reverse crown
- Analyze drainage impacts of proposed FM 762 and Williams Way Boulevard improvements on existing roadside ditches and storm sewer.
- Incorporate additional work into design for Signing and Pavement Marking, Storm Water Pollution Prevention Plans, Demolition Plans, Earthwork Estimates, and Construction Cost Estimate.

Benton Road - FM 762 to 300' South of Reading Road - Precinct 1 - Amendment No. 1
Level of Effort Estimate

McDonough Engineering Corportation

11/26/2018

	Proj. Man.	Engineer	Senior Designer	Sr. CADD	CADD	Clerical	Fee	Total Hours per Task	Number of sheets	Hour per Sheet
Phase II - Final Design Phase										
Project Administration	4	8					$ 2,400.00	12	N/A	N/A
Railroad Coordination							$ -	0	N/A	N/A
TxDOT Coordination	6	12	4				$ 4,200.00	22	N/A	N/A
Review Documentation and incorporate Sheets by other consultants (Surveyor, Signal Design)	2	4	6				$ 2,100.00	12	N/A	N/A
Research Documentation for Existing Utilities within ROW	1	2	6				$ 1,500.00	9	N/A	N/A
QA/QC										
Internal QA/QC (3 submittals)	1	4	6				$ 1,860.00	11	N/A	N/A
Construction Documents										
Plans										
Cover sheet							$ -	0		
Index of Sheets							$ -	0		
General Notes							$ -	0		
Legend							$ -	0		
Survey Control Sheets							$ -	0		
Existing Typical Section		1	2		4		$ 880.00	7		
Proposed Typical Sections		1	2		6		$ 1,080.00	9	1	9.0
Storm Sewer Drainage Area Map							$ -	0		
Storm Sewer Calculations	1	2	6				$ 1,500.00	9		
Overall Drainage Area Map		2	2		4		$ 1,060.00	8		
Detention Basin							$ -	0		
Demolition Plans		2	2	6	8		$ 2,210.00	18	1	18.0
Railroad Crossing							$ -	0		
Railroad Crossing Details							$ -	0		
Plan and Profile (20 scale)	2	8	10	16	30		$ 8,420.00	66	2	33.0
Relocation Plans - Water and Sewer							$ -	0		
Details										
Concrete Pavement Details							$ -	0		
Flexible Pavement Details		1	2		2		$ 680.00	5	1	5.0
Concrete Driveway Details							$ -	0		
ADA Ramp Details							$ -	0		
Storm Sewer Construction Details							$ -	0		
Type "A" Inlet Details							$ -	0		
Modified Type "A" Inlet w/ Concrete Apron							$ -	0		
Type "B-B" Inlet Details							$ -	0		
Modified Type "B-B" Inlet Details							$ -	0		
Monolithic Type C, C-1, C-2, and C-2A Inlet Details							$ -	0		
Precast Concrete Storm Sewer Manhole Details							$ -	0		
Junction Box Manhole Detail							$ -	0		
Flexbeam Guardrail Details							$ -	0		
Type III Barricade Details							$ -	0		
Safety End Treatment for 12"-72" Dia. Pipe Culverts							$ -	0		
Traffic Control Plans										

Benton Road - FM 762 to 300' South of Reading Road - Precinct 1 - Amendment No. 1
Level of Effort Estimate

McDonough Engineering Corportation

11/26/2018

	Proj. Man.	Engineer	Senior Designer	Sr. CADD	CADD	Clerical	Fee	Total Hours per Task	Number of sheets	Hour per Sheet
Phasing Layout with General Notes							$ -	0		
Typical Construction Cross-sections							$ -	0		
Advanced Warning Signs Layouts							$ -	0		
Phase One Layouts							$ -	0		
Phase Two Layouts							$ -	0		
Temporary Traffic Signal (Benton at FM 762)							$ -	0		
Storm Water Pollution Prevention Plans			2	2	4		$ 950.00	8	1	8.0
Storm Water Pollution Prevention Plan Details							$ -	0		
Signing and Paving Marking Plans		3	3	8	16		$ 3,590.00	30	2	15.0
Pavement Marking Details		1	2		4		$ 880.00	7	1	7.0
Earthwork Table				1	3		$ 425.00	4	1	4.0
Cross Sections							$ -	0		
Construction Cost Estimate		1	2		2		$ 680.00	5	N/A	N/A
Project Manual (Bid form, specification TOC, special specs)		2	4				$ 960.00	6	N/A	N/A
Phase III - Bid/Construction Phase										
Construction Submittal Review		2	4				$ 960.00	19	N/A	N/A
RFI Responses		2	4				$ 960.00	19	N/A	N/A
Field Visits and Progress Meetings		2	2				$ 660.00	14	N/A	N/A
Total Hours Phase II - Final Design Phase	17	54	61	33	83	0	Total Hours	248		
Rate ($/HR)	240	180	150	125	100	75	Total Sheets	10		
Phase II - Design Phase Subtotal (Lump Sum)	$ 4,080.00	$ 9,720.00	$ 9,150.00	$ 4,125.00	$ 8,300.00	$ -	**$ 35,375.00**			
	12%	27%	26%	12%	23%	0.0%				
Total Hours Phase III- Bid/Construction Phase	0	6	10	0	0	0	Total Hours			
Rate ($/HR)	240	180	150	125	100	75	Total Sheets			
Phase III - Bid/Construction Phase Subtotal (Hourly, Not-To-Exceed)	$ -	$ 1,080.00	$ 1,500.00	$ -	$ -	$ -	**$ 2,580.00**			
	0%	21%	30%	0%	0%	0.0%				

