

AI-38993

4.

**DRAINAGE DISTRICT**

**Meeting Date:** 06/04/2013

Submitted By: Jaime Salazar, DRAINAGE DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

A.) Presentation of scoring grid of the firms evaluated through the District's "Pool" of Appraisers for the purpose of ranking by the Hidalgo County Drainage District No.1 Board of Directors in connection with Appraisal Services for Hidalgo County Drainage District No.1 J-09 Project.

FIRM NAME:	SCORE	RANK
LEONEL GARZA JR. & ASSOCIATES	98	
GEORGE J. SALAZAR APPRAISAL HAUS	97	
JOHNSON APPRAISAL GROUP	96	

B.) Requesting authority to negotiate Appraisal Service Contract to the number one ranked firm of \_\_\_\_\_, for the provision of Appraisal Services as it relates to Hidalgo County Drainage District No.1 J-09 Project.

BACKGROUND

Form Review

**Inbox**  
Budget & Management  
Final Approval

**Reviewed By**  
Obdett Calzada  
Monica Badillo

**Date**  
05/30/2013 09:32 AM  
05/31/2013 04:39 PM  
Started On: 05/29/2013 03:58 PM

Form Started By: Jaime Salazar

Final Approval Date: 05/31/2013

**AI-39030**

**5.**

**DRAINAGE DISTRICT**

**Meeting Date:** 06/04/2013

Submitted By: Jaime Salazar, DRAINAGE  
DISTRICT

Department: DRAINAGE DISTRICT

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Information

CAPTION

**2013 BOND SERIES**

Requesting approval of final negotiated Agreement for Professional Engineering Services with L&G Engineering and approval of Work Authorization No.1 in the amount of \$75,054.77 as it relates to Pct. 3 - Rural Drainage Development. Approved for negotiations by Hidalgo County Drainage District No.1 Board of Directors on January 15, 2013.

BACKGROUND

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Attachments

Agreement Pct.3 Rural Drainage

WA No.1

Form Review

<b>Inbox</b>	<b>Reviewed By</b>	<b>Date</b>
Budget & Management	Obdett Calzada	05/31/2013 11:27 AM
Final Approval	Monica Badillo	05/31/2013 04:39 PM
Form Started By: Jaime Salazar		Started On: 05/31/2013 09:57 AM
	Final Approval Date: 05/31/2013	

THE STATE OF TEXAS §

COUNTY OF HIDALGO §

**AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES**

**THIS AGREEMENT** is made, by and between **HIDALGO COUNTY DRAINAGE DISTRICT NO. 1** hereinafter called the “**Owner**”, and **L&G ENGINEERING** professional **Engineers**, hereinafter called the “**Engineer**”.

**WITNESSETH:**

**WHEREAS**, the **Owner** desires to contract with the **Engineer** to provide management and professional **Engineering** services for the **Rural Drainage Development Program for Pct #3** hereinafter referred to as the “**Project**”. It is important to note that the professional **Engineering** services anticipated under this contract will be for more than one project, and will be issued on a “**Work Authorization**” specific basis.

**NOW, THEREFORE**, the **Owner** and the **Engineer** in consideration of the mutual covenants and agreements herein contained do mutually agree as follows:

**ARTICLE 1. Employment of Engineer.** The **Owner** agrees to employ the **Engineer** and the **Engineer** agrees to perform management and professional **Engineering** services in connection with the “**Project**” as stated in the articles to follow and for having rendered such services, the **Owner** agrees to pay **the Engineer** compensation as stated in the articles to follow.

**ARTICLE 2. Character and Extent of Services.** This Agreement will provide for the development of the “**Project**” with the following:

**2.1 Scope of Work.** The **Owner** will furnish items and provide those services for the development of the “**Project**” and fulfillment of this Agreement, as identified in **EXHIBIT “A”** *Services to be Provided by the Owner*, attached hereto and made a part of this Agreement and the **Engineer** will provide professional management and **Engineering** services identified in **EXHIBIT “B”- Services to Provided by the Engineer**, attached hereto and made a part of this agreement.

**I. General Contract Management** (hereinafter referred to as “GCM”). For GCM, the primary role of the **Engineer** will be to perform professional management services. The **Engineer** as GCM manager, shall direct all tasks required by the project team (hereinafter referred to as “**Project Team**” and identified in the organizational chart shown in **EXHIBIT “B2”-Project Team**, attached hereto), consisting of various subconsultants, in the development of the project. As GCM manager, the **Engineer** shall organize and manage the project team, including: assigning the various **Engineering** work tasks; directing and controlling the work; planning, conducting, and documenting internal and external meetings; stabilizing policy, procedures, and quality assurance; and furnishing the necessary technical and support staff to implement the preliminary project planning and development (including, but not limited to, the identification and procurement of funding, and the development of a capital improvement program), preliminary **Engineering**, final design, and construction of the project.

**II. Preliminary Project Planning & Development.** For preliminary and development of the project, the primary role of the **Engineer** will be to perform **Engineering** activities and work tasks associated with the preparation of an environmental document, public involvement,

and the development of primary and secondary project field control through field surveying and aerial mapping.

**III. Preliminary Engineering, Final Design & Construction.** For these services, the **Engineer** will be performing **Engineering** activities as follows:

**(A) Preliminary Engineering.** As identified in **EXHIBIT "A"**, attached hereto, the **Owner** shall provide to the **Engineer** any available relevant data the **Owner** may have on file concerning the project for the **Engineer** to review. The **Engineer** will indicate of any errors and omissions and corrections needed as a basis for the final design of the project. The **Engineer** will prepare a report, hereinafter referred to as the "**Preliminary Engineering Report**". The "**Preliminary Engineering Report**" will be prepared by the **Engineer** in sufficient detail to indicate clearly the problems involved and the alternate solutions available to the **Owner**, to include preliminary layouts, sketches, and cost estimates and to set forth clearly the **Engineer's** recommendations for the final design of the project. The **Engineer's** recommendations for the final design of the project shall meet all federal, state and county permitting requirements.

**(B) Final Design.** Upon approval by the **Owner** of the **Engineer's** final recommendations, as shown in the "**Preliminary Engineering Report**", the **Engineer** will perform all required **Engineering** tasks, as more particularly identified in **EXHIBIT "B"**, attached hereto, to provide the **Owner** with a complete and approved set of plans, specifications, and estimates (incorporated herein by reference as "PS&E" for each phase of construction of the project.

**(C) Construction.** The **Engineer** will provide construction phase **Engineering** services for each phase of construction of the project that is authorized and funded by the **Owner** for construction. The steps or sequence for the professional management and **Engineering** services outlined for the scope of work above, and more particularly identified in EXHIBIT “B”, attached hereto, may be performed concurrently by the **Engineer**, if approved by the **Owner**.

**2.2 Classification of Services** For this Agreement, the professional services to be provided by the **Engineer**, are more particularly identified in **EXHIBIT “B”**, attached hereto.

**(1) Basic Services:** Basic Services, incorporated herein by reference as “**Basic Services**”, includes those professional services not otherwise identified under Article 5.2 of this Agreement.

**(2) Special Services:** Special services, incorporated herein by reference as “**Special Services**”, includes those professional services identified under Article 5.2 of this Agreement.

**2.3 Schedule of Work.** The **Engineer** shall prepare a schedule of work (hereinafter referred to as “**Work Schedule**”) in accordance with the terms identified in **EXHIBIT “C” - Work Schedule**, attached hereto and made a part of this Agreement.

**ARTICLE 3. Period of Service.** Upon execution of this Agreement, the **Engineer** shall proceed with the work outlined under Article 2 hereof.

**3.1 Termination Date.** This Agreement shall terminate upon completion of “**Project**”s (hereinafter referred to as the “**Termination Date**”), unless extended by written supplemental agreement, as provided in Article 8 hereof, duly executed by the **Engineer** and the **Owner** prior to the **Termination Date**, or otherwise terminated as provided in Article 3.4 herein and below. The **Owner**

assumes no liability or obligation for payment to the **Engineer** for work performed or costs incurred by the **Engineer** prior to the date authorized by the **Owner** for the **Engineer** to begin work, during periods when work is suspended, or subsequent to the **Termination Date**.

**3.2 Extension of the Termination Date.** The **Engineer** shall notify the **Owner** in writing as soon as possible if it is determined, or reasonably anticipated, that the work under this Agreement cannot be completed before the **Termination Date**, and the **Owner** may, at the **Owner's** sole discretion, extend the **Termination Date** by written supplemental agreement as provided in Article 8 hereof. The **Engineer** shall allow adequate time for review and approval by the **Owner** of the written notice and request by the **Engineer** to extend the **Termination Date**.

