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 Dannenbaum Engineering Corporation, (hereinafter "Engineer"), a company authorized to conduct business in the State of Texas.

WITNESSETH

WHEREAS, County desires that Engineer provide professional engineering services for the construction of a new Grand Parkway (SH 99) southbound frontage road from north of South Fry Road to FM 1093 for the Grand Parkway (SH 99) Frontage Road – Segment 2 Project, Number 17304, under the 2017 Mobility Bond Program (hereinafter "Services") pursuant to SOQ 14-025; and

WHEREAS, County has determined Engineer is the most highly qualified provider of the desired Services on the basis of demonstrated competence and qualifications, and County and Engineer 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, Engineer 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

Engineer shall render the professional engineering services, including the field surveys, geotechnical investigations, environmental documentation, right-of-way mapping, schematics, drainage studies and final plans, specifications and estimates for the project as described Engineer's proposal dated May 16, 2018 attached hereto as Exhibit A, and incorporated herein for all purposes.

Section 2. Personnel

2.1 Engineer 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 Engineer 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 Engineer shall have such knowledge and experience as will enable them to perform the duties assigned to them. Any employee of Engineer 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 Engineer'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 five hundred seventy-two thousand nine hundred sixty-three dollars and 80/100 ($1,572,963.80) 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 Engineer 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 Engineer based on the following procedures: Upon completion of the tasks identified in the Scope of Services, Engineer 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 Engineer 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 five hundred seventy-two thousand nine hundred sixty-three dollars and 80/100 ($1,572,963.80) specifically allocated to fully discharge any and all liabilities County may incur.

4.2 Engineer does further understand and agree, said understanding and agreement also being of the absolute essence of this Agreement, that the total maximum compensation that Engineer may become entitled to and the total maximum sum that County may become liable to pay to Engineer shall not under any conditions, circumstances, or interpretations thereof exceed one million five hundred seventy-two thousand nine hundred sixty-three dollars and 80/100 ($1,572,963.80).

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. Engineer 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 Engineer 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 Engineer 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 Engineer 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 Engineer 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. Engineer'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 Engineer.

Section 8. Ownership and Reuse of Documents

All documents, data, reports, research, graphic presentation materials, etc., developed by Engineer 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. Engineer shall promptly furnish all such data and material to County on request.

Section 9. Inspection of Books and Records

Engineer will permit County, or any duly authorized agent of County, to inspect and examine the books and records of Engineer 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, Engineer 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. Engineer shall provide certified copies of insurance endorsements and/or policies if requested by County. Engineer 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. Engineer 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 Engineer 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, Engineer 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

ENGINEER 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 ENGINEER'S LIABILITY, ARISING FROM ACTIVITES OF ENGINEER, ITS AGENTS, SERVANTS OR EMPLOYEES, PERFORMED UNDER THIS AGREEMENT THAT RESULT FROM THE NEGLIGENT ACT, INTENTIONAL TORT, ERROR, OR OMISSION OF ENGINEER OR ANY OF ENGINEER'S AGENTS, SERVANTS OR EMPLOYEES.

Section 12. Confidential and Proprietary Information

12.1 Engineer 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 Engineer 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 Engineer 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 Engineer) publicly known or is contained in a publicly available document; (b) is rightfully in Engineer'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 Engineer who can be shown to have had no access to the Confidential Information.

12.2 Engineer agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Engineer 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. Engineer 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, Engineer shall advise County immediately in the event Engineer 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 Engineer will at its expense cooperate with County in seeking injunctive or other equitable relief in the name of County or Engineer against any such person. Engineer agrees that, except as directed by County, Engineer 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, Engineer will promptly turn over to County all documents, papers, and other matter in Engineer's possession which embody Confidential Information.

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

12.5 Engineer 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, Engineer 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 Engineer or, where permitted, of its subcontractors.

13.2 Engineer 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, 1st Floor Richmond, Texas 77469
Engineer:	Dannenbaum Engineering Corporation Attn: Michael J. Kaspar, Project Manager 3100 West Alabama Houston, Texas 77098-2094

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

Engineer 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, Engineer shall furnish County with

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

Section 16. Standard of Care

Engineer 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, Engineer 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 Engineer 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 Engineer 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, Engineer verifies Engineer 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, Engineer represents pursuant to Section 2252.152 of the Texas Government Code, that Engineer 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

Robert E. Hebert, County Judge

Date

DANNENBAUM ENGINEERING CORPORATION

Wayne G. Ahrens, Executive Vice President

5/23/2018
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

I:\Marcus\Grand Parkway (SH 99)\Segment 2 - 17304\Agreement - Pro Eng Svcs.GP Seg 2.DEC.v3.docx.5/23/2018

EXHIBIT A

DANNENBAUM ENGINEERING CORPORATION
3100 WEST ALABAMA HOUSTON, TEXAS 77098 PO BOX 22292 HOUSTON, TEXAS 77227 (713) 520-9570

ENGINEERING EXCELLENCE SINCE 1945

May 16, 2018

Mr. Richard W. Stolleis, P .E.
Fort Bend County Engineer
301 Jackson Street, 4th Floor
Richmond, Texas 77469

Reference: SH 99 Grand Parkway Southbound Frontage Road Projects

Dear Richard:

We are pleased to submit for your approval the scope and fee proposal for the SH 99 Grand Parkway Southbound Frontage Road Projects. This proposal addresses Fort Bend County's plan to design and construct two new southbound frontage roads: Project 1, from Cinco Ranch Boulevard to Westheimer Parkway; and Project 2, from north of Fry Road to FM 1093.

The design effort will include Field Surveys, Geotechnical Investigations, Environmental documentation, Right-of-Way (ROW) Mapping, Schematics, Drainage Studies, and Final Plans, Specifications, and Estimates (PS&E). Dannenbaum will serve as the County's lead General Engineering Consultant and Project 2 Design Lead.

Attached you will find our Fee Proposal (Attachment A), Scope of Services (Attachment B), and Schedule of Milestone Submittals (Attachment C) for the subject Projects.

If you have any questions or need additional information, please contact me at (713) 527-6374.