Survey - Jones and Carter

Deed Research	$ 1,500.00
Deed Plot	$ 607.00
Right-of-Entry	$ 535.00
Control	$ 923.00
Additional Topographic & Boundary Ties	$ 6,720.00
Metes & Bounds and Survey for Parcels (Additional 3 parcels)	$ 7,800.00
Additional services for preparing Drainage Easements	$ 7,800.00
Survey Subtotal (Lump Sum)	**$ 25,885.00**

Civil Design Services - BGE

Supplemental Drainage Design Services (Lump Sum)	$ 4,025.60
Supplemental Traffic Control Plan Design (Lump Sum)	$ 20,016.00
Supplemental TCP Construction Phase Services (Hourly, Not-To-Exceed)	$ 2,000.00

Benton Road - FM 762 to 300' South of Reading Road - Precinct 1 - Amendment No. 1
Level of Effort Estimate

McDonough Engineering Corportation

11/26/2018

	Proj. Man.	Engineer	Senior Designer	Sr. CADD	CADD	Clerical	Fee	Total Hours per Task	Number of sheets	Hour per Sheet
Phase II - Final Design Phase										
Project Administration	4	8					$ 2,400.00	12	N/A	N/A
Railroad Coordination							$ -	0	N/A	N/A
TxDOT Coordination	6	12	4				$ 4,200.00	22	N/A	N/A
Review Documentation and Incorporate Sheets by other consultants (Surveyor, Signal Design)	2	4	6				$ 2,100.00	12	N/A	N/A
Research Documentation for Existing Utilities within ROW	1	2	6				$ 1,500.00	9	N/A	N/A
QA/QC										
Internal QA/QC (3 submittals)	1	4	6				$ 1,860.00	11	N/A	N/A
Construction Documents										
Plans										
Cover sheet							$ -	0		
Index of Sheets							$ -	0		
General Notes							$ -	0		
Legend							$ -	0		
Survey Control Sheets							$ -	0		
Existing Typical Section		1	2		4		$ 880.00	7		
Proposed Typical Sections		1	2		6		$ 1,080.00	9	1	9.0
Storm Sewer Drainage Area Map							$ -	0		
Storm Sewer Calculations	1	2	6				$ 1,500.00	9		
Overall Drainage Area Map		2	2		4		$ 1,060.00	8		
Detention Basin							$ -	0		
Demolition Plans		2	2	6	8		$ 2,210.00	18	1	18.0
Railroad Crossing							$ -	0		
Railroad Crossing Details							$ -	0		
Plan and Profile (20 scale)	2	8	10	16	30		$ 8,420.00	66	2	33.0
Relocation Plans - Water and Sewer							$ -	0		
Details										
Concrete Pavement Details							$ -	0		
Flexible Pavement Details		1	2		2		$ 680.00	5	1	5.0
Concrete Driveway Details							$ -	0		
ADA Ramp Details							$ -	0		
Storm Sewer Construction Details							$ -	0		
Type "A" Inlet Details							$ -	0		
Modified Type "A" Inlet w/ Concrete Apron							$ -	0		
Type "B-B" Inlet Details							$ -	0		
Modified Type "B-B" Inlet Details							$ -	0		
Monolithic Type C, C-1, C-2, and C-2A Inlet Details							$ -	0		
Precast Concrete Storm Sewer Manhole Details							$ -	0		
Junction Box Manhole Detail							$ -	0		
Flexbeam Guardrail Details							$ -	0		
Type III Barricade Details							$ -	0		
Safety End Treatment for 12"-72" Dia. Pipe Culverts							$ -	0		
Traffic Control Plans										

Benton Road - FM 762 to 300' South of Reading Road - Precinct 1 - Amendment No. 1
Level of Effort Estimate