**3.3 Suspension of Work.** Should the **Owner** desire to suspend the work under this Agreement, but not terminate this Agreement, the **Owner** shall provide thirty (30) calendar days verbal notification to the **Engineer**, followed by written confirmation from the **Owner** to the **Engineer** to that effect. The thirty-day notice may be waived as agreed in writing by both the **Owner** and the **Engineer**. The work under this Agreement may be reinstated and resumed in full force and effect within sixty (60) days of receipt of written notice from the **Owner** to the **Engineer**. The sixty-day notice may be waived as agreed in writing by both the **Owner** and the **Engineer**.

If the **Owner** suspends the work, the **Termination Date** as identified above is not affected, and this Agreement will terminate on the date specified, unless extended by written supplemental agreement, as provided in Article 8 hereof, duly executed by the **Engineer** and the **Owner** prior to the **Termination Date**.

**3.4 Termination of Agreement.** This Agreement may be terminated before the stated **Termination Date** identified in Article 3.1 herein by any of the following conditions:

- (1) **Commitment of Current Revenues.** In the event that, during any term hereof, the **Owner** does not appropriate sufficient funds to meet to the obligations of this Agreement, the **Owner** may terminate this Agreement upon thirty (30) days written notice to the **Engineer**. The **Owner** agrees, however, to use reasonable efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of the **Owner** pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903 (Vernon Supp. 1995).
- (2) By mutual agreement and consent, in writing, of both the **Engineer** and the **Owner**.
- (3) By the **Owner**, upon failure of the **Engineer** to fulfill the **Engineer's** obligations set forth herein in a satisfactory manner as determined by the **Owner** and in sole opinion of the **Owner**, after the **Owner** provides written notice to the **Engineer** of such failure and the **Engineer** has not corrected such failure within (30) days of such written notice by the **Owner**.
- (4) By the **Engineer**, upon failure of the **Owner** to fulfill the **Owner's** obligations set forth herein, after the **Engineer** provides written notice to the **Owner** of such failure and the **Owner** has not corrected such failure within thirty (30) days of such written notice by the **Engineer**.
- (5) By the **Owner** without cause upon thirty (30) days written notice to the **Engineer**.
- (6) By satisfactory completion of all services and obligations described herein.

Should the **Owner** terminate this Agreement as herein provided, no fees other than fees due and payable at the time of termination shall thereafter be paid to the **Engineer** notwithstanding anything herein to the contrary. In determining the value of the work performed by the **Engineer** prior to

termination, the **Owner** shall be the sole judge of the value of such work performed. Compensation for work at termination will be based on a percentage of the work completed at that time. Should the **Owner** terminate this Agreement under (5) of the paragraph above, the amount charged during the thirty (30) day notice period shall not exceed the amount charged during the preceding thirty (30) days.

If the termination of this Agreement is due to the failure of the **Engineer** to fulfill the **Engineer's** obligations under this Agreement, the **Owner** may take over the "**Project**" and prosecute the work to completion. In such case, the **Engineer** shall be liable to the **Owner** for any additional cost occasioned by the **Owner**.

If the **Engineer** defaults in the performance of this Agreement or if the **Owner** terminates this Agreement for fault on the part of the **Engineer**, the **Owner** will give consideration to payment of an amount in settlement to include: the actual costs incurred by the **Engineer** in performing the work to the date of default, the amount of work required which was satisfactorily completed to date of default, the value of the work which is usable to the **Owner**, the cost to the **Owner** of employing another consultant and/or firm to complete the work required and the time required to do so, and other factors which affect the value to the **Owner** of the work performed at the time of default. This Agreement shall not be considered as specifying the exclusive remedy for any default by the **Engineer**, but all remedies existing at law and in equity may be availed of by either party and shall be cumulative.

The termination of the Agreement and payment of an amount in settlement as prescribed above shall extinguish all rights, duties, and obligations of the **Owner** and the **Engineer** under this Agreement, except the obligations set forth in Articles 11.2, 12, 13, 15, 16, 17, 18.3, 19, 22 and 26 hereto.

**ARTICLE 4. Progress and Coordination.** The **Engineer** shall, from time to time during the progress of the work, confer with the **Owner**. The **Engineer** shall prepare and present such

information as may be pertinent and necessary, or as may be requested by the **Owner**, in order to evaluate features of the **Engineer's** services and work.

At the request of the **Owner** or the **Engineer**, conferences shall be provided at the **Engineer's** office, the office of the **Owner**, or at other locations designated by the **Owner**. These conferences shall also include evaluation of the **Engineer's** services and work when requested by the **Owner**.

All applicable study reports shall be submitted in preliminary form for approval by the **Owner** before the final report is issued. The **Owner's** comments regarding the **Engineer's** preliminary report will be addressed by the **Engineer** in the final report.

If funds by other agencies or entities are to be used for the development of the "**Project**" under this Agreement, the **Engineer's** services and work will be subject to periodic review and approval by other agencies or entities, including those of the city, county, state and/or federal agencies.

Should it be determined that the progress in the production of the **Engineer's** services and work does not satisfy the requirements of the approved **Work Schedule** as provided by **Exhibit "C"**, attached hereto, the **Owner** shall review the approved **Work Schedule** with the **Engineer** to determine the corrective action needed by either the **Owner** or the **Engineer**.

The **Engineer** shall promptly advise the **Owner** in writing of events which have a significant impact upon the progress of the **Engineer's** services and work and the approved **Work Schedule**, including:

- (1) problems, delays, adverse conditions which will materially affect the ability to attain contract objectives, prevent the meeting of time schedules and goals, or preclude the timely completion and submittal of "**Project**" deliverables by the **Engineer** within established time periods; this disclosure will be accompanied by a statement by the **Engineer** of recommended or immediate action taken, or

contemplated, and any **Owner** or other agency or entity assistance needed to resolve the situation: and

- (2) favorable developments or events which enable meeting the **Work Schedule** goals sooner than anticipated.

**ARTICLE 5. Compensation and Fees.** For and in consideration of the services to be rendered by the **Engineer**, the **Owner** shall compensate the **Engineer** as follows:

**5.1 Basic Services.** For and in consideration of the Basic Services to be rendered by the Engineer, as identified in Article 2 and more particularly identified in EXHIBIT “B”, attached hereto, the maximum amount payable by the Owner to the Engineer for Basic Services, subject to adjustment in accordance with Article 6.1 herein, is equal to nine percent (9%) of the construction cost of the Project, as mutually-agreed between the Owner and the Engineer and more particularly defined in Article 6.1 herein, (hereinafter referred to as the “Basic Services Fee”), plus up to an additional one-half percent (0.5%) if the Engineer furnishes the requirements for incentives specified in Article 5.3 herein, as more particularly described in EXHIBIT “D2”

**5.2 Special Services.** Those services that may be required to provided by the **Engineer** as **Special Services** are set forth below and more particularly described in **EXHIBIT “B”**, attached hereto. For and in consideration of these **Special Services** rendered as required by the **Engineer**, the **Owner** shall pay the **Engineer** a negotiated lump sum fee (hereafter referred to as “**Special Services Fee**”) at the hourly labor rates and non-labor rates (hereinafter referred to as “**Contract Rates**”) specified in **EXHIBIT “D” - Contract Rates**, attached hereto and made a part of this Agreement, and as follows:

1. **RESIDENT OR SITE ENGINEER, INSPECTOR** Actual performance of services of “**Project**” site **Engineer**, resident **Engineer** and/or inspector, if required by **Owner**.
2. **DOCUMENT COPIES** Actual performance and/or providing of additional copies (over 10) of report; additional copies (over 10) of plans (contract drawings), specifications and

estimates (PS&E); additional copies (over 10) of bidding documents; additional copies (over 10) of as-built drawings.

3. **EXTRA TRAVEL** Extra travel required of **Engineer** and authorized by **Owner** to points outside of **HIDALGO COUNTY DRAINAGE DISTRICT NO. 1**.
4. **EXPERT WITNESS** Assistance to the **Owner** as expert witness in any litigation with third parties, arising from the development or construction of the **“Project”**.
5. **MISCELLANEOUS**. Investigations involving detailed consideration of operation, maintenance and overhead expenses and (unless otherwise agreed) the preparation of rate schedules, earning and expense statements; preparation of feasibility studies; environmental document preparation; appraisals, valuations, and material audits; or inventories required for certification of force account construction performed by the **Owner**; preparation of change orders for extra work done by the **Contractor**.

#### **ARTICLE 6. Method of Payment.**

**6.1 Request for Payment.** Payments to the **Engineer** for services rendered will be made while work is in progress as executed through a lump sum fee assigned to each work authorization (hereinafter referred to as **“Work Authorization”**) in accordance with **Article 7** herein. For each **Work Authorization**, the **Engineer** shall prepare and submit to the **Owner** monthly progress reports in sufficient detail to support the progress of the work and in support of a request for payment (hereinafter referred to as **“Request for Payment”**). The progress report shall indicate the percent completion of the work accomplished by the **Engineer** during the billing period and to the date of the **Request for Payment**. On or before noon of the first Monday of each month during the performance of the services, the **Engineer** shall submit to the **Owner** for approval a **Request for Payment**. Payment of the lump sum fee for each **Work Authorization** identified in the **Request for Payment** will be in proportion to the percent completion of the work tasks identified in such **Work Authorizations** together with a detailed breakdown of the amount and the sum of all prior payments. The **Owner** shall review each such **Request for Payment** and may make such exceptions as the **Owner** reasonably deems necessary or appropriate under the circumstances then existing. About ten (10) working days after the

Commissioners Court of the **Owner** meets approving such payment, the **Owner** shall make payment to the **Engineer** in the amount approved as aforesaid subject to Article 6.4 herein and below.