Respectfully,

Michael J. Kaspar, P.E.
Project Manager

Attachments

ATTACHMENT A

SH99 Grand Parkway Southbound Frontage Road May 2018

WORK ELEMENT	Engineering Fees 05/15/2018
Advanced Planning/Preliminary Engineering	
Schematic Design (Dannenbaum)	$ 155,487.36
Environmental/NEPA (SWCA)	$ 147,000.00
Traffic Studies (TEDSI)	$ 13,016.64
Drainage Impact Report (Sirrus)	$ 73,020.00
Management (Dannenbaum)	$ 168,284.93
Final PS&E Engineering	
Roadway Design (Dannenbaum)	$ 117,898.37
Drainage Design (Sirrus)	$ 93,415.00
SW3P (Dannenbaum)	$ 24,018.62
Traffic - Signals (TEDSI)	$ 33,328.99
Traffic - Signing & Pvmt Marking (Dannenbaum)	$ 43,524.10
Misc & TCP (Dannenbaum)	$ 149,212.22
Management (Dannenbaum)	$ 214,838.40
Extras	
Survey (Weisser)	$ 92,460.00
ROW Parcel Mapping[1] (Weisser)	$ 15,000.00
Geotechnical (Aviles)	$ 63,121.46
Utility Coordination (Dannenbaum)	$ 91,808.64
Direct Expenses	$ 15,025.00
Bid/Construction Phase Services	
Post Design Services (Dannenbaum)	$ 62,504.06
Total Management & Engineering Fees	$ 1,572,963.80

Notes

1. ROW Mapping assumes parcel surveying of ten (10) parcels.

ATTACHMENT A - PART 1
FEE SCHEDULE (Dannenbaum)
METHOD OF PAYMENT: LUMP SUM

PRIME PROVIDER NAME: Dannenbaum
CONTRACT NUMBER:
PROJECT NAME: SH99 Grand Parkway Southbound Frontage Road
PROJECT LIMITS: Segment 2 - North of Fry Road to FM 1093

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROUTE & DESIGN STUDIES (FC 110)										
DATA COLLECTION	1	8	16			8		33	N/A	N/A
DEVELOP BASE MAPS	1	4	8			20		33	N/A	N/A
ANALYZE EXISTING CONDITIONS	2	4	16	8		8		38	N/A	N/A
DESIGN CONCEPT CONFERENCE (FORM & MTG)	2	4	12	8		8		34	N/A	N/A
CONCEPTUAL DESIGN SCHEMATICS	4	8	20	60		80		172	N/A	N/A
GEOMETRIC DESIGN SCHEMATICS	4	8	20	60		80		172	N/A	N/A
TYPICAL SECTIONS	2		8	16		24		50	N/A	N/A
ENVIRONMENTAL CONSTRAINTS	4	8	16	8		16		52	N/A	N/A
ROW REQUIREMENTS	1	4	8			20		33	N/A	N/A
TRAFFIC DATA COLLECTION (REVIEW DATA PROVIDED BY OTHERS)	1		4					5	N/A	N/A
BICYCLE AND PEDESTRIAN ACCOMODATIONS	1	4	8	16		16		45	N/A	N/A
CROSS SECTIONS	1	4	8	40		60		113	N/A	N/A
PRELIMINARY CONSTRUCTION SEQUENCE	2	4	12	16		16		50	N/A	N/A
PRELIMINARY CONSTRUCTION COST ESTIMATE	2	4	8	16		12		42	N/A	N/A
									N/A	N/A
									N/A	N/A
									N/A	N/A
HOURS SUB-TOTALS	28	64	164	248	0	368	0	872		
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$6,924.29	$12,859.39	$27,882.62	$38,330.88	$0.00	$39,814.66	$0.00	$125,811.84		
SUBTOTAL (FC 110)								**$125,811.84**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ENVIRONMENTAL STUDIES & PUBLIC INVOLVEMENT (FC 120)										
									N/A	N/A
PROVIDE EXHIBITS AND DATA FOR ENVIRONMENTAL STUDY	8	16	40	40		60	8	172	N/A	N/A
									N/A	N/A
									N/A	N/A
									N/A	N/A
HOURS SUB-TOTALS	8	16	40	40	0	60	8	172		
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$1,978.37	$3,214.85	$6,800.64	$6,182.40	$0.00	$6,491.52	$741.89	$25,409.66		
SUBTOTAL (FC120)								**$25,409.66**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
RIGHT OF WAY DATA (FC 130)										
ROW DELINEATION (REVIEW SURVEY PROVIDED BY OTHERS)	2	4	8			16		30	N/A	N/A
									N/A	N/A
UTILITY ADJUSTMENT COORDINATION (8 ENTITIES & 20 MTGS)	8	40	40			32		120	N/A	N/A
REVIEW OF UTILITY AGREEMENTS (8 UTILITIES)	8	40	40			0		88	N/A	N/A
REVIEW OF PROPOSED UTILITY ADJUSTMENTS (8 UTILITIES)		40	60			32		132	N/A	N/A
PROPOSED UTILITY LAYOUT	4	16	80			100		200	8	25
HOURS SUB-TOTALS	22	140	228	0	0	180	0	570		
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$5,440.51	$28,129.92	$38,763.65	$0.00	$0.00	$19,474.56	$0.00	$91,808.64		
SUBTOTAL (FC130)								**$91,808.64**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
PROJECT MANAGEMENT (FC 145) - SEGMENT 1 & 2										
COORDINATION W/ SUBCONSULTANTS	64		160			0	16	240	N/A	N/A
COORDINATION WITH COUNTY AND TXDOT	64		320			0	16	400	N/A	N/A
COORDINATION WITH DEVELOPERS	12		24			0	24	60	N/A	N/A
PROGRESS MEETINGS (6 ESTIMATED)	24		48			0	24	96	N/A	N/A
PROJECT SCHEDULE AND COST ESTIMATE UPDATES	32		64			0	16	112	N/A	N/A
PREPARE INVOICES W/ PROGRESS REPORTS	8		16			0	16	40	N/A	N/A
									N/A	N/A
HOURS SUB-TOTALS	204	0	632	0	0	0	112	948		
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$50,448.38	$0.00	$107,450.11	$0.00	$0.00	$0.00	$10,386.43	$168,284.93		
SUBTOTAL (FC150)								**$168,284.93**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
SURVEYING (FC 150)										
SURVEYING (REVIEW SURVEY PROVIDED BY OTHERS)	2		12			16		30	N/A	N/A
									N/A	N/A
HOURS SUB-TOTALS	2	0	12	0	0	16	0	30		
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$494.59	$0.00	$2,040.19	$0.00	$0.00	$1,731.07	$0.00	$4,265.86		
SUBTOTAL (FC150)								**$4,265.86**		