McDonough Engineering Corportation

11/26/2018

	Proj. Man.	Engineer	Senior Designer	Sr. CADD	CADD	Clerical	Fee	Total Hours per Task	Number of sheets	Hour per Sheet
Phasing Layout with General Notes							$ -	0		
Typical Construction Cross-sections							$ -	0		
Advanced Warning Signs Layouts							$ -	0		
Phase One Layouts							$ -	0		
Phase Two Layouts							$ -	0		
Temporary Traffic Signal (Benton at FM 762)							$ -	0		
Storm Water Pollution Prevention Plans			2	2	4		$ 950.00	8	1	8.0
Storm Water Pollution Prevention Plan Details							$ -	0		
Signing and Paving Marking Plans		3	3	8	16		$ 3,590.00	30	2	15.0
Pavement Marking Details		1	2		4		$ 880.00	7	1	7.0
Earthwork Table				1	3		$ 425.00	4	1	4.0
Cross Sections							$ -	0		
Construction Cost Estimate		1	2		2		$ 680.00	5	N/A	N/A
Project Manual (Bid form, specification TOC, special specs)		2	4				$ 960.00	6	N/A	N/A
Phase III - Bid/Construction Phase										
Construction Submittal Review		2	4				$ 960.00	19	N/A	N/A
RFI Responses		2	4				$ 960.00	19	N/A	N/A
Field Visits and Progress Meetings		2	2				$ 660.00	14	N/A	N/A
Total Hours Phase II - Final Design Phase	17	54	61	33	83	0	Total Hours	248		
Rate ($/HR)	240	180	150	125	100	75	Total Sheets	10		
Phase II - Design Phase Subtotal (Lump Sum)	$ 4,080.00	$ 9,720.00	$ 9,150.00	$ 4,125.00	$ 8,300.00	$ -	$ 35,375.00			
	12%	27%	26%	12%	23%	0.0%				
Total Hours Phase III- Bid/Construction Phase	0	6	10	0	0	0	Total Hours			
Rate ($/HR)	240	180	150	125	100	75	Total Sheets			
Phase III - Bid/Construction Phase Subtotal (Hourly, Not-To-Exceed)	$ -	$ 1,080.00	$ 1,500.00	$ -	$ -	$ -	$ 2,580.00			
	0%	21%	30%	0%	0%	0.0%				
Survey - Jones and Carter										
Deed Research							$ 1,500.00			
Deed Plot							$ 607.00			
Right-of-Entry							$ 535.00			
Control							$ 923.00			
Additional Topographic & Boundary Ties							$ 6,720.00			
Mates & Bounds and Survey for Parcels (Additional 3 parcels)							$ 7,800.00			
Additional services for preparing Drainage Easements							$ 7,800.00			
Survey Subtotal (Lump Sum)							$ 25,885.00			
Civil Design Services - BGE										
Supplemental Drainage Design Services (Lump Sum)							$ 4,025.60			
Supplemental Traffic Control Plan Design (Lump Sum)							$ 20,016.00			
Supplemental TCP Construction Phase Services (Hourly, Not-To-Exceed)							$ 2,000.00			

Benton Road - FM 762 to 300' South of Reading Road - Precinct 1 - Amendment No. 1
Level of Effort Estimate

McDonough Engineering Corportation

11/26/2018

	Proj. Man.	Engineer	Senior Designer	Sr. CADD	CADD	Clerical	Fee	Total Hours per Task	Number of sheets	Hour per Sheet
Civil Design Subtotal							$ 26,041.60			
Geotechnical Report - Aviles Engineering Corporation										
Supplemental Roadway							$ 745.00			
Geotechnical Report Subtotal (Lump Sum)							$ 745.00			
Traffic Signal Design Services - TranSystems										
Phase 100 - Traffic Data Collection							$ 5,040.00			
Phase 200 - Intersections Analysis							$ 16,300.00			
Phase 300 - Final Plans							$ 14,780.00			
QA/QC							$ 3,150.00			
Expenses							$ 730.00			
Traffic Signal Design Subtotal							$ 40,000.00			
Total Professional Services Budget for Amendment No. 1							$ 130,626.60			

Benton Road - FM 762 to 300' South of Reading Road - Precinct 1 - Amendment No. 1
Level of Effort Estimate

McDonough Engineering Corportation

11/26/2018

	Proj. Man.	Engineer	Senior Designer	Sr. CADD	CADD	Clerical	Fee	Total Hours per Task	Number of sheets	Hour per Sheet
Civil Design Subtotal							$ 26,041.60			
Geotechnical Report - Aviles Engineering Corporation										
Supplemental Roadway							$ 745.00			
Geotechnical Report Subtotal (Lump Sum)							$ 745.00			
Traffic Signal Design Services - TranSystems										
Phase 100 - Traffic Data Collection							$ 5,040.00			
Phase 200 - Intersections Analysis							$ 16,300.00			
Phase 300 - Final Plans							$ 14,780.00			
QA/QC							$ 3,150.00			
Expenses							$ 730.00			
Traffic Signal Design Subtotal							$ 40,000.00			
Total Professional Services Budget for Amendment No. 1							$ 130,626.60			

Exhibit "A"
Scope of Service
Benton Road (Segment 1)
Ft Bend County, TX

PROJECT UNDERSTANDING

The purpose of this study is to design plans for the traffic signalization for the intersection of FM 762 and Benton Road, and evaluate the intersection control of Reading Road and Benton Road. The design includes peak hour traffic counts, traffic signal design, Synchro analysis, and general intersection lane marking recommendations.

The project location is in Fort Bend County, TX. **Figure 1** illustrates the project location.