Should the **Project** or portions of the **Project** be awarded for construction, the **Owner** will reconcile and determine the final maximum amount payable for the **Basic Services Fee**, as identified in Article 5.1 hereof, for that portion of the Project that has been awarded for construction as follows:

(1) Construction Cost-An estimated construction cost will be developed for each phase of the project, and be updated throughout engineering (advance planning, final design and plans and specifications) development. A construction cost will be mutually agreed between the Owner and the Engineer in writing at the time of submittal of the final plans and specifications to the Owner (the "Final Estimated Construction Cost"). A fee will be calculated as nine percent (9%) of the Final Estimated Construction Cost ("Preliminary Basic Services Fee"). After the project is constructed, and the final construction cost of the project is determined, the Preliminary Basic Services Fee will be adjusted no more than plus or minus ten percent (+/-10%) as follows:

(a) If the final construction cost of the project is more than the Final Estimated construction Cost, the Basic Services Fee for engineering will be adjusted up, but the adjustment will be no more than plus ten percent (+10%) of the Preliminary Basic Services Fee; or,

(b) If the final construction cost of the project is less than the Final Estimated Construction Cost, the Basic Services Fee for engineering will be adjusted down, but the adjustment will be no more than minus ten percent (-10%) of the Preliminary Basic Services Fee.

(2) Incentives – The portion of the Basic Services Fee for funding incentive will be reconciled and based on funding received at the time of reconciliation.

This reconciliation and determination by the **Owner** will be performed on a yearly basis throughout the development of the **Project**, and within the period of service established in Article 3.

Payment due to the **Engineer** or credit owed to the **Owner** by the **Engineer** in the amount of this reconciliation and determination shall be applied to the next applicable **Request for Payment**.

**6.2 Final Payment.** After final completion of the work and acceptance thereof by the **Owner**, the **Engineer** shall submit a final request for payment ("**Final Request for Payment**") which shall set forth all amounts due and remaining unpaid to the **Engineer** and upon approval thereof by the **Owner**, the **Owner** shall pay to the **Engineer** the amount due ("**Final Payment**") under such **Final Request for Payment** in accordance with the provisions of Article 6.1 hereof. The **Final Payment** shall not be made until the **Engineer** delivers to the **Owner** an affidavit that so far as the **Engineer** has knowledge or information any and all amounts due for materials and services over which the **Engineer** has control have been paid.

**6.3 Qualification on Obligations to Pay.** Any provision hereof to the contrary notwithstanding, the **Owner** shall not be obligated to make any payment (whether a payment under Article 6.1 hereof or **Final Payment**) to the **Engineer** hereunder if any one or more of the following conditions precedent exist:

- (1) The **Engineer** is in default of any of its obligations hereunder or otherwise is in default under this Agreement or under any contract documents related to this Agreement;
- (2) Any part of such payment is attributable to the **Engineer's** services which are not performed in accordance with this Agreement; provided, however, such payment shall be made as to the part thereof attributable to the **Engineer's** services which were performed in accordance with this Agreement.
- (3) The **Engineer** has failed to make payments promptly to consultants or other third parties used in connection with the "**Project**" for which the **Owner** has made payment to the **Engineer**;
- (4) If the **Owner**, in good faith judgment, determines that the portion of the compensation then remaining unpaid will not be sufficient to complete the **Engineer's** services in accordance with this Agreement, no additional payments will be due the **Engineer** hereunder unless

and until the **Engineer**, at its sole cost, performs a sufficient portion of the **Engineer's** services so that such portion of the compensation then remaining unpaid is determined by the **Owner** to be sufficient to so complete the **Engineer's** services.

**6.4** No partial payment made hereunder shall be or construed to be final acceptance or approval of that part of the **Engineer's** services to which such partial payment related or relieves the **Engineer** of any of its obligations hereunder with respect thereto.

**6.5** The **Engineer** shall promptly pay all bills for labor and material performed and furnished by others in connection with the performance of the **Engineer's** services.

**6.6 Waiver.** The making of the **Final Payment** shall constitute a waiver of all claims by the **Owner** except those arising from (1) faulty or defective services of the **Engineer** appearing after completion of the "**Project**". (2) failure of the **Engineer's** services to comply with the requirements of this Agreement or any contracts or Agreements related to the "**Project**", or (3) terms of any special warranties required by this Agreement or provided at law or in equity. The acceptance of **Final Payment** shall constitute a waiver of all claims by the **Engineer** except those previously made in writing and identified by the **Engineer** as unsettled at the time of the **Final Request for Payment**.

**ARTICLE 7. Work Authorization.** After execution of this Agreement, the **Engineer** shall proceed with the work outlined under Article 2 hereof, only as authorized by the **Owner** through an agreed **Work Authorization** document in the form identified in **EXHIBIT "E"- Work Authorization Form**, attached hereto and made a part of this Agreement. The **Engineer** will identify, as approved by the **Owner**, the needed services for the "**Project**", as required through the course of the development to the "**Project**". The **Owner** shall authorize the **Engineer** to perform one or more of the agreed tasks generally identified in **EXHIBIT "B"**, attached hereto, in the form of individual work authorizations. Upon authorization from the **Owner**, the **Engineer** will prepare a **Work Authorization** document, which will include a detailed description of the work to be performed, including a description of the

tasks and milestones, a work schedule, and an estimated cost proposal agreed upon by the **Owner** and the **Engineer**. The estimated cost proposal shall set forth in detail the computation of the cost of each work task, at the hourly rates established and identified in **EXHIBIT “D”**, attached hereto. The **Work Authorizations** shall not waive the **Owner’s** and the **Engineer’s** responsibilities and obligations established in this Agreement.

The estimated cost proposal for each **Work Authorization**, developed by the **Engineer** and approved by the **Owner** shall be used by the **Owner** to appropriate a purchase order for the **Work Authorization**. Each executed **Work Authorization** shall become a part of this **Agreement**. Upon satisfactory completion of the **Work Authorization**, the **Engineer** shall submit the **“Project”’s** deliverables as specified in the executed **Work Authorization** to the **Owner** for review and acceptance.

Work included in a **Work Authorization** shall not begin until the **Owner** and the **Engineer** have signed the **Work Authorization**. All work must be completed on or before the completion date specified in the **Work Authorization**, unless extended by written agreement by the **Engineer** and the **Owner**. The **Engineer** shall promptly notify the **Owner** of any event that will affect completion of the **Work Authorization**. All **Work Authorizations** must be executed and completed by both the **Engineer** and the **Owner** within the period established for this Agreement as specified in Article 3 hereof.

The final acceptance by the **Owner** of each **Work Authorization** for the **“Project”** shall serve as evidence of completion, on the part of the **Engineer**, of all services under this Agreement insofar as they pertain to that portion of work on the **“Project”** identified in the applicable work authorization.

**ARTICLE 8. Supplemental Agreements.** The terms of this Agreement may be amended by supplemental agreement if the **Owner** determines that (1) there is a need to extend the **Termination Date** identified in Article 3.1 hereof, (2) there has been a significant change in the scope, complexity or

character of the services to be performed by the **Engineer**, and/or (3) for any other reason agreeable to the **Owner** and the **Engineer**. All supplemental agreements will be developed in the form identified in **EXHIBIT “F” - *Supplemental Agreement Form***, attached hereto and made a part of this Agreement, and incorporated herein by reference as “**Supplemental Agreement**”.

If determined appropriate by the **Owner**, additional compensation to the **Engineer** for (1), (2) and/or (3) above shall be paid as a negotiated lump sum fee at the **Contract Rates** specified in **EXHIBIT “D”**, attached hereto. The negotiated lump sum fee shall be incorporated into the **Supplemental Agreement**.

Any **Supplemental Agreement** must be executed by both the **Engineer** and the **Owner** prior to the **Termination Date** specified in Article 3 hereof.

It is distinctly understood and agreed that no claim by the **Engineer** for additional work, as identified in Article 9 hereof, or changes or revisions in work, as identified in Article 10 hereof, shall be made by the **Engineer** until full execution of the **Supplemental Agreement** and authorization to proceed is granted by the **Owner**. The **Owner** reserves the right to withhold payment to the **Engineer** pending verification of satisfactory work performed by the **Engineer**.