DESCRIPTION							TOTAL MH BY FC	TOTAL COSTS BY FC
ROUTE & DESIGN STUDIES (FC 110)							872	$125,811.84
ENVIRONMENTAL STUDIES & PUBLIC INVOLVEMENT (FC 120)							172	$25,409.66
RIGHT OF WAY DATA (FC 130)							570	$91,808.64
PROJECT MANAGEMENT (FC 145) - SEGMENT 1 & 2							948	$168,284.93
SURVEYING (FC 150)							30	$4,265.86
SUBTOTAL LABOR EXPENSES							2592	**$415,580.93**
OTHER DIRECT EXPENSES	**QUANTITY**	**RATE**	**UNIT**					
Mileage (# of miles) (0.550)	1,500	$0.550	MI					$825.00
Courier Services	30	$30.00	EACH					$900.00
Photocopies 8.5x11	2,500	$0.10	EACH					$250.00
Photocopies 11x17	2,500	$0.25	EACH					$625.00
Plot (Color on Bond)	1,000	$3.50	SF					$3,500.00
Mylars 11x17	0	$4.00	SHEET					$0.00
CD Archive	10	$5.00	EACH					$50.00
SUBTOTAL DIRECT EXPENSES								**$6,150.00**

SUMMARY	
TOTAL COSTS FOR PRIME ONLY(includes multiplier)	$415,580.93
NON-SALARY (OTHER DIRECT EXPENSES)	$6,150.00
SUBCONTRACTS (includes labor costs and direct expenses)	$0.00
GRAND TOTAL	**$421,730.93**

ATTACHMENT A - PART 2
FEE SCHEDULE (Dannenbaum)
METHOD OF PAYMENT: LUMP SUM

PRIME PROVIDER NAME: Dannenbaum
CONTRACT NUMBER:
PROJECT NAME: SH99 Grand Parkway Southbound Frontage Road
PROJECT LIMITS: Segment 2 - North of Fry Road to FM 1093

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
PROJECT MANAGEMENT (FC 145) - SEGMENT 1 & 2										
COORDINATION W/ SUBCONSULTANTS	80		200			0	20	300	N/A	N/A
COORDINATION WITH COUNTY AND TXDOT	80		400			0	20	500	N/A	N/A
COORDINATION WITH DEVELOPERS	12		24			0	24	60	N/A	N/A
PROGRESS MEETINGS (10 ESTIMATED)	40		80			0	40	160	N/A	N/A
PROJECT SCHEDULE AND COST ESTIMATE UPDATES	40		80			0	20	140	N/A	N/A
PREPARE INVOICES W/ PROGRESS REPORTS	10		20			0	20	50	N/A	N/A
									N/A	N/A
HOURS SUB-TOTALS	262	0	804	0	0	0	144	1210		
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$64,791.55	$0.00	$136,692.86	$0.00	$0.00	$0.00	$13,353.98	$214,838.40		
SUBTOTAL (FC150)								**$214,838.40**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN CONTROLS (FC160)										
								0		
HORIZONTAL ALIGNMENT DATA SHEETS		2	4	12		30		48	2	24.0
EXISTING TYPICAL SECTIONS								0		
PROPOSED TYPICAL SECTIONS		2	4	8		40		54	2	27.0
ROADWAY PLAN AND PROFILE (SCALE: H 1"=100' V 1"=10')		16	40	60		120		236	8	29.5
CROSS STREET ROADWAY PLAN AND PROFILE (SCALE: H 1"=100' V 1"=10)		4	4	8		16		32	1	32.0
INTERSECTION LAYOUTS		4	4	8		16		32	1	32.0
DRIVEWAY DETAIL AND SUMMARY		2	4	8		16		30	1	30.0
MISCELLANEOUS ROADWAY DETAILS		4	8	8		20		40	2	20.0
REMOVAL PLANS (SCALE 1"=100') (Double Banked)		4	16	20		60		100	4	25.0
EARTHWORK CROSS SECTIONS		8	24	40		100		172	18	9.6
ROADWAY STANDARDS		2	8			40		50	15	3.3
SUMMARY OF ROADWAY QUANTITY SHEETS		4	4	8		6		22	1	22.0
SUMMARY OF REMOVAL QUANTITY SHEETS		4	4	8		6		22	1	22.0
SUMMARY OF EARTHWORK QUANTITY SHEETS		4	4	8		6		22	1	22.0
DETERMINATION OF DESIGN EXCEPTIONS/WAIVERS		8	4					12		
HOURS SUB-TOTALS	0	68	132	196	0	476	0	872	57	
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$0.00	$13,663.10	$22,442.11	$30,293.76	$0.00	$51,499.39	$0.00	$117,898.37		
SUBTOTAL (FC 160)								**$117,898.37**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
DRAINAGE (FC161)										
SW3P PLAN		2	12			12		26	1	26.0
SW3P LAYOUTS (SCALE 1"=100') (Double Banked)		4	8	40		60		112	4	28.0
SW3P STANDARDS		2	2			16		20	5	4.0
SUMMARY OF SW3P QUANTITY SHEETS		2	4	8		6		20	1	20.0
HOURS SUB-TOTALS	0	10	26	48	0	94	0	178	11	
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$0.00	$2,009.28	$4,420.42	$7,418.88	$0.00	$10,170.05	$0.00	$24,018.62		
SUBTOTAL (FC 161)								**$24,018.62**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
SIGNING, PVMT. MARKING, & SIGNAL (FC162)										
PAVEMENT MARKING LAYOUTS (SCALE 1"=100') (Double Banked)		4	8	24		60		96	4	24.0
PAVEMENT MARKING STANDARDS		2	4	6		8		20	5	4.0
SUMMARY OF PAVEMENT MARKING QUANTITY SHEETS		2	4	8		6		20	1	20.0
SMALL SIGNING LAYOUTS (SCALE 1"=100') (Double Banked)		4	8	24		60		96	4	24.0
SUMMARY OF PROPOSED SMALL SIGNS		4	6	16		16		42	2	21.0
SMALL SIGN DETAILS		2	4	8		8		22	1	22.0
SIGNING STANDARDS		2	4	6		16		28	8	3.5
HOURS SUB-TOTALS	0	20	38	92	0	174	0	324	25	
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$0.00	$4,018.56	$6,460.61	$14,219.52	$0.00	$18,825.41	$0.00	$43,524.10		
SUBTOTAL (FC 162)								**$43,524.10**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
MISCELLANEOUS (ROADWAY) (FC 163)								0		
TITLE SHEET		1	4			16		21	1	21.0
INDEX OF SHEETS		1	4	4		24		33	2	16.5
PROJECT LAYOUTS		1	2	4		16		23	1	23.0
SOIL BORING LAYOUTS			2	8		16		26	1	26.0
SOIL BORING LOGS			2	8		24		34	4	8.5
HORIZONTAL AND VERTICAL CONTROL INDEX		1	2	4		12		19	1	19.0
HORIZONTAL AND VERTICAL CONTROL SHEETS		1	2	4		12		19	1	19.0
TRAFFIC CONTROL PLAN NARRATIVE		1	2	8		12		23	1	23.0
CONSTRUCTION SEQUENCE LAYOUT		1	2	8		12		23	1	23.0
PROJECT LIMIT SIGNING LAYOUT		1	2	4		12		19	1	19.0
TRAFFIC CONTROL PLANS		8	16	40		100		164	8	20.5
TRAFFIC CONTROL STANDARDS		2	4	16		40		62	20	3.1
SUMMARY OF TRAFFIC CONTROL QUANTITY SHEETS		2	4	8		6		20	1	20.0
TRAFFIC CONTROL WORKSHOP		2	4	6		8		20		
SAFETY REVIEW TEAM MEETING		2	4	6		8		20		