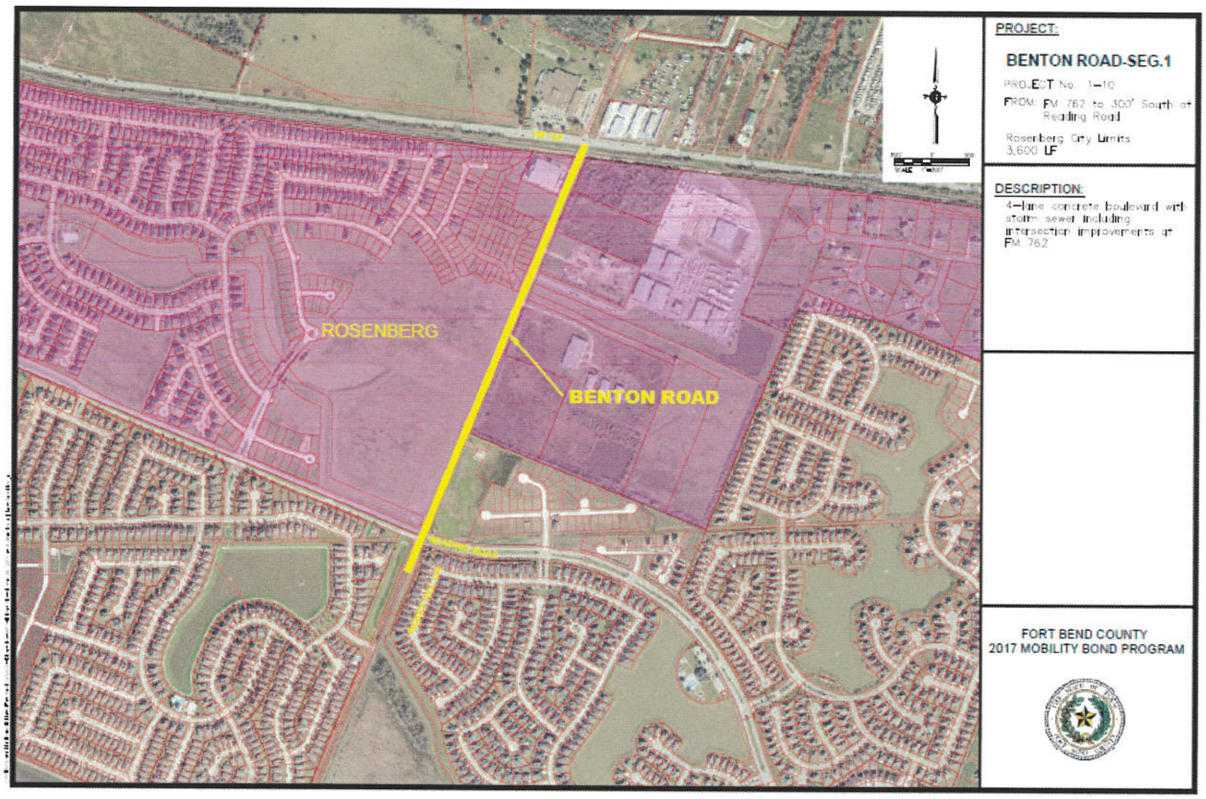

Figure 1: Project Location (Ft. Bend County, TX)

FINAL DELIVERABLES

McDonough Engineering Corporation as prime will be provided a short memo explaining a warrant analysis and proposed phasing for a signal at Reading Road and Benton Road. The memo will include results from Synchro analysis. Additionally, signed and sealed signal sheets will be completed for the intersection of Benton Road with FM762 signalization of the intersection.

PROJECT TASKS

The study will be conducted in three phases, which are listed below with a brief description for each phase.

Phase 100 – Traffic Data Collection	Data Collection, Survey & Initial Analysis
Phase 200 – Intersection Analysis	Traffic Signal Warrant Analyses, timings and Synchro
Phase 300 – Final Plans	Prepare Final Plans and coordinate power drop

PHASE 100 – Traffic Data Collection

101. 24-Hour traffic volumes will be collected by machine on each approach leg of the intersections of FM762 and Benton Road and Benton Road and Reading Road.

102. Manual Traffic Counts – Will be conducted at both intersection of Benton Road/FM762 and Benton/Reading Road. These will be conducted during typical peak hours (7-9 am and 4-6 pm) and summarized for study and design purposes.

103. Traffic count information will be summarized in tabular and graphical formats and included in the final memo. The data will be reviewed, and a Quality Assurance/Quality Control will be performed on the data by a licensed professional engineer (PE) in addition to a professional traffic operations engineer (PTOE).

PHASE 200 – Intersection Analysis

201. Base Synchro files: TranSystems will create a Synchro file with the existing geometric data, lane usage, phasing and basic signal timing.

202. Pre-emption Review: McDonough Engineering (through Ft. Bend County) will provide the existing signal control timing, including railroad pre-emption timings to TranSystems. TranSystems will use the latest TxDOT form to evaluate whether additional pre-emption time should be requested from the railroad. If changes to the intersection of FM 762 and Benton Road are planned, a pre-signal may be warranted.

203. Signal Timing Optimization: TranSystems evaluate the proposed signal utilizing the Synchro software for peak periods. It should be noted that this task does not take into account the development of a detailed micro-simulation model beyond SimTraffic's default characteristic model. Should it be deemed necessary to develop a detailed model (VISSIM, etc.), a separate agreement would be required. This would be completed using proposed future counts provided by others.