**ARTICLE 9. Additional Work.** If the **Engineer** is of the opinion that any work it has been directed to perform is beyond the scope of this Agreement and constitutes extra work, the **Engineer** shall promptly notify the **Owner** in writing. In the event the **Owner** finds that such work does constitute extra work, the **Owner** shall so advise the **Engineer** and a written supplemental agreement will be executed between the **Owner** and the **Engineer** as provided herein. The **Engineer** shall not perform any proposed additional work or incur any additional cost prior to the execution by both the **Engineer** and the **Owner** of a supplemental agreement. Additional compensation from the **Owner** to the **Engineer** shall be paid as a negotiated lump sum fee at the Contract Rates specified in **EXHIBIT “D”**

attached hereto. The negotiated lump sum fee shall be incorporated into the supplemental agreement as specified in Article 8 hereof. The **Owner** shall not be liable or under any obligation to compensate the **Engineer** for work performed or costs incurred by the **Engineer** relating to additional work not directly associated with the performance of the work authorized in this Agreement or as amended through supplemental agreement.

**ARTICLE 10. Changes or Revisions in Work.** If the **Owner** finds it necessary to request changes to the work, and the changes are within the applications of sound **Engineering** principles, the **Engineer** shall make such revisions if requested and directed by the **Owner**.

**10.1 Preliminary Work.** The **Engineer** will make, without expense to the **Owner**, such revisions of any preliminary reports or drawings as may be required to meet the needs of the **Owner** and the applications of sound **Engineering** principles.

**10.2 Previously Approved or Satisfactorily Completed Work.** If the **Owner** funds it necessary to request the **Engineer** to make changes to work previously approved by the **Owner** or work satisfactorily completed for which the **Owner** approves or, after a definite plan has been approved by the **Owner**, if a decision is subsequently made by the **Owner**, which for proper execution involves extra services and expenses for changes in or additions to the drawings specifications or other documents, this will be considered as additional work, and compensation from the **Owner** to the **Engineer** will be in accordance with Article 9 hereof.

**10.3 "Project" Delays.** If the **Engineer** is required to perform additional work due to delays by the imposition of causes not within the **Engineer's** control, such as by the re-advertisement of bids or by the delinquency or insolvency of contractors, such work associated with these delays shall be considered additional work, and the **Engineer** shall be compensated by the **Owner** for such extra services and expense in accordance with Article 9 hereof.

**10.4 Reduction of “Project” Cost.** Notwithstanding any provision herein to the contrary, in the event it is necessary for the **Owner** to require changes in the final plan of the **“Project”** to enable it to reduce the construction cost of the **“Project”** to an amount within the sum estimated by the **Engineer**, the **Engineer** will be required to make such revisions or changes. These changes will only be considered additional work by the **Engineer**, if the **Engineer** previously provided these same changes as options to the **Owner** at the stage of preliminary work or prior to the approval of the final plan for the **“Project”**, and the option or options were not selected or approved by the **Owner** to be incorporated into the final plan of the **“Project”**. Payment for this additional work will then be made to the **Engineer** in accordance with Article 9 hereof. If the **Engineer** failed to provide these changes as an option or options to the **Owner** at the stage of preliminary work or prior to the approval of the final plan of the **“Project”**, these changes will not be considered additional work and no additional compensation will be made to the **Engineer**.

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**ARTICLE 11. Ownership and Release of Documents.**

**11.1 Ownership of Documents.** Original drawings and specifications are the property of the **Engineer** however the **“Project”** is the property of the **Owner**, and the **Engineer** may not use the drawings and specifications thereof for any purpose not relating to the **“Project”** with the **Owner’s** consent. The **Owner** shall be furnished with such reproductions of drawings and specifications as the **Owner** may reasonably require. Upon completion of the work or any earlier termination of this Agreement under Article 3.4 hereof, the **Engineer** will revise drawings to reflect changes made during construction and will promptly furnish the **Owner** with one complete set of reproducible record prints. Prints shall be furnished by the **Engineer**, as an additional service, at any other time requested by **Owner**. All such reproductions shall be the property of the **Owner** who may use them without the **Engineer’s** permission for any proper purpose relating to the **“Project”**, including but not limited to

additions to or completion of the **“Project”**. Any additions or revisions by the **Owner** to a drawing signed, sealed, and dated by a registered professional **Engineer**, shall be made in accordance with the Texas **Engineering** practice Act and the Rules of the State Board of Registration for Professional **Engineers**.

All documents furnished to the **Engineer** by the **Owner** shall be delivered to the **Owner** upon completion or termination of this Agreement. The **Engineer**, at the **Engineer’s** own expense, may retain copies of such documents or any other data under this Agreement.

**11.2 Release of Documents or Information.** Release of information to the public or others regarding the **“Project”** will be accordance with the Texas Public Information Act.

**ARTICLE 12 Discounts, Rebates, Refunds.** In connection with procurement services rendered by the **Engineer**, if procurement services are required of the **Engineer** hereunder, all discounts, rebates and refunds shall accrue to the **Owner**. For some purchases, the **Engineer** may deem that payment within the discount period is not safe; and/or inspection, guarantees, or other considerations may dictate delay. In such cases, the **Engineer** shall promptly notify the **Owner** so that a course of action may be mutually agreed upon by the **Owner** and the **Engineer**.

**ARTICLE 13. Records, Accounting, Inspection.** The **Engineer** shall keep full and detailed records and accounts in a manner approved by the **Owner**. The **Engineer** shall afford the **Owner’s** authorized personnel and independent auditors, if any, full access to the work performed by the **Engineer** regarding the **“Project”** and to all of the **Engineer’s** books, records, correspondence, instructions, drawings, receipts, vouchers and other documents relating to such work under this Agreement and the **Engineer** shall preserve all such records for three (3) years after final payment. The **Engineer** shall deliver to the **Owner** upon completion of such work, a statement of the cost of such work detailed according to the accounting procedure and requirements of the **Owner**.

**ARTICLE 14. Subcontracting and Assignment.** The **Engineer** shall not assign, subcontract or transfer the **Engineer's** interest in this Agreement without the prior written consent of the **Owner**. The **Engineer** shall bind every subconsultant by written subcontract to observe all the terms of this Agreement to the extent that they may be applicable to each subconsultant. No subcontract relieves the **Engineer** of any responsibilities under this Agreement.

The **Engineer**, and the **Owner**, do hereby bind themselves, their successors, executors, administrators and assigns to each other party of this Agreement and to the successors, executors, administrators, and assigns of such other party in respect to all covenants of this contract.

**ARTICLE 15. Patents.** The **Engineer** shall indemnify and save the **Owner** harmless from all liability for alleged or actual infringement of any patent resulting from the use of apparatus or equipment furnished or designed by the **Engineer** or from the use of any process designed by the **Engineer** or effected by said apparatus or equipment, and the **Engineer** shall indemnify and save the **Owner** harmless from and against all costs, legal fees, expenses and liabilities incurred in or about any claim of or action for such infringement: provided, however, that the **Owner** shall promptly transmit to the **Engineer** all papers served on the **Owner** in any suit involving such claim of infringement, and provided further, that the **Owner** permits the **Engineer** to have entire charge and control of the defense of any such suit. If because of actual infringement the use of such apparatus, equipment, or process is enjoined, the **Engineer** shall refund the purchase price thereof in proportion to the length of service uncompleted, the life of such apparatus or equipment being assumed as five years. The **Engineer** hereby grants to the **Owner** a non-exclusive, royalty-free license under patents now or hereafter owned by the **Engineer** covering any machines, apparatus, processes, articles, or products included in the **Engineer's** work hereunder.

**ARTICLE 16. Confidential Information, Inventions and Other Restrictions.**

**16.1 Confidential Information.** The **Engineer** shall not use in any way, commercial or otherwise, except to the extent required by the proper performance of this Agreement; and shall hold in confidence and not disclose to any person, for any reason or at any time, any information relating to the secret processes, products, compositions, machinery, apparatus or trade secrets of the **Owner**, or any other confidential information given to the **Engineer** by any of the **Owner's** commissioners, elected officials, employees, or representatives or acquired by the **Engineer** during the term of or as a result of this Agreement. Any information not generally available to the public shall be considered secret and confidential for the foregoing purposes; provided, however, that any technical information which was lawfully in the **Engineer's** possession prior to such disclosure to the **Engineer** by the **Owner** or which is or shall lawfully be published or become part of general knowledge from sources other than the **Engineer** or which otherwise shall lawfully become available to the **Engineer** from a source other than the **Owner**, shall not be subject to these provisions. All the foregoing stipulations shall apply to such information and work hereunder as well as to any information and ideas originated or developed by the **Engineer** in performing such work. Such information may, of course, be disclosed to the proper officials or employees of the **Owner** if necessary to perform the work hereunder. The **Engineer** shall, however, inform each of its employees who receive such information of these restrictions and the **Engineer** shall take all reasonable precautions and exert all reasonable efforts to assure conformance with such restrictions by all of its officers, employees, and agents, obtaining from them if necessary, agreements satisfactory to the **Owner**, effectuating the purposes of this Article.