EPIC SHEETS		4	8	12		24		48	2	24.0
COMPUTE & TABULATE QUANTITIES (30, 60, 90 & FINAL)	2	8	32	40		48		130		
CONSTRUCTION COST ESTIMATE & DCIS INPUT (30, 60, 90 & FINAL)	2	8	16	24				50		
GENERAL NOTES, SPECIFICATIONS AND PROVISIONS	4	8	20	16				48		
CONSTRUCTION TIME DETERMINATION (PRIMAVERA)	2	8	40					50		
QC & CONSTRUCTABILITY REVIEWS (30, 60, 90 & FINAL)	4	8	32	64		80		188		
PERMIT REVIEW FOR NEW DEVELOPMENT (MAX OF 2)	2	4	8					14		
HOURS SUB-TOTALS	16	72	212	284	0	470	0	1054	45	
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$3,956.74	$14,466.82	$36,043.39	$43,895.04	$0.00	$50,850.24	$0.00	$149,212.22		
SUBTOTAL (FC 163)								**$149,212.22**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	SENIOR ENGINEER TECH	CADD OPERATOR	CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
CONSTRUCTION PHASE SERVICES (FC 309) - T&M										
								0		
ASSISTANCE AND SUPPORT DURING BIDDING	4	8	16					28		#DIV/0!
PRECONSTRUCTION MEETINGS	2	4						6		#DIV/0!
FIELD MEETINGS		20	40					60		#DIV/0!
WEEKLY PROGRESS MEETINGS	36		36					72		#DIV/0!
SHOP DRAWING REVIEW		16	40					56		#DIV/0!
RESPOND TO RFIS		16	40					56		#DIV/0!
RESPOND TO GENERAL QUESTIONS		8	20					28		#DIV/0!
PROVIDE CLARIFICATIONS		8	20					28		
HOURS SUB-TOTALS	42	80	212	0	0	0	0	334		
CONTRACT RATE PER HOUR	$247.30	$200.93	$170.02	$154.56	$123.65	$108.19	$92.74			
TOTAL LABOR COSTS	$10,386.43	$16,074.24	$36,043.39	$0.00	$0.00	$0.00	$0.00	$62,504.06		
SUBTOTAL (FC 163)								**$62,504.06**		

DESCRIPTION							TOTAL MH BY FC	TOTAL COSTS BY FC
SUMMARY								
PROJECT MANAGEMENT (FC 145) - SEGMENT 1 & 2							1210	$214,838.40
ROADWAY DESIGN CONTROLS (FC160)							872	$117,898.37
DRAINAGE (FC161)							178	$24,018.62
SIGNING, PVMT. MARKING, & SIGNAL (FC162)							324	$43,524.10
MISCELLANEOUS (ROADWAY) (FC 163)							1,054	$149,212.22
CONSTRUCTION PHASE SERVICES (FC 309) - T&M							334	$62,504.06
SUBTOTAL LABOR EXPENSES							2428	**$611,995.78**
OTHER DIRECT EXPENSES	**QUANTITY**	**RATE**	**UNIT**					
Mileage (# of miles) (0.550)	2,500	$0.550	MI					$1,375.00
Courier Services	40	$30.00	EACH					$1,200.00
Photocopies 8.5x11	2,500	$0.10	EACH					$250.00
Photocopies 11x17	10,000	$0.25	EACH					$2,500.00
Plot (Color on Bond)	1,000	$3.50	SF					$3,500.00
Mylars 11x17	0	$4.00	SHEET					$0.00
CD Archive	10	$5.00	EACH					$50.00
SUBTOTAL DIRECT EXPENSES								**$8,875.00**

SUMMARY	
TOTAL COSTS FOR PRIME ONLY(includes multiplier)	$611,995.78
NON-SALARY (OTHER DIRECT EXPENSES)	$8,875.00
SUBCONTRACTS (includes labor costs and direct expenses)	$0.00
GRAND TOTAL	$620,870.78

GENERAL DESCRIPTION OF PROJECTS

PROJECT 1

Fort Bend County proposes to design a new southbound frontage road and analyze intersection improvements along the west side of SH 99/Grand Parkway from Cinco Ranch Boulevard to Westheimer Parkway. The proposed project is approximately 0.7-miles in length. Efforts will be taken to develop design solutions within the existing right-of-way (ROW); however, additional ROW is anticipated.

PROJECT 2

Fort Bend County proposes to design a new southbound frontage road and analyze intersection improvements along the west side of SH99/Grand Parkway from north of Fry Road to FM 1093. The proposed project is approximately 1.5-miles in length. Efforts will be taken to develop design solutions within the existing right-of-way (ROW); however, additional ROW is anticipated.

The "Engineer" shall perform the work in accordance with current and applicable Fort Bend County and TxDOT regulations, policies, standards and guidelines. This proposal describes sources of data needed from other federal, state, and local governmental and quasi-governmental agencies and field investigations in order for the Engineer to complete their work.

A sub consultant to the Engineer on the Project is hereinafter referred to as the "Consultant".

PART 1 - PRELIMINARY ENGINEERING SERVICES

Function Code 110: Schematic Design and Development (Project 2)

1. Data Collection and Corridor Assessment

1.1. Data Collection

The Engineer shall conduct field reconnaissance and collect data as necessary to complete the schematic design. Data shall include the following:

- Existing and future design year traffic data. Design year traffic data to be provided by others.
- Applicable roadway inventory information, including the number of lanes, speed limits, pavement widths and rating, bridge widths and ratings, and ROW widths
- Aerial photos, planimetric mapping, and DTM (provided by others)
- Environmental Data
- Record plans as available
- Federal Emergency Management Agency (FEMA) Flood Boundary Maps
- Public and private utility information

1.2. Develop Base Maps

The base maps to be used for analysis and proposed schematic layout shall be developed by the Engineer from existing construction and right of way (ROW) plans, as available. The Engineer shall identify existing ROW, property owners and the approximate location of major utilities in the preparation of base maps.