204. Using Synchro traffic analysis software, conduct capacity analyses for the study intersection and identify necessary improvements to maintain acceptable intersection operations at the study intersection for the existing conditions and one future scenario if appropriate growth factor is obtained from the County or Others.

205. Evaluate Left Turn Phasing: TranSystems will evaluate protected, protected-permitted, permitted, lead-lag, Flashing Yellow Arrow use, etc. that may be beneficial to the signal timing.

206. Clearance Intervals: Yellow and Red intervals will be evaluated for accuracy and sufficiency using NCHRP 731 recommended procedures.

207. Pedestrian Timings: Pedestrian timings are to be evaluated based on current MUTCD requirements, and if pedestrian facilities are planned for Benton Road.

208. Memo: Prepare a brief signed and sealed memo for McDonough Engineering's review that summarizes the traffic count data, explains the warrant analysis procedure, and presents the recommendations. This memo will include proposed Synchro reports and count summaries for both intersections. It is assumed the existing intersection at FM 762 is warranted and the memo will mainly focus on existing and future needs as well as railroad pre-emption requirements.

209. Review Geometric needs; a review of beneficial geometric changes that may help other signalization changes will completed.

PHASE 300 Final Plans

301. Plans Preparation- 70%, 95% and 100% (Final) reviews are planned for the signal at FM 762. Final plans are assumed to include the following items:

1) General Notes
2) Signal Plan Sheets
3) Miscellaneous Details
4) Summary of Quantities
5) Traffic Control/Construction Phasing (for signal only; the overall traffic control developed by others will be used to the extent possible)
6) Coordination with the local power company to provide a power drop at the intersection will be done.
7) Known utility conflicts based on information provided to TranSystems will be provided to McDonough Engineering for their use in coordination with existing utility companies to relocate prior to letting.
8) Opinions of probable construction cost for the signal work and bid items.

Proposal Conditions

The following is a list of conditions that were the basis for this proposal:

- Signal at FM 762 will be designed using TxDOT standards, specifications and bid items to the extent feasible.
- Coordination in the memo stage will mainly be to focus on the needs of the signalization plans and if a signal is needed at Reading/Benton intersection.
- Reading/Benton Road intersection signalization plans are not included as part of the project, but can be supplemented if warranted.

- Traffic signal is to operate as an isolated signal with no interconnection anticipated between adjacent traffic signals.
- It is assumed the signal will be part of a larger set of plans that will include items such erosion control, maintenance of traffic guidelines, etc. Traffic titleblock and page numbering will be provided by others. No temporary signal plans are anticipated as part of the project.
- Existing topographic survey and DTM to assist with the design is to be provided to TranSystems. Included within the topographic files are the approximate location of existing utilities.
- Traffic data collection is anticipated to occur while local schools/colleges are in session.
- Two in person design reviews are assumed. Mileage is assumed from the TranSystems Houston office for reviews and traffic counts.
- No interconnection design is assumed as part of the project.
- No geological investigations are included in this proposal, but will be provided by others.
- No aesthetics including special lighting, graphics, form liner, artwork or landscaping are including in the plans.
- Bidding and construction management or testing services are not included in this proposal. These services can be provided by TranSystems via a supplemental agreement.
- No permitting is included in this contract.
- Others will prepare the base specifications, contract documents, and perform the bidding services.
- Shop drawing reviews would be considered construction phase services and will be part of the construction services agreement.
- The scope of work does not include waters of the U.S. mitigation (likely not required).
- It is assumed that others will be providing the following if necessary:
    - Threatened and endangered species surveys and habitat studies.
    - Cultural resource/archaeological surveys.
- Floodplain development permit or FEMA flood map revisions are not included in this contract.
- Preparation of other bid documents and assistance in the bid and construction process are not included in this scope of services, but are services that TranSystems can provide.
- Microstation V8i or later will be used for CAD file creation to prepare the plans noted herein, however these files will be converted to DWG for inclusion in McDonough Engineering's larger plan set;
- No Landscaping has been included as part of the project.
- No public meeting or council meetings have been included as part of the project.
- Temporary signal plans for construction are not included as part of this submittal.
- Although the existing signal does not require a railroad pre-signal per MUTCD and current geometry, if a "pre-signal" is warranted or desired (if the signal is within 50' of nearest rail to nearest lane) additional coordination and design time may be necessary.
- Pre-emption times will be calculated to the latest version of the TxDOT forms. It will be the responsibility of others to coordinate pre-emption time with the railroad and TxDOT.

It is anticipated that the others will provide the following:

- Proposed Design Plans and existing survey including future and proposed right of way (*.dgn or *.dwg format)
- Future traffic volumes or growth factor to be provided by Fort Bend County
- Crash data within 500 feet of either the intersection for the last 3 years to be provided by Fort

Bend County

- Existing high resolution aerials
- Details on controller and other pertinent design standards that the County desires to be included to be consistent with their other traffic signals.