**16.2 Inventions.** The **Engineer** shall communicate to the **Owner** at once, and require the **Engineer's** employees assigned to this "**Project**" to communicate to the **Owner** all inventions and improvements which any of the **Engineer's** employees, either alone or in conjunction with any of the

**Owner's** employees may conceive, make or discover during the course of or as a result of work on this **"Project"** under this or any ensuing agreement with the **Owner** that relates to the processes, products, compositions, machinery or plants of the **Owner**, or relating in any way to any of the operations in which the **Owner** may be obligated to pay to the **Engineer** as compensation for services rendered by the **Engineer** under contract with the **Owner**. The **Engineer** shall require its employees to execute patent applications and assignments thereof to the **Owner** or its nominees, and powers of attorney relating thereto for any country the **Owner** may designate, and shall take all other actions as the **Owner** may request to maintain and protect such inventions and improvements. The **Owner** shall pay all costs or charges incurred in protecting such inventions and improvements if the **Owner** desires to protect them. Before assigning any of the **Engineer's** employees to work under any contract with the **Owner** concerning this **"Project"**, the **Engineer** shall obtain from them agreements satisfactory to **Owner** complying in all respects with the terms and provisions of this Article.

16.3 The rights and obligations set forth in Article 16 shall survive the performance of this Agreement, or any termination, discharge or cancellation thereof

#### **ARTICLE 17. Engineer's Seal, Responsibility and Warranties.**

17.1 **Engineer's Seal.** The **Engineer** shall assign a responsible **Engineer** or **Engineers** licensed to practice in the State of Texas, who shall sign, seal and date all appropriate **Engineering** submissions to the **Owner** in accordance with the Texas **Engineering** Practice Act and the Rules of the State Board of Registration for Professional **Engineers**.

17.2 **Engineer's Responsibility.** The **Engineer** shall be responsible for the accuracy of the work for the **"Project"** and shall promptly make necessary revisions or corrections resulting from errors, omissions, or negligent acts by the **Engineer**. No additional compensation will be made to the

**Engineer** for any necessary revisions or corrections resulting from errors, omissions, or negligent acts by the **Engineer**.

The **Engineer's** responsibility for all questions arising from design errors and/or omissions will be determined by the **Owner** or a designee appointed by the **Owner**. The **Engineer** will not be relieved of the responsibility for subsequent correction of any such errors or omissions or for clarification of any ambiguities until after the construction phase of the "**Project**" has been completed.

### **17.3 Warranties.**

(a) The **Engineer** warrants that **Engineering** design work performed by the **Engineer** hereunder shall be in accordance with sound **Engineering** design practices and in conformance with applicable code and standards established for such work.

(b) Notwithstanding anything to the contrary contained in this Agreement, the **Owner** and the **Engineer** agree and acknowledge that the **Owner** is entering into this Agreement in reliance on the **Engineer's** experience and abilities with respect to performing the **Engineer's** services hereunder. The **Engineer** accepts the relationship of trust and confidence established between it and the **Owner** by this Agreement. The **Engineer** covenants with the **Owner** to use the **Engineer's** best efforts, skill, judgment and abilities to design the "**Project**" and to further the interests of the **Owner** in accordance with the **Owner's** requirements and procedures, in accordance with all professional standards, and in compliance with all applicable national, federal, state, county and municipal laws, regulations, codes, ordinances, orders and with those of any other body having jurisdiction. If the development of plans, specifications and estimates (hereinafter referred to as "**PS&E**") are identified in this Agreement under Article 2 hereof or **EXHIBIT "B"**, attached hereto, as part of the services to be provided by the **Engineer** for the "**Project**", prior to the commencement of construction, the **Engineer** shall certify in writing to the **Owner** that the **PS&E** for the "**Project**", and the improvements when built in accordance

therewith, conform to all applicable governmental regulations, statutes and ordinances then in effect. The **Engineer** represents covenants and agrees that there are no obligations, commitments or impediments of any kind that will limit or prevent performance of the **Engineer's** services.

(c) The **Engineer** represents, covenants and agrees that all of **Engineer's** services to be furnished by the **Engineer** under or pursuant to this Agreement from the inception of the Agreement until the "**Project**" has been fully completed, shall be of the standard and quality which prevail among **Engineers** of similar experience, knowledge, skill and ability engaged in **Engineering** practice throughout Texas under the same or similar circumstances involving the design and construction of "**Project**".

(d) The **Engineer** represents, covenants and agrees that the **Engineer's** special talent, training and experience cause the **Engineer** to be the prime professional on the "**Project**"; that because of such talent and training, the **Engineer** envisions the construction of the "**Project**" in its entirety and possesses the special skills which enable the **Engineer** to recognize dangerous conditions that a reasonable, prudent **Engineer** having such special skills could anticipate may arise from the proper use of the "**Project**" after acceptance by **Owner**; and that the **Engineer** recognizes that any commissioners, elected officials, employees and agents of the **Owner**, plus residents and **Owners** of property within the area affected by the "**Project**" are within a class of foreseeable persons who will be relying on the "**Project**" being designed in a professional and safe manner.

(e) If the development of **PS&E** is identified in this Agreement under Article 2 hereof or **EXHIBIT "B"**, attached hereto, as part of the services to be provided by the **Engineer** for the "**Project**", the **Engineer** represents, covenants and agrees that the **PS&E** of the "**Project**" will be accurate and free from any material errors. The **Engineer** additionally represents, covenants and agrees to the following: that the design of the "**Project**" will conform to its foreseeable use as a "**Project**" with

all the amenities as set forth in any **PS&E** developed by the **Engineer** for the "**Project**"; that the result of such **PS&E**, if built in accordance therewith, will be suitable for purposes for which the "**Project**" is designed; and the "**Project**" will be inspected in a workmanlike, professional manner and will be suitable for the "**Project**"'s intended purpose. The **Engineer**'s responsibilities as set forth herein shall at no time be in any way diminished by reason of any approval by the **Owner** of any **PS&E** developed by the **Engineer** for the "**Project**", nor shall the **Engineer** be released from any liability by reason of such approval by the **Owner**, it being understood that the **Owner** at all times is ultimately relying upon the **Engineer**'s skill and knowledge in preparing such **PS&E**.

(f) In connection with the **Engineer**'s performance of procurement services hereunder, if any, the **Engineer** use its best efforts to obtain from all vendors of equipment and materials, fullest possible warranties against defective materials and workmanship for the benefit of the **Owner**.

**ARTICLE 18. Engineer's Resources.** The **Engineer** shall furnish and maintain, at the **Engineer**'s own expense, office space for the performance of all services, skilled and sufficient personnel, as well as adequate and sufficient equipment to perform the services as required under this Agreement.

**18.1 "Project" Manager.** The **Engineer** shall provide a manager ("**Project**" **Manager**) for the "**Project**" that is a registered professional **Engineer** in the State of Texas. The "**Project**" manager shall have such knowledge and experience as will enable that "**Project**" **Manager** during the course of the "**Project**" without prior consent of the **Owner**. If, due to situations beyond the control of the **Engineer**, the **Engineer** must change the "**Project**" **Manager** prior to the completion and acceptance of the "**Project**", the **Engineer** will submit a request to change the "**Project**" **Manager** to the **Owner** for approval.

**18.2 Employees of the Engineer.** All employees of the **Engineer** shall have such knowledge and experience as will enable them to perform the duties assigned to them and required for the services under this Agreement. Any employee of the **Engineer** who, in the opinion of the **Owner**, is incompetent, or whose conduct becomes detrimental to the work required under this Agreement, shall immediately be removed from association with the **“Project”** when so instructed by the **Owner**. The **Engineer** certifies that the **Engineer** presently has employed sufficient and qualified personnel, and will maintain sufficient and qualified personnel for performance of the services under this Agreement.

**18.3 Documents/Information Exchange** The purpose of this Article is to define the required automated resources, format for graphics files, and information exchange pertaining to the **“Project”**. Taking into consideration that the **Owner** has a significant investment in the development of the **“Project”**, there is a need for the **Engineer** to provide consistency in document development for information exchange. Consistency in document development for information exchange and production will help facilitate an economically efficient **“Project”**. Therefore, the **Engineer** shall provide the **Owner** with documents and information in accordance with the special requirement outlined in **EXHIBIT “B”** attached hereto.