1.3. Analyze Existing Conditions

Using collected data and base maps, the Engineer shall develop an overall analysis of the existing conditions in order to develop the schematic design. The analysis shall include, but not be limited to the following:

- ROW determination
- Horizontal alignment
- Profile grades
- Pavement cross slopes and pavement type
- Intersection design and analysis
- Sight distance
- Roadside signing
- Level-of-service
- Locations of critical constraints
- Drainage
- Traffic control and construction phasing sequence

1.4 Geotechnical Borings and Investigations (by Aviles)

The Consultant shall determine the location of proposed soil borings for potential sound walls, ditch slope stability, and along storm drain, and perform all geotechnical work in accordance with the latest version of TxDOT's Geotechnical Manual. All testing shall be performed in accordance with the latest version of the State's Manual of Test Procedures. American Society for Testing Materials (ASTM) test procedures can be used only in the absence of the State's procedures. All soil classification shall be done in accordance with the Unified Soil Classification System.

The Consultant shall provide a signed, sealed and dated geotechnical report which contains, but is not limited to, soil boring locations, boring logs, laboratory test results, generalized subsurface conditions, ground water conditions, piezometer data, analyses and recommendations for settlement and slope stability of the earthen embankments, skin friction tables and design capacity curves including skin friction and point bearing. The skin friction tables and design capacity curves must be present for piling and drilled shaft foundation.

The Consultant shall incorporate soil boring data sheets prepared, signed, sealed, and dated by the Geotechnical Engineer. The soil boring sheets shall be in accordance with the State's WINCORE software as can be found on the TxDOT website.

2. Design Concept Conference

In accordance with the State's Project Development Process Manual, the Engineer, in cooperation with the State, shall plan, attend and document a Design Concept Conference (DCC). In preparation for the DCC, the Engineer shall complete a State's Design Summary Report to serve as a checklist for the minimum required design considerations. The conference will provide for a brainstorming session in which decision makers, stakeholders and technical personnel may discuss and agree on:

- Roadway and drainage design parameters
- Engineering and environmental constraints
- Project development schedule
- Other issues as identified by the State
- Identify any Design Exceptions and waivers
- Preliminary Construction Cost Estimate

3. Conceptual Design Schematics

The Engineer shall develop conceptual design schematics in MicroStation format to evaluate various alignments. Profile work will be done only to the extent necessary to lay out the proper horizontal geometry. The conceptual schematic layouts shall contain the following design elements:

- Roadway alignment
- Pavement edges, face of curbs and shoulder lines
- Typical sections of existing and proposed roadways
- Proposed structure locations
- Preliminary ROW requirements and control-of-access locations
- Direction of traffic flow and the number of lanes
- Existing and projected traffic volumes

4. Geometric Design Schematics

The Engineer shall furnish Microsoft Office and MicroStation V8 or V8i-Geopak compatible computer generated media containing the roadway schematic layout. All supporting attachments and exhibits shall accompany the schematic layout.

Design shall be prepared in accordance with the latest version of TxDOT Advance Project Development Design Schematic Checklist, TxDOT Roadway Design Manual, TxDOT Project Development Process Manual, American Association of State Highway and Transportation Officials (AASHTO), including:

- Roadway alignments for ramps, frontage roads and cross streets
- Pavement edges, curb lines, sidewalks
- Typical sections of existing and proposed roadways
- Structure locations
- Existing and proposed major utilities
- Existing property lines and respective property ownership information
- ROW requirements adequate for preparation of ROW ramps
- Control-of-access limits
- Existing and projected traffic volumes
- Location and text of the proposed guide signs
- Lane lines, shoulder lines, and direction of traffic flow arrows
- Calculated profile grade and vertical curve data including "K" values
- Potential noise barrier locations

4.1. Typical Sections

The Engineer shall develop both existing and proposed typical sections that depict the number and type of lanes, shoulders, median width, curb offsets, cross slope, border width, clear zone widths, bicycle and pedestrian facilities, and ROW limits.

4.2. Environmental Constraints

The Engineer shall consider impacts to environmentally sensitive sites.

4.3. Drainage Study (by Sirrus Engineers, INC.)

The Consultant will prepare, submit, and obtain approval of a Drainage Impact Analysis. This analysis will identify the changes in peak flows due to the proposed roadway improvements and recommend drainage measures to mitigate the impacts associated with the proposed improvements. This study will include the evaluation of the existing storm sewer systems and recommend preliminary size detention basin or an enlarged storm sewer system so as not to impact the receiving streams or the abutting property.

The Consultant will determine the 100-year storm impacts resulting from construction of the project and develop and analyze alternatives to mitigate these impacts. The following tasks describe the work to be performed:

- Prepare 100-year storm drainage area maps for existing and proposed conditions, which includes the southbound lanes, within the project right of way (ROW) and any off-site areas draining into the ROW.
- Compute existing & proposed peak flows with standard TxDOT methodology within the ROW. The Rational Method will be used to compute these flows for drainage areas less than 200 acres and the Small Watershed Method will be used to evaluate the impacts of the ultimate conditions. HEC-HMS modeling will be used for drainage areas equal to or greater than 200 acres.
- Compute required 100-year storage volumes within the ROW using the average end area method to determine mitigation requirements for the proposed condition versus existing conditions.
- Prepare existing & proposed hydrographs at each outfall location to develop mitigation alternatives to implement the required 100-year mitigation. Alternatives may include increasing storm sewer sizes beyond what is required for 10-year storm design or improving existing roadside ditches/ or providing a detention site required within the vicinity. The location of detention site may vary & further analysis depending on the location will be needed.
- Prepare construction cost estimates for mitigation alternatives developed in previous task to assist in selecting the most cost effective mitigation methods.
- Prepare a Drainage Mitigation Study report to summarize and document the findings of this study. The report will include the following items at a minimum:
    - Conceptual and generic discussions of mitigation alternatives considered
    - Comparative costs associated with each alternative
    - Recommended mitigation solutions
    - Required mitigation volumes of ultimate versus existing conditions
    - Plan sheets showing proposed mitigation plan w/ outfall & flowline elevations
    - Hydrologic and hydraulic computer models such as HEC-HMS, HEC-RAS, or XP-SWMM with drainage area maps
    - Drainage outfall descriptions
    - The report will be signed and sealed by a professional engineer.