Design Fee

The above services will be provided at a lump sum basis in the following amount:

Labor								
	Slade E	Tom M.	Tonya L.	Chad B	EI	T2	Total	Dollars
Task	$ 210.00	$ 450.00	$ 180.00	$ 160.00	$ 110.00	$ 100.00		
Phase 100 - Traffic Data Collection	8				16	16	40	$ 5,040.00
Phase 200 - Intersections Analysis	40	2	15	20	10		87	$ 16,300.00
Phase 300 - Final Plans	30	2	15	20	8	8	83	$ 14,780.00
QA\QC	3	4	4				11	$ 3,150.00
							Labor Subtotal	**$39,270.00**
Expenses								
						Mileage	380	$ 380.00
						Misc. and Reproduction Expenses	350	$ 350.00
							Expense Subtotal	**$ 730.00**
							Project Total =	**$40,000.00**

August 21, 2018

Javier Casas, P.E.
McDonough Engineering Corp.
5625 Schumacher
Houston, TX 77057

RE: Benton Rd Segment I – Drainage Design and Traffic Control Plan Design Services – Supplemental Services for the FM 762 Intersection Reconstruction

Dear Javier:

This constitutes our proposal to provide supplemental professional engineering services for the drainage impact study, the drainage detention mitigation design, the traffic control plan design, and construction phase services for the Benton Road Segment I project in Fort Bend County.

The Benton Road project will now include building out the boulevard section for Williams Way at its intersection with FM 762, just North of Benton Road. Additionally, the FM 762 intersection with Benton Road will be superelevated to provide a continuous slope from the railroad crossing on Benton, through the intersection, to Williams Way Blvd to the North. This will require reconstruction of a length of the South side of FM 762 both East and West of the intersection for the superelevation transition lengths. Our proposed supplemental scope of services and fee are described below.

<u>Scope of Services</u>

BGE will include provisions for the superelevation of FM 762 through the intersection of Benton Road and its connection with Williams Way in the drainage impact study, the drainage detention mitigation design, the traffic control plan design, and the construction phase services for the Benton Road Segment I project in Fort Bend County.

BGE will update the DIS prepared for the Benton Road widening to include re-grading of the Benton Road/Williams Way intersection at FM 762. BGE will evaluate existing and proposed drainage patterns at the intersection to determine impacts to the proposed Williams Way storm drain system. Mitigation alternatives will be developed if impacts cause the proposed Williams Way storm drain capacity to be exceeded for the 2-year design storm.

BGE will prepare a traffic control plan to superelevate FM 762 through its intersection with Benton Road, which will require to reconstruct FM 762 to approximately 200 feet in each direction from the intersection, as well as completing the boulevard connection to Williams Way to the north of the intersection.

BGE, Inc. · 10777 Westheimer Road, Suite 400 · Houston, Texas 77042 · 281-558-8700 · www.bgeinc.com

Supplemental Fee

Our proposed fee is as follows:

1. Supplemental Drainage Design Services:	Lump-Sum	$4,000
2. Supplemental Traffic Control Plan Design	Lump-Sum	20,000
4. Supplemental TCP Construction Phase Services	Hourly NTE	2,000
Total Fee		$26,000

Please find attached our Professional Service Agreement with Attachment A, Standard Terms and Conditions for your review and execution. We will invoice monthly based upon our estimated percent completion of the lump-sum services, and actual hours based on the rates for the hourly not-to-exceed (NTE) amounts, per Attachment B, BGE Fee Estimate.

If you have any questions, please feel free to contact me or Megan Siercks at 281-558-8700.

Sincerely,

I.F. Joskowicz, PhD, PE, PTOE

Isaac F. Joskowicz, PhD, PE, PTOE
Senior Project Manager

Attachments:
BGE Professional Service Agreement
Attachment A: Standard Terms and Conditions
Attachment B: BGE Fee Estimate for Drainage Detention Design and Traffic Control Plan – Supplemental Services for the FM 762 Intersection Reconstruction

Attachment B

BGE Fee Estimate for Drainage Detention Design and Traffic Control Plan - Supplemental Services for the FM 762 Intersection Reconstruction