**ARTICLE 19. Indemnification.** To the fullest extent permitted by applicable law, the **Engineer** and its agents, partners, subcontractors, and consultants (collectively **“Indemnitors”**) shall and do agree to indemnify, and hold harmless the **Owner**, the **Owner’s** respective directors, elected officials, employees and agents (collectively **“Indemnitees”**) from and against all claims, damages, losses, liens, causes of action, suits, judgments and expenses, including attorney fees, of any nature, kind or description (collectively **“Liabilities”**) of any person or entity whomsoever arising out of, caused by or resulting from the negligent performance of the **Engineer’s** services through activities of the **Engineer**, its agents, partners, subcontractors and/or consultants performed under this Agreement, and

which are caused by or result from error, omission, or negligent act of the **Engineer** or of any person employed or contracted by the **Engineer** provided that any such **Liabilities** (1) are attributable to bodily injury, personal injury, sickness, disease or death of any person, or to the injury to or destruction of tangible personal property including the loss of use and consequential damages resulting there from and (2) are caused in whole or in part by any negligent act or omission of the **Engineer**, anyone directly or indirectly employed by the **Engineer** or anyone for whose acts the **Engineer** may be legally liable. The **Engineer** shall also save harmless the **Owner** from any and all expense, including but not limited to, attorney fees which may be incurred by the **Owner** in litigation or otherwise resisting said claim or liabilities which may be imposed on the **Owner** as a result of such activities by the **Engineer**, its agents partners, subcontractors and/or consultants. In this connection, it is agreed and understood that the **Engineer** shall not be responsible for any portion of the liability proximately caused by the **Owner's** negligence.

**ARTICLE 20. Joint and Several Liability.** In the event more than one of the **Indemnitors** are connected with an accident or occurrence covered by the indemnification in Article 19 hereof, then each of such **Indemnitors** shall be jointly and severally responsible to the **Indemnitees** for indemnification and the ultimate responsibility among such **Indemnitors** for the loss and expense of any such indemnification shall be settled by separate proceedings and without jeopardy to any **Indemnitee**. The provisions of this Article shall not be construed to eliminate or reduce any other indemnification or right which the **Owner** or any of the **Indemnitees** has by law.

**ARTICLE 21. Insurance.** The **Engineer** shall obtain and maintain insurance in the limits of liability for each of the types of insurance coverage identified as follows.

- (1) **Workers' Compensation**, endorsed with a waiver of subrogation in favor of the **Owner** in accordance with the statutory obligations imposed by Worker's

Compensation or Occupational Disease laws under the Texas Workers' Compensation Law ("Statutory Texas")

- (2) **Commercial General Liability**, endorsed with the **Owner** as an additional insured and endorsed with a waiver of subrogation in favor of the **Owner** *all to the extent of the liabilities assumed by the Engineer under Article 19 and Article 20* herein, in limits of liability not less than one million dollars (**\$1,000,000**) combined single limit each occurrence and in the aggregate for bodily injury and property damage.
- (3) **Texas Business Automobile Policy**, endorsed with the **Owner** as an additional insured and endorsed with a waiver of subrogation in favor of the **Owner** *all to the extent of the liabilities assumed by the Engineer under Article 19 and Article 20 herein*, in limits of liability not less than two hundred fifty thousand dollars (**\$250,000**) each person for bodily injury, five hundred thousand dollars (**\$500,000**) each occurrence for bodily injury, and one hundred thousand dollars (**\$100,000**) each occurrence for property damage.
- (4) **Professional Liability** in limits of **\$1,000,000** each claim and aggregate.

The **Engineer** covenants and agrees to maintain an insurance policy in the minimum limits of liability for each of the types of insurance coverage identified above. The **Engineer** shall furnish the **Owner** with a certificate of insurance showing the said policy to be in full force and effect during the period of service, identified in Article 3 hereto, for this Agreement. The Certificate of Insurance shall be attached hereto and identified as **EXHIBIT "G"**- *Certificate of Insurance*. The **Engineer** will be considered in breach of contract should the **Engineer** fail to maintain an insurance policy in the minimum limits of liability and requirements identified above while performing services for and under this Agreement, and will be subject to default and termination of the Agreement as outlined in Article

3.4 hereto. Additionally, the **Engineer** covenants and agrees to use its best efforts to maintain an insurance policy in the minimum limits of liability and requirements identified above until one year following the date of the acceptance of the “**Project**” by **Owner**.

**ARTICLE 22. Compliance with Laws.** The **Engineer** shall comply with all applicable Federal, State and local laws, statutes, codes, ordinances, rules and regulations and the orders and decrees of any court, or administrative bodies or tribunals in any manner affecting the performance of this Agreement including, without limitation, worker’s compensation laws, minimum and maximum salary and wage statutes and regulations and licensing laws and regulations. When required the **Engineer** shall furnish the **Owner** with satisfactory proof of its compliance therewith.

**ARTICLE 23. Non-collusion.** The **Engineer** warrants that the **Engineer** has not employed or retained any company or persons, other than a bona fide employee working solely for the **Engineer**, to solicit or secure this Agreement, and that the **Engineer** has not paid or agreed to pay any company, **Engineer** or any other person or entity any fee, commission, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the award or execution of this Agreement. For breach or violation of this warranty the **Owner** shall have the right to annul this Agreement without liability or, in the **Owner’s** discretion, to deduct from the *Services Fee*, or otherwise recover, the full amount of each fee, commission, percentage, brokerage fee, gift or contingent fee.

**ARTICLE 24. Gratuities.** The **Owner** mandates that employees of the **Owner** shall not accept any benefits, gifts or favors from any person doing business or who reasonably speaking may do business with the **Owner** under this Agreement; the only exceptions allowed are ordinary business meals. Any person doing business with or who may reasonably seeking to do business with the **Owner** under this Agreement may not make any offer of benefits, gifts or favors to **Owner** employees, except

as mentioned herein above. Failure on the part of the **Engineer** to adhere to this provision may result in the termination of this Agreement.

**ARTICLE 25. Payment of Franchise Tax.** The **Engineer** hereby certifies that the **Engineer** is not delinquent in Texas franchise tax payments, or that the **Engineer** is exempt from, or not subject to, such as tax. A false statement concerning corporation's franchise tax status shall constitute grounds for termination of the Agreement at the sole option of the **Owner**.

**ARTICLE 26. Disputes.** The **Engineer** shall be responsible for the settlement of all contractual and administrative issues arising out of any procurement made by the **Engineer** in support of the services under this Agreement.

**ARTICLE 27. Severability.** In the event any one or more of the provisions contained in this Agreement shall for any reason, be held to be invalid, illegal, or unenforceable in any respect such invalidity, illegality or unenforceability shall not affect any other provision thereof and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein .

**ARTICLE 28. Notices.** All notices to either party by the other required under this Agreement shall be personally delivered or mailed to such party at the following respective addresses:

<b>OWNER:</b>	<b>Hidalgo County Drainage District No. 1</b>	<b>ENGINEER:</b>	<b>L&amp;G Engineering</b>
	<b>Attn: District Manager</b>		<b>Attn: Jacinto Garza</b>
	<b>902 N. Doolittle Rd</b>		<b>2100 W. Expressway 83</b>
	<b>Edinburg, TX 78542</b>		<b>Mercedes, Tx. 78570</b>

The Address may be changed by either party by written notice and notice so mailed shall be effective upon mailing.

**ARTICLE 29. Miscellaneous Provisions.**

(a) This Agreement constitutes the entire Agreement between the **Engineer** and the **Owner** relating to the work herein described and supersedes any prior understanding or written or oral

contracts between the parties respecting the subject matter defined herein. These are no previous or contemporary representations or warranties of the **Owner** or the **Engineer** not set forth herein.

(b) Except as specifically provided herein no modification, waiver, termination, rescission, discharge or cancellation of this Agreement or of any terms thereof shall be binding on the **Owner** unless in writing and executed by an officer or employee of the **Owner** specifically authorized to do so.

(c) No waiver of any provision of or a default under this Agreement shall affect the right of the **Owner** thereafter to enforce said provision or to exercise any right or remedy in the event of any other default whether or not similar.

(d) No modification, waiver, termination, discharge or cancellation of this Agreement or of any terms thereof shall impair the **Owner's** right with respect to any liabilities whether or not liquidated of the **Engineer** to the **Owner** theretofore accrued.

(e) All rights and remedies of the **Owner** specified in this Agreement are in addition to the **Owner's** other rights and remedies.

(f) The **Engineer** shall remain an independent contractor and shall have no power nor shall the **Engineer** represent that the **Engineer** has any power to bind the **Owner** or to assume or to create any obligation express or implied on behalf of the **Owner** except as specifically authorized in advance by the **Owner**.

(g) The Agreement shall be construed under the laws of the State of Texas and is performable in Hidalgo County, Texas.


(h) This Agreement may only be amended by a written document executed by the **Owner** and the **Engineer** as provided by Article 8 herein.

**ARTICLE 30. Signatory Warranty** The undersigned signatory or signatories for the **Engineer** hereby represent and warrant that the signatory is an officer of the organization for which he or she has executed this Agreement and that he or she has full and complete authority to enter into this Agreement on behalf of the **Engineer**. The above-stated representations and warranties are made for the purpose of inducing the **Owner** to enter into this Agreement.

WITNESS WHEREOF, the **Engineer** and the **Owner** have caused this **Agreement for Professional Engineering Services** to be effective as of the \_\_\_\_ day of \_\_\_\_\_, 2013.