8. Deliverables

- Project Scope for CE Determination Form (PDF to Client & TxDOT)
- Technical Reports (See Task 5 above) (PDF to Client & TxDOT)
- Noise Analysis (PDF & TNM files to Client & TxDOT)
- Hazardous Materials Assessment (PDF to Client & TxDOT)
- CE Determination Form (PDF to Client & TxDOT)
- Noise Workshop Summary Report (PDF to Client & TxDOT)

Function Code 130: RIGHT-OF-WAY (ROW) DATA (Project 2)

1. ROW Mapping (by Weisser)

All surveys shall meet the standards set in the Professional Land Surveying Practices Act, the General Rules of Procedures and Practices promulgated by the Texas Board of Professional Land Surveying (TBPLS), and the Texas Department of Transportation (TxDOT) TxDOT Survey Manual, latest edition.

The Surveyor shall evaluate the existing ROW envelope and make recommendations for the acquisition of ROW necessary for the Project including but not limited to roadway, corner cuts, sight distance triangles, detention, and outfalls, if necessary.

The Surveyor shall establish a project baseline based on centerline of Project.

The Surveyor shall create an available existing utility list (Excel Format) including the type, owner, location, and contact information for available existing utilities within the project limits to be supplied to the Engineering Consultant to complete the identification of potential utility conflicts.

The Surveyor shall sign and seal all survey documents.

Existing ROW Mapping will include:

- Perform abstract survey; obtain deeds of records, and plats for Grand Parkway (SH 99) ROW, streets intersecting Grand Parkway (SH 99) and tracts of land adjoining Grand Parkway (SH 99).
- Establish the existing ROW of Grand Parkway (SH 99).
- Prepare existing ROW Map of the Project certifying to a Cat. 1B, Cond. II ROW Survey to be delivered in PDF format.
- Prepare Survey Control Sheet(s) for the project to be delivered in PDF format.
- Parcel Surveys (Cat. 1A; Cond. II) - Prepare metes and bounds descriptions in accordance with TxDOT guidelines for property acquisition and add parcels to the existing ROW maps.

2. Utility Adjustment Coordination

Utility Adjustment Coordination shall include utility coordination meetings with individual utility companies, communication and coordination with utilities, preparation of utility agreement assemblies including utility agreements, joint use agreements, and advanced funding agreements.

2.1 Utility Coordination

The Utility Coordinator shall perform utility coordination and liaison activities with involved utility owners, their consultants, and the County to achieve timely project notifications, formal coordination meetings, conflict analysis and resolution.

- The Utility Coordinator shall coordinate all activities to facilitate the orderly progress and timely completion of the design phase.
- The Utility Coordinator shall provide initial project notification letters to all affected utility companies, owners, and other concerned parties.
- The Utility Coordinator shall provide a Utility Contact List for each.
- The Utility Coordinator shall advise utility companies and owners of the general characteristics of the Project and provide an illustration of the project footprint for mark-up of the utility facility locations that occupy the project area.

2.2 Utility Agreements for Utility Adjustments

The Utility Coordinator shall coordinate with utilities that conflict with highway construction or the "Utility Accommodation Rules" (UAR), and make the utility company aware of these conflicts. The Utility Coordinator shall assist the utility companies in the preparation of required agreements associated with the funding of adjustments and the occupation of State right of way.

2.3 Review of Utility's Proposed Adjustments

The Utility Engineer shall evaluate alternatives in the adjustment of utilities balancing the needs of both the State and the Utility.

The Utility Engineer shall review the utility adjustment estimates for reasonableness of cost and the timely scheduling of the adjustment.

The Utility Engineer shall review plans for compliance with Utility Accommodation Rules and proposed location data. The responsibility for quality and accuracy of Utility adjustment plans will remain with the Utility Company.

Function Code 145: Project Management (Project 1 & 2)

The Engineer, in association with the Project Manager shall be responsible for directing and coordinating all activities associated with the project to comply with policies and procedures, and to deliver that work on time.

1. Progress Reports and Invoices

The Engineer shall conduct monthly project reviews, prepare monthly Progress Reports and Invoices for review and approval. Progress Reports shall include a brief discussion of the activities conducted during the reporting period and activities planned for the upcoming month, and describe any problems/delays encountered and remedial actions needed and/or exercised to alleviate the same.

2. Coordination/Administration

The Engineer shall manage project activities (including scheduled/ unscheduled meetings), maintain the project files, and direct Project Teams and staff.

3. Quality Plan

The Engineer shall establish a project specific Quality Management Plan to provide Quality Control and Quality Assurance processes for Team members.

4. Sub-consultant Management

The Engineer shall manage subcontracts/supplemental agreements for sub-consultant(s), monitor sub-consultant activities (staff and schedule), and review and recommend approval of sub-consultant invoices and progress reports.

Function Code 150: Surveys (Project 2) (by Weisser)

1. **Topographic Surveying**

The Surveyor will provide the following within the surveying limits:

- Utilize horizontal and vertical project control established and provided by TxDOT.
- For the roadway and ditches, obtain cross-sections at 100-foot intervals with grade breaks. Cross-sections shall extend 20 feet beyond the proposed right-of-way lines where accessible. Identify locations and elevations of physical features to include buildings, fences, walls, trees, sidewalks, driveways and driveway curbs, power poles, light poles, water meters, water wells, ponds, sprinklers, off-site drain pipe, etc. Horizontally and vertically locate available existing utilities within, crossing, and adjoining project limits. Utilities will be located and tied based on visual evidence and utilities based on maps, plans, and marked by

"One Call" within the project limits, flow line elevations, sizes, material types and directions of pipes will be obtained on storm sewer lines, sanitary sewer lines and culverts. The rim (top) and flow line elevations will be obtained on inlets, manholes, and drainage structures.

- The Surveyor will coordinate with pipeline companies, municipal utility districts (MUDs), homeowner's associations (HOA's), Fort Bend County, and private utility agencies to obtain locations of available existing utilities and depths of existing pipelines and provide Level B Subsurface Utility Surveying.
- Survey geotechnical bore hole locations as indicated by Client and provide information to Client in an approved digital format.
- Prepare existing Topographic Survey Map of the Project certifying to a Cat. 6, Cond. II Topographic Survey to be delivered in PDF format.
- Topographic survey will supplement TxDOT's aerial flight data.
- The 3D topographical survey base map and digital terrain model (DTM), surface triangular irregular network (TIN) will be created and delivered for the existing roadway using Geopak and Microstation.