Project Name: Benton Road, FM 762 to Reading Rd, Fort Bend County

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR CADD OPERATOR	CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
DRAINAGE DETENTION DESIGN											
DRAINAGE IMPACT STUDY (IMPERVIOUS COVER MITIGATION-NO DEVELOPMENT)			8		18				0		
EXISTING CONDITIONS HYDROLOGY (CALCULATIONS AND DRAINAGE AREAS)									0		
PROPOSED CONDITIONS HYDROLOGY (CALCULATIONS AND DRAINAGE AREAS)									0		
IMPERVIOUS COVER MITIGATION									0		
DRAFT LETTER REPORT									0		
ADDRESS DRAFT LETTER REPORT COMMENTS/FINAL DRAINAGE LETTER REPORT									0		
LETTER REPORT EXHIBITS									0		
DRAINAGE COORDINATION MEETINGS									0		
DETENTION FACILITY LOCATION ALTERNATIVES									0		
DETENTION FACILITY LAYOUT	1		2		4				7		
DETENTION FACILITY CROSS SECTIONS									0		
DETENTION FACILITY DETAILS									0		
DETENTION FACILITY QUANTITIES AND COST ESTIMATE									0		
CONSTRUCTION PHASE SERVICES									0		
HOURS SUB-TOTALS	1	0	10	0	22	0	0	0	33		
CONTRACT RATE PER HOUR	$192.00	$160.00	$144.00	$128.00	$108.80	$102.40	$80.00	$73.60			
TOTAL LABOR COSTS	$192.00	$0.00	$1,440.00	$0.00	$2,393.60	$0.00	$0.00	$0.00	$4,025.60		
SUBTOTAL DRAINAGE DETENTION DESIGN									$4,025.60		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR CADD OPERATOR	CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
TRAFFIC CONTROL PLAN											
TCP PHASING LAYOUTS	0.5			2	8				10.5	1	11
TYPICAL SECTIONS	0.5			2	8				10.5	1	11
ADVANCE WARNING SIGNS LAYOUTS	0.5			2	8				10.5		
TRAFFIC CONTROL CONSTRUCTION SEQUENCING NARRATIVE	0.5			2	4				6.5		
PHASE ONE LAYOUTS	4	2		8	42				56	4	14
PHASE TWO LAYOUTS	4	2		8	42				56	4	14
TEMPORARY PAVEMENT									0		
TEMPORARY TRAFFIC SIGNAL (BENTON RD AT FM 762)									0		
TCP DETAILS	0.5			2	5				7.5		
QUANTITY & COST ESTIMATE	0.5			3	5				8.5		
CONSTRUCTION PHASE SERVICES	2			8	8				18		
HOURS SUB-TOTALS	13	4	0	37	130	0	0	0	184		
CONTRACT RATE PER HOUR	$192.00	$160.00	$144.00	$128.00	$108.80	$102.40	$80.00	$73.60			
TOTAL LABOR COSTS	$2,496.00	$640.00	$0.00	$4,736.00	$14,144.00	$0.00	$0.00	$0.00	$22,016.00		
SUBTOTAL TRAFFIC CONTROL PLAN									$22,016.00		

OTHER DIRECT EXPENSES	UNIT	QUANTITY	COST/UNIT	TOTAL EXPENSES
MILEAGE	MILE	0	$0.535	$0.00
PHOTOCOPIES B/W (11" X 17")	EACH	0	$0.20	$0.00
Overnight Mail - oversized box	EACH	0	$30.00	$0.00
SUBTOTAL DIRECT EXPENSES				$0.00

SUMMARY	
TOTAL LABOR COSTS	$26,041.60
NON-SALARY (OTHER DIRECT EXPENSES)	$0.00
GRAND TOTAL	$26,041.60

JONES | CARTER

6330 West Loop South, Suite 150
Bellaire, Texas 77401
Tel: 713.777.5337
Fax: 713.777.5976
www.jonescarter.com

November 26, 2018

Mr. Javier Casas, P.E.
Senior Project Manager
McDonough Engineering Corp.
5625 Schumacher
Houston, TX 77057
javierC@mectx.com

Re: Benton Road – Williams Way Additional Services

Dear Mr. Casas,

Thank you for considering this proposal for Surveying Services on the above referenced project. Our understanding is McDonough Engineering Corp. (MEC) has been contacted by Fort Bend County as part of the 2017 Mobility Bond Program to provide engineering services for the Williams Way / F. M. Hwy 762 intersection. We also understand Jones & Carter, Inc. (JCI) will contract with MEC to provide surveying services. It is also our understanding that no additional widening of Williams Way will be required. There will also be a need for exhibits and metes and bounds descriptions for various drainage easements to be determined during the design of the project. Based on our project understanding we have prepared the following scope of services and fee proposal for your consideration.

Deed Research:

- Research Ownership, Subdivision Plats & existing easement documentation, County right of way.
- Establish the existing rights-of-way of Williams Way and F. M. Hwy 762.
- Acquire ownership names, deed and easement recording data.
- An Abstractor will be hired to prepare the research at a lump sum fee.

Deed Plot:

- Deed lines and easement lines will be plotted to identify ownerships, right of entry requirements, existing right of way widths and called for boundary monumentation.

Right of entry:

- We will prepare right of entry letters to be sent to the land owners by registered mail.

Project Control:

- Horizontal control will be established on site based upon GPS observations.
- Horizontal control will be based upon the Texas Coordinate System of 1983, South Central Zone.
- Vertical data will be based upon the North American Vertical Datum of 1988 utilizing available NGS bench marks.

Topographic Survey:

- Topographic data will be acquired at +/- 100' grid intervals including all grade breaks and major changes up to 600' north of F. M. Hwy 762 and up to 300' south of previous project limits south of Reading Road.
- We will contact Texas ONECALL to have utilities located and marked.
- We will locate all visible utilities.
- We will measure all manhole and inlet inverts within the project limits.