**ENGINEER:**

**BY:**

  
\_\_\_\_\_  
Mr. Jacinto Garza, P.E.  
President – L&G Engineering

**OWNER:**

**HIDALGO COUNTY DRAINAGE DISTRICT NO. 1**

**BY:**

\_\_\_\_\_  
Ramon Garcia, Chairman of the Board  
Hidalgo County Drainage District No. 1

APPROVED AS TO FORM:  
ATLAS, HALL & RODRIGUEZ, LLP

By: \_\_\_\_\_

**EXHIBIT "A"**  
**Services to be provided by the Owner**

The following provides an outline of the services to be provided by the **OWNER** in the development of the "**Project**".

The **OWNER** will provide to the **ENGINEER** the following:

- (1) Authorization to the **ENGINEER** to begin work in accordance with Section 3 of this Agreement.
- (2) Payment for work performed by the **ENGINEER**, and accepted by the **OWNER** in accordance with Section 6 of the Agreement.
- (3) Assistance to the **ENGINEER**, as necessary, to obtain the required data and information from other local, regional, State and Federal agencies that the **ENGINEER** cannot easily obtain.
- (4) Provide any available relevant data the **OWNER** may have on file concerning the "**Project**".
- (5) Provide timely review and decisions in response to the **ENGINEER'S** request for information and/or required submittals and deliverables, in order for the **ENGINEER** to maintain the agreed-upon work schedule.
- (6) Attend and participate in progress meetings as required and as coordinated and conducted by the **ENGINEER**.
- (7) Assist the **ENGINEER** in the preparation of the "**Project**" mailing list; provide representation, a site and stenographer for all public meetings; additionally:

*Public Meetings*

- (a) Approve agenda and all exhibits prior to public meeting;
  - (b) Approve date and location of the meeting; and
  - (c) Review/approve Public Meeting Report
- (8) Attend the Preliminary Concept Conference coordinated and conducted by the **ENGINEER**.
  - (9) Review and approve the "**Project**" design criteria.
  - (10) Review and approve change orders as required and prepared by the **ENGINEER**.

**Exhibit "B"**  
**Services to be Provided by the Engineer**

INDEX

CLASSIFICATION OF SERVICES ( <i>Basic</i> or <i>Special</i> )	2 - 3
EXPANDED DESCRIPTION OF SERVICES:	3 -19

**I. ENGINEERING MANAGEMENT (EM)**

<b>(A) Preliminary Project Planning &amp; Development</b>	4	(1)"Design Policy & Procedures Manual"	6
(1) Project Development Schedule	4	(2) Design Concept Conference	7
(2) Construction Estimate	4	(3) Management/Coordination of Engr. Activities	7
(3) Quality Control/Quality Assurance Program	4	(4) Implementation of QC/QA Program	7
(4) Subcontract Administration	4		
(5) Funding Sources	4	<b>(D) Construction Mgt.</b>	7
(6) Capital Improvement Program	5	(1) " <i>Construction Management Policy &amp; Procedures Manual</i> "	7
(7) Management/Coordination of Engr. Activities	5	(2) Construction Bidding	7
(8) Implementation of QC/QA Program	5	(3) Owner's Representative	8
		(4) Defects and Deficiencies	8
<b>(B) Preliminary Engineering</b>	5	(5) Progress Reports	8
(1) Preliminary Concept Conference	5	(6) Contractor Payment	8
(2) Management/Coordination of Engr. Activities	5	(7) Project Site Management	8
(3) Implementation of QC/QA Program	6	(8) Implementation of QC/QA Program	9
(4) Preparation of " <i>Preliminary Engineering Report</i> "	6	(9) Change Orders	9
(5) Coordination with all Reviewing Agencies	6	(10) Final Acceptance	9
<b>(C) Final Design</b>	6		

**II. PRELIMINARY PROJECT PLANNING & DEVELOPMENT**

(1) Environmental Document Preparation & Public Involvement (if required by Federal Agencies)	10	(3) Water Resource Management Planning	11
(2) Field Surveying & Photogrammetry (if not provided by Owner)	11	(4) Water Rights Attorney	11

**III. PRELIMINARY ENGINEERING, DESIGN AND CONSTRUCTION**

<b>(A) Preliminary Engineering</b>	12	<b>(B) Final Design</b>	15
(1) Preliminary Field Surveying	12	(1) Right-of-Way Data	15
(2) Data Collection	12	(2) Design Field Surveying	16
(3) Geographical Information System	13	(3) Geotechnical Investigations	16
(4) Hydrologic Analysis	13	(4) Permitting	16
(5) Hydraulic Analysis	14	(5) Channel / Drainage Design	16
(6) Flood Plain Mapping	14	(6) Roadway Design	16
(7) Alternate Solutions & Recommendations	14	(7) Bridge Design	16
(8) Final Report – " <b>Preliminary Engineering Report</b> "	15	(8) Plans, Specifications, and Estimates (PS&E)	17
		<b>(C) Construction</b>	17
		(1) Construction Bidding Documents	17
		(2) Project Site Representation	18
		(3) Miscellaneous Technical Activities	18
		(4) Final Acceptance	19

**CLASSIFICATION OF SERVICES.** In accordance with Article 2.2 of this Agreement, the services to be provided by the Engineer shall be classified as either **Basic Services** or **Special Services**. The expanded descriptions of the services identified later in this exhibit and to be provided by the **Engineer** are classified as follows:

**Management:**

**I. ENGINEERING MANAGEMENT (EM)**

**(A) Preliminary Project Planning and Development**

- (1) Project Development Schedule **Basic**
- (2) Construction Estimate **Basic**
- (3) Quality Control / Quality Assurance Program **Basic**
- (4) Subcontract Administration **Special**
- (5) Funding Liaison and Funding Application Preparation **Special**
- (6) Capital Improvement Program (CIP) **Special**
- (7) Management / Coordination of Engineering Activities **Special**
- (8) Implementation of QC/QA Program **Basic**

**(B) Preliminary Engineering**

- (1) Preliminary Concept Conference **Basic**
- (2) Management / Coordination of Engineering Activities **Basic**
- (3) Implementation of QC/QA Program **Basic**
- (4) Preparation of "**Preliminary Engineering Report**" **Special**
- (5) Coordination with all reviewing agencies (FEMA, USACE, etc.) **Special**

**(C) Final Design**

- (1) "**Design Policy & Procedures Manual**" **Special**
- (2) Design Concept Conference **Basic**
- (3) Management / Coordination of Engineering Activities **Basic**
- (4) Implementation of QC/QA Program **Basic**

**(D) Construction Management**

- (1) "**Construction Management Policy & Procedures Manual**" **Special**
- (2) Construction Bidding **Basic**
- (3) Owner's Representative **Basic**
- (4) Defects and Deficiencies **Basic**
- (5) Monthly Construction Progress Reports **Basic**
- (6) Recommendations for Payment to the Construction Contractor **Basic**
- (7) Project Site Management **Special**
- (8) Implementation of QC/QA Program **Basic**
- (9) Change Orders **Special**
- (10) Final Acceptance, Performance Testing, Shop Drawing Review **Special**

**Engineering:**

**II. PRELIMINARY PROJECT PLANNING & DEVELOPMENT**

- (1) Environmental Document Preparation & Public Involvement (if required  
By Federal agencies) **Special**
- (2) Field Surveying & Photogrammetry (if not provided by Owner) **Special**
- (3) Water Resource Management Planning **Special**
- (4) Water Rights Attorney **Special**

*Engineering:*

**III. PRELIMINARY ENGINEERING, FINAL DESIGN & CONSTRUCTION**

**(A) Preliminary Engineering:**

	<b>Provided by Owner</b>
(1) Preliminary Field Surveying (using Lidar/ provided by Owner)	<b>Special</b>
(2) Data Collection	<b>Special</b>
(3) Geographical Information System	<b>Special</b>
(4) Hydrologic Analysis	<b>Special</b>
(5) Hydraulic. Analysis	<b>Special</b>
(6) Flood Plain Mapping	<b>Special</b>
(7) Alternate Solutions /Recommendations for Final Design	<b>Special</b>
(8) Final Report — " <i>Preliminary Engineering Report</i> "	<b>Special</b>

**(B) Final Design:**

(1) Right-of-Way Data and ROW Map	<b>Special</b>
(2) Design Field Surveying	<b>Special</b>
(3) Geotechnical Investigations and Reports	<b>Special</b>
(4) Permitting	<b>Basic</b>
(5) Channel / Drainage Design	<b>Basic</b>
(6) Roadway Design	<b>Basic</b>
(7) Bridge Design	<b>Basic</b>
(8) Plans, Specifications & Estimates	<b>Basic</b>

**(C) Construction:**

(1) Construction Bidding Documents	<b>Basic</b>
(2) Project Site Representation:	<b>Special</b>
a. Engineering Support Data for Defects & Deficiencies	<b>Special</b>
b. Daily and Weekly Construction Reports	<b>Special</b>
c. Measurement / Calculations for Contractor Payment	<b>Special</b>
d.-Project-Engineerl-Resident Engineer Services	<b>Special</b>
(3) Miscellaneous Technical Activities:	
a. Construction Field Surveying	<b>Special</b>
b. Shop Drawing Review	<b>Basic</b>
c, Control of Materials & Equipment	<b>Special</b>
d. Change Orders	<b>Basic</b>
(4) Final Acceptance:	
a. Performance Testing	<b>Special</b>
b. As-Built Drawings	<b>Basic</b>

**EXPANDED DESCRIPTIONS OF SERVICES.** The expanded descriptions of the services to be provided by the Engineer are described on the following pages.