2. Subsurface Utility Engineering (Level B) Utility/Pipeline Investigations

The Survey shall perform such investigations, research, and other activities necessary to identify any potential utility/pipeline conflicts with the Project, including but not limited to:

- Locating and identifying available existing utilities/pipelines including casings and vent pipes within the existing and proposed rights-of-way, including obtaining information from utility owners record drawings and site reconnaissance, as well as shooting elevations marked or uncovered by others, and providing Subsurface Utility Engineering Level B effort to locate all available subsurface utilities within the existing and proposed ROW.
- Level B – Two dimensional (x,y) information obtained through the application and interpretation of no-destructive surface geophysical methods. Also known as "designating", this quality level provides the horizontal position of subsurface utilities within approximately one foot.

PART 2 - PS&E SERVICES (Project 1)

SERVICES TO BE PROVIDED BY THE ENGINEER

The work to be performed by the Engineer shall consist of providing engineering services required for the schematic refinement and environmental re-evaluation of the existing schematic and the preparation of plans, specifications and estimates (PS&E) and related documents.

GENERAL REQUIREMENTS

1. Design Criteria

The Engineer shall prepare all work in accordance with the latest version the PS&E Preparation Manual, Roadway Design Manual, Hydraulic Design Manual, the Texas Manual on Uniform Traffic Control Devices (TMUTCD), Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges.

The Engineer shall supplement criteria established as part of Schematic Design Phase. The Engineer shall update the Design Summary Report (DSR). The Engineer shall obtain written concurrence from the State prior to proceeding with a design if any questions arise during the design process regarding the applicability of State's design criteria.

The Engineer shall prepare design waiver or exception questionnaires as warranted per State guidance. The Engineer shall supply the required justification, facts, and summaries to support the proposed Design Waivers or Exceptions. The Engineer shall make up to two submittals and corresponding revisions of the design exception report.

2. Quality Assurance and Quality Control (QA/AC)

The Engineer shall maintain records of their internal review, as confirmation that the designs are being prepared in accordance with the adopted Quality Plan

Function Code 145: Project Management (Project 1 & 2)

The Engineer, in association with the Project Manager shall be responsible for directing and coordinating all activities associated with the project to comply with policies and procedures, and to deliver that work on time.

1. Progress Reports and Invoices

The Engineer shall conduct monthly project reviews, prepare monthly Progress Reports and Invoices for review and approval. Progress Reports shall include a

brief discussion of the activities conducted during the reporting period and activities planned for the upcoming month, and describe any problems/delays encountered and remedial actions needed and/or exercised to alleviate the same.

2. Coordination/Administration

The Engineer shall manage project activities (including scheduled/ unscheduled meetings), maintain the project files, and direct Project Teams and staff.

3. Quality Plan

The Engineer shall establish a project specific Quality Management Plan to provide Quality Control and Quality Assurance processes for Team members.

4. Sub-consultant Management

The Engineer shall manage subcontracts/supplemental agreements for sub-consultant(s), monitor sub-consultant activities (staff and schedule), and review and recommend approval of sub-consultant invoices and progress reports.

Function Code 160: Roadway Design Controls

1. Roadway Design

The Engineer shall provide roadway plan and profile drawings using Computer-Aided Design and Drafting (CADD) standards as required by the State. The plan view shall contain the following design elements:

- Calculated roadway centerlines for mainlanes, ramps, cross streets and frontage roads, as applicable. Horizontal control points shall be shown. The alignments shall be calculated using GEOPAK.
- Pavement edges for all improvements (mainlanes, ramps, cross streets, driveways and frontage roads, if applicable).
- Lane and pavement width dimensions.
- The geometrics of ramps, auxiliary lanes.
- Proposed structure locations, lengths and widths.
- Direction of traffic flow on all roadways.
- Control of access line, & ROW lines and easements.
- Begin/end super elevation transitions and cross slope changes.
- Limits of rip rap, block sod, and seeding.
- Existing utilities and structures.
- Benchmark information.
- Radial call outs, curb location, Concrete Traffic Barrier (CTB), guard fence, crash safety items and American with Disabilities Act Accessibility Guidelines (ADAAG) compliance items.
- Removal items.

The profile view shall contain the following design elements:

- Calculated profile grade for proposed mainlanes, ramps, cross streets and frontage roads, if applicable. Vertical curve data, including "K" values shall be shown.
- Existing and proposed profiles along the proposed centerline of the mainlanes, the outside shoulder line of ramps, and the outside gutter line of the designated frontage roads.
- Water surface elevations at major stream crossing for 2, 5, 10, 25, 50, and 100-year storms.
- Calculated clearances, taking into account the appropriate super elevation rate.
- The location of interchanges, mainlanes, grade separations and ramps (shall include cross sections of any proposed or existing roadway, structure, or utility crossing).

2. Typical Sections

Typical sections shall be required for all proposed and existing roadways and structures.

The Engineer shall provide the design of mainlanes with full shoulders, frontage roads, entrance and exit ramps, managed lanes and auxiliary lanes. The design shall be consistent with the approved refined schematic and the current Roadway Design Manual.

3. Cross Streets

The Engineer shall provide an intersection layout detailing the pavement design and drainage design at the intersection of each cross street. The layout shall include the curb returns, geometrics, transition length, stationing, and pavement and drainage details. The Engineer shall design for full pavement width to the ROW and provide a transition to the existing roadway.

4. Cut and Fill Quantities

The Engineer shall develop an earthwork analysis to determine cut and fill quantities and provide final design cross sections at 100 feet intervals. Cross sections shall be delivered in standard GEOPAK format on 11"x17" sheets or roll plots and electronic files. The Engineer shall provide all criteria and input files used to generate the design cross sections.

5. Plan Preparation

The Engineer shall prepare roadway plans, profiles and typical sections for the proposed improvements.

Function Code 161: Drainage (by Sirrus Engineers, INC.)

1. Drainage Design

The Consultant shall provide drainage layouts, drainage area maps, calculations, and design of all drainage components. The Consultant shall design all detention/retention ponds, conventional storm drainage and cross drainage in conformance with the State Hydraulic Design Manual (May 2014), Districts' criteria.

The drainage design will be prepared to provide for the two-lane frontage section. At a minimum the drainage items to be provided shall include the detailed drainage area maps showing the final drainage areas and inlet and storm sewer calculations for revised storm sewer flow elements. All drainage designs shall be prepared in accordance with the findings presented in the Drainage Study. The proposed tasks are listed below:

- Conduct field trips to the Project site to investigate and confirm data and assumptions and assess general drainage conditions as needed;
- Review previous plans and drainage reports prepared by others which relate to drainage in the Project area (to be provided by the PMC);
- Prepare proposed drainage area maps for proposed improvements within the portion of the Project limits stated above;
- Design drainage structures located within the Project ROW, including open ditch drainage, storm sewer, inlets, manholes, subsurface drainage at retaining walls, and inlets/internal drainage piping where required on structures;
- Design and analyze the storm sewer system utilizing the WINSTORM Program and incorporate output to plan set;
- Design and analyze the roadside ditches for the proposed drainage criteria and incorporate results into the plans set on the roadway plan and profile sheets;
- Prepare storm sewer plan/profile drawings and special plan details, where required, for storm sewer system, laterals, junction boxes, etc. Identify potential utility conflicts during project design. Drawings will be prepared on 11" X 17" sheet at horizontal scale of 1"=100' and vertical scale of 1"=10'; and
- Design cross-culvert extensions, if required, within the Project limits. This task is the extent to which designs and calculations regarding cross-culverts is required. Required drainage work outside the ROW will be performed by others.