Proposed Right-of-Way Maps and Parcels:

- Prepare Right-of-Way Map and Topographic map for the project.
- Drawings will be prepared to the TSPS Standards and Specifications for a Category 1A Condition II Survey.
- Right-of-way map and topographic map will be prepared at a scale of 1"= 20'.
- Exhibits for Drainage Easements will be prepared at a scale of 1"=20'.
- Metes and bounds descriptions will be prepared for each Drainage Easement.

Deliverables:

- We will provide a 2D – DWG file for planimetric, at a 1"=20' on 22"x34" sheets, 3-D TIN file of the grade break lines, and an ASCII file of points used for creating the model. Plots of the triangles and 0.2 foot contours for QA/QC checks will be provided upon request.
- PDF files of the existing Right-of-Way maps and Topographic surveys will be provided.

These services can be completed for a Lump Sum fee of $25,885.00. **Note**: included within this fee is a lump sum amount of $7,800 for the survey and metes and bounds for an additional three (3) parcels for the widening of Benton Road. A Level of Effort worksheet is attached. The existing Right-of-Way Map can be completed within thirty (30) days upon receipt of your written authorization to proceed. The Topographic Survey can be completed within forty-five (45) days upon receipt of your written authorization to proceed.

Again Mr. Casas, thank you for considering this proposal. If these terms are agreeable, please indicate by signing in the space provided below. We look forward to working with you on this project.

Sincerely,

Chris D. Kalkomey
Registered Professional Land Surveyor
No. 5869

CDK/mon
E:\Surveying\proposals\MDE Engineering estimate_Benton Road-Williams Way- Revised.docx
Enclosure

APPROVED BY:
Lump Sum fee of $25,885.00

____
Signature of Authorization

____
Print Name and Title

____
Date

Jones and Carter, Inc.

11/26/18

Level of Effort for Benton Road Project - Williams Way additional services

Design Phase Surveying Services

Task:	General Description:	2-Man Field Crew	3-Man Field Crew	Survey Tech 2	Project Surveyor 4	RPLS	CAD Operator 5	Admin IV	Lump Sum Fee	Total Hours	Total Cost
	Service Description: / Hourly Rates:	$160.00	$195.00	$75.00	$108.00	$175.00	$87.00	$90.00			
Deed Research	Research deeds & easements of adjoiners, roadways, County right of way								$1,500.00	N/A	$1,500.00
Deed Plot	Plot deeds, easements and exisiting rights-of-way				4	1				5	$607.00
Right-of-Entry	Letters to land owners per tax rolls					1		4		5	$535.00
Control	Establish control based on Texas Coordinate System of 1983, South Central Zone	4			1	1				6	$923.00
Addditional Topographic Survey & Boundary Ties	Gather field data Provide plan view in DWG format at 1"=20' scale Provide DTM	20			10	4	20			54	$6,720.00
Metes & Bounds and survey for parcels	Additional 3 parcels at $2,600.00 per parcel								$7,800.00	N/A	$7,800.00
Metes & Bounds and exhibits for easements	Additional services for separate Drainage Easements								$7,800.00	N/A	$7,800.00
	Total Hours:	24			15	7	20	4		62	
	Total Cost:	$3,840.00			$1,620.00	$1,225.00	$1,740.00	$360.00	$17,100.00		$25,885.00

AVILES

ENGINEERING CORP.

August 7, 2018

Mr. Connor McBride, P.E.
McDonough Engineering Corporation
5625 Schumacher Lane
Houston, Texas 77057

Re: Additional Engineering Scope
Recommendations for Improvements of FM 762 at Benton Road
Fort Bend County, Texas
AEC Project No. G134-18
AEC Proposal No. G2018-09-01

Dear Mr. McBride,

Aviles Engineering Corporation (AEC) is pleased to present this proposal for additional geotechnical engineering recommendations for the Improvements of Benton Road project in Fort Bend County. Based on information provided by McDonough Engineering Corporation (MEC), AEC understands that additional improvements are planned for FM 762 at the intersection of Benton Road, which include: (i) addition of superelevation to the south side of FM 762 on either side of Benton Road to accommodate the existing railroad crossing at Benton Road; and (ii) building out the intersection as it connects to Williams Way Boulevard on the north side of the FM 762 and Benton Road intersection. AEC will provide additional geotechnical engineering recommendations for the superelevation and intersection buildout as necessary and include them in AEC Geotechnical Report G134-18, which is ongoing for the project. Based on discussions with MEC, AEC understands that no additional soil borings will be performed at the intersection, and AEC will base its recommendations on the soil boring information from Boring B-9.

The lump sum fee for our services is **$745.00** (i.e. 5 hours of Project Engineer effort at $149.00 per hour). If any of the project details described in this proposal are incorrect or the scope described or the assumptions listed need to be revised, please inform us immediately so we can revise the proposal as necessary.

We appreciate the opportunity to present this proposal.

AVILES ENGINEERING CORPORATION
(TBPE Firm Registration No. 42)

Wilber L. Wang, P.E.
Senior Engineer

Attachments: Terms and Conditions

AGREED TO THIS _______ DAY OF ___________________, _______________________
BY (Signature): ______________________________
PRINT NAME: ______________________________
TITLE: ______________________________
FIRM: ______________________________