Function Code 162: Signing, Pavement Markings and Signalization (Permanent)

1. Signing

The Engineer shall prepare drawings, specifications and details for all project-related signs. The Engineer shall coordinate with the State (and other Engineers as required) for overall temporary, interim and final signing strategies and placement of signs within contract limits.

2. Pavement Marking

The Engineer shall detail both permanent and temporary pavement markings and channelization devices on plan sheets. The Engineer shall coordinate with the State (and other Engineers as required) for overall temporary, interim, and final pavement marking strategies. The Engineer shall select Pavement markings from the latest State standards.

3. Traffic Signals (by TEDSI)

Based upon the results of the Traffic Warrant Studies and paving improvements associated with the SB Frontage Road implementation, the Consultant shall identify necessary signal modifications Traffic all Signal Plans for warranted traffic signals. Based upon current conditions and the Project concept, this design is not intended to provide for full, brand new traffic signal installations. Rather, it should be limited to items such as re-cabling the west halves of both signalized intersections due to potential relocation of signal poles and pedestrian poles, ADA upgrades, etc. Traffic Signal Plans shall be signed, sealed, and dated by a Professional Engineer licensed in Texas. The Consultant shall develop all quantities, general notes, specifications and incorporate the appropriate agency standards required to complete construction.

Function Code 163: Miscellaneous (Roadway)

1. Traffic Control Plan, Detours, Sequence of Construction

The Engineer shall prepare Traffic Control Plans (TCP) for the project. A detailed TCP shall be developed in accordance with the TMUTCD (Oct 2014).

2. Storm Water Pollution Prevention Plans (SW3P)

The Engineer shall develop SW3P, on separate sheets from (but in conformance with) the TCP, to minimize potential impact to receiving waterways. The SW3P shall include text describing the plan, quantities, type, phase and locations of erosion control devices and any required permanent erosion control.

3. Compute and Tabulate Quantities

The Engineer shall provide the summaries and quantities with formal submittals.

4. Estimate

The Engineer shall independently develop and report quantities necessary to construct contract in standard State bid format at the specified milestones and Final PS&E submittals. The Engineer shall prepare construction estimates using Microsoft Excel or in a format directed by the State.

5. Specifications and General Notes

The Engineer shall identify necessary standard specifications, special specifications, special provisions and the appropriate reference items. The Engineer shall prepare general notes, special specifications and special provisions for inclusion in the plans and bidding documents.

Deliverables

Plans

The Engineer shall provide the following information at each submittal:

1. 30% Plans Submittal
   - 1.1. 8 sets of 11" x 17" plan sheets for Review.
   - 1.2. Estimate of construction cost.
   - 1.3. Engineer's internal QA and QC markup set.
   - 1.4. Form 1002 and Design Exceptions with existing and proposed typical sections, location map and design exception exhibits.

2. 60% Plans Submittal:
   - 2.1. 8 sets of 11" x 17" plan sets for Review.
   - 2.2. Estimate of construction cost.
   - 2.3. Engineer's internal QA and QC marked up set.
   - 2.4. One set of a roll format TCP phasing layouts, one .pdf of plan sheets for TCP concept, and significant project procedures form (State Form 2229) to present at the TCAT for TxDOT review.

3. 90% Plans Submittal
   - 3.1. 8 sets of 11" x 17" plan sheets for the Review.
   - 3.2. Estimate of construction cost.
   - 3.3. Marked up general notes
   - 3.4. Construction schedule.
   - 3.5. New Special Specifications and Special Provisions with Form 1814, if applicable.
   - 3.6. Engineer's internal QA and QC marked up set.

3.7. Other supporting documents.

4. District Review Submittal (95%):
   - 4.1. 8 sets of 11" x 17" plan sheets for the State district review
   - 4.2. List of governing Specifications and Special Provisions in addition to those required.
   - 4.3. Marked up general notes.
   - 4.4. Plans estimate.
   - 4.5. New Special Specifications and Special Provisions with Form 1814, if applicable.
   - 4.6. Triple Zero Special Provisions.
   - 4.7. Engineer sign, seal and date supplemental sheets (8 ½" x 11").
   - 4.8. Contract time determination summary.
   - 4.9. Significant project procedures form.
   - 4.10. Right-of-Way and utilities certification.
   - 4.11. Temporary road closure letters.
   - 4.12. Construction speed zone request.
   - 4.13. Engineer's internal QA and QC marked-up set.
   - 4.14. Other supporting documents.

5. Final submittal (100%).
   - 5.1. 8 paper sets of 11" x 17"
   - 5.2. Revised supporting documents from 95% review comments.

Electronic Copies

The Engineer shall furnish a DVD of the final plans in the format of current CADD system used by TxDOT, and in .pdf format.

SERVICES NOT INCLUDED IN SCOPE OR FEE PROPOSAL

1. CLOMR & LOMR preparation and coordination;
2. Public Hearing;
3. Design of any utilities within project limits;
4. Negotiations with adjacent property owners;
5. Improvement Survey once project is complete;
6. Filing and permit fees;
7. Value engineering studies;
8. Illumination Plans;
9. Large Signing or new/special sign design;
10. VISSIM Modeling;
11. Design of ramp reversals;
12. Design of pump stations that may be required for detention;
13. Nationwide and Individual 404 Permits;
14. Landscaping, irrigation or hardscape design.

SCHEDULE OF MILESTONE SUBMITTALS

NTP: 06/05/18 (approximately 2 weeks after target Court date)

Complete Surveying and Geotechnical:	08/01/18
Schematic Submittal:	09/01/18
Drainage Study Submittal:	09/01/18
ROW Mapping Submittal:	11/01/18
Environmental Document Submittal:	11/01/18
30% design Submittal:	11/15/18
60% design Submittal:	02/01/19
90% design Submittal:	04/01/19
95% design Submittal:	06/01/19
100% Final Submittal:	09/01/19

**Note that all submittals are to TxDOT*