## I. ENGINEERING MANAGEMENT (EM)

The following outline provides a summary for the **basic** and **special services** to be provided by the Engineer under services of this Agreement. The contractual services will be outlined in each Work Authorization as outlined in Article 7.

For these services, the **Engineer** shall manage the **Project Team**, consisting of various sub-providers, in the development of the **Project** as defined and more particularly described in **EXHIBIT "B1"** attached to this Agreement. The services will include the following:

- (A) **Preliminary Project Planning and Development:** In general, this will include the *management* of the preliminary planning process and advance project development (APD) that is required for the **Project**. (A summary of specific requirements for *engineering* activities are outlined later in this exhibit.) The **Engineer** will identify, coordinate, and implement the *management* requirements for preliminary planning and advance Project development for the **Project**. Specific work activities to be provided by the **Engineer** will include:
- (1) **Project Development Schedule:** The **Engineer** will prepare a **Project Development Schedule**. This schedule will be developed from the notice to proceed with work through final record drawings. The schedule will be monitored, by the **Engineer**, throughout **Project** development. It will be provided, as well as any updates, to the Owner and each **Project Team** member as a part of the **Work Plan** identified in (1). The schedule will identify all major milestones and **Project** deliverables. The **Engineer** will inform the **Owner** (in reasonable advance of the delay) should the **Engineer** encounter delays that would prevent the performance of all work in accordance with the established schedule.
  - (2) **Construction Estimate:** The **Engineer** shall prepare a preliminary estimate for the construction of the **Project**. The preliminary construction estimate shall be monitored, verified and updated throughout the course of **Project** development.
  - (3) **Quality Control / Quality Assurance (QC/QA) Program:** The **Engineer** shall develop a quality control and quality assurance program for the **Project** to ensure the **Project Team** is producing quality work for the **Project**.
  - (4) **Subcontract Administration:** The **Engineer** shall initiate, execute and monitor all subcontracts for the duration of the **Project**. The **Engineer** shall advise and/or provide recommendations to the **Owner**, as the **Project** progresses, should additional sub-providers be required. All subcontracting and assignment will be in accordance with Article 14.
  - (5) **Funding Sources:** If approved by the **Owner** as *Special Services*, as outlined in Article 5.2, the development and construction of the **Project** may be eligible for funding from outside sources, If approved by the **Owner** as *Special Services*, the **Engineer's** responsibilities regarding funding sources will include the following:
    - A. **Liaison (Engineer)** will act as Corporate Sponsor for obtaining funding from potential funding sources for the **Project**. The Corporate Sponsor will act as liaison for the Owner to applicable State and Federal resource agencies for possible funding assistance.

## I. Engineering Management (EM) (cont.)

B. The **Engineer** will identify and develop a list of possible funding sources for the **Project**.

C. The **Engineer** will prepare all required applications to funding sources.

(6) **Capital Improvement Program (CIP):** If approved by the **Owner** as *Special Services*, as outlined in Article 5.2, the **Engineer** will prepare a CIP based on a conceptual sequence of construction for the **Project** as identified in the final recommendations shown in the "*Preliminary Engineering Report*" developed by the **Engineer** under the preliminary engineering activities identified later in this exhibit. The primary focus will be to address the overall needs of the system, the funding availability, the identification of operational issues, the acquisition of right of way, and Hidalgo County / L&G Engineering, and the prioritization of those needs and issues in a cost effective and efficient manner (conducive of funding availability). The CIP will be continuously monitored and updated by the **Engineer** throughout **Project** development.

(7) **Management/Coordination of Engineering Activities:** The **Engineer** shall *manage* and *coordinate* the specific *engineering* work activities, tasks, special services for Environmental Document Preparation (if required by Federal agencies), Public Involvement, and Field/Reconn/Surveying and Photogrammetry (more particularly identified later in this exhibit under II - Preliminary Project Planning and Development).

(8) **Implement QC/QA Program:** The **Engineer** will monitor and perform the program developed to ensure the quality of the Environmental Document (if required by Federal agencies), public involvement procedures, and the products and data from field/recon/surveying and aerial photogrammetry, and their compliance with applicable standards and requirements.

(B) **Preliminary Engineering.** The **Engineer** will ultimately deliver the final recommendations for the design of the project in the "*Preliminary Engineering Report*". (Specific requirements for *engineering* activities are outlined later in this exhibit under II - Preliminary Engineering, Design and Construction.) The **Engineer** shall *manage* and *coordinate* the activities of the **Project Team** in the collection of geographical information and *engineering* data, the selection of computer software, and the distribution of Project information and status to the **Owner** and **Project Team** throughout the development of the "*Preliminary Engineering Report*". Specific *management* tasks to be provided by the **Engineer** will include:

(1) **Preliminary Concept Conference:** The **Engineer** will coordinate and conduct a preliminary concept conference (PCC) with the **Owner**, and, any other, stakeholders approved by the Owner. At the PCC, the Engineer will outline the issues and aspects involved in the development of the "*Preliminary Engineering Report*", identify existing conditions and design requirements, and present the approach to the development of the report for approval by the **Owner**.

(2) **Management/Coordination of Engineering Activities:** The **Engineer** shall *manage* and *coordinate* the **Project Team** in the preparation of specific *engineering* work activities, tasks, special services for the final development of the "*Preliminary Engineering Report*", including Field Surveying, Data Collection, the development

## I. Engineering Management (EM) (cont.)

of a Geographical Information System, Hydrologic/Hydraulic Analysis, Flood Plain Mapping, Alternate Solutions, and Final Recommendations (more particularly defined with the **engineering** activities identified in this exhibit under II - Preliminary Engineering, Design and Construction (Preliminary Engineering)).

- (3) **Implement QC/QA Program.** The **Engineer** will monitor and perform the QC/QA program developed to ensure the quality of the "**Preliminary Engineering Report**", and its compliance with standards of sound **engineering** principles and the agreed-upon design criteria established at the PCC.
  - (4) **Final Report: "Preliminary Engineering Report".** The **Engineer** will provide, to the **Owner**, five (5) bound, color copies of the "**Preliminary Engineering Report**", including all attachments, exhibits, preliminary layouts, sketches, profiles, and cost estimate.
  - (5) **Coordination with various agencies:** The development of the "**Preliminary Engineering Report**" may require documentation and/or coordination with various agencies. The **Engineer** will act as a liaison for the **Owner**, and will attend any meetings, and develop / prepare any required correspondence, documentation, and/or applications to satisfy the applicable Federal, State, and local regulations.
- (C) **Final Design.** After the **Owner** has approved the **Engineer's** final recommendations as shown in the "**Preliminary Engineering Report**" and the recommendations meet all Federal, State, and County permitting requirements, the **Engineer**, will coordinate the activities of the **Project Team** during the final design of the **Project** by developing and preparing all policies and procedures, managing the sub-providers activities and performance, and performing quality control and quality assurance for all design documents associated with the **Project**. One of the primary deliverables for the **Engineer** to provide the **Owner** is a complete and approved set of plans, specifications, and estimate (PS&E) for each phase of construction of the **Project**. Specific **management** work activities to be provided by the **Engineer** will include:
- (1) "**Design Policy & Procedures Manual**": The **Owner** will provide a policy and procedures manual for final design to be used by the **Project Team** in the development of the **Project**. The purpose of this will be to set policy with regards to the approved design criteria, and to provide consistency in the development of the documents for design, plans, specifications and estimates. Once the manual has been provided by the **Owner** it will be distributed by the **Engineer** to each member of the **Project Team**. The **Owner** will be responsible for updating and maintaining the manual and distributing any revisions throughout **Project** development. Items to be identified in the "**Design Policy & Procedures Manual**" provided by the **Owner** will include, but not be limited to, the following:
    - (a) Project Description and Final Recommendations of the "**Preliminary Engineering Report**"
    - (b) Environmental
    - (c) Correlation and Agreement with Other Agencies
    - (d) Application of Design Standards (City, County, State, AASHTO)
    - (e) Requirements for Preliminary Submittals
    - (f) Basic Design Criteria

## I. Engineering Management (EM) (cont.)

- (g) Preparation for Plans, Specifications, and Estimate (PS&E) Submittals
  - (h) Formats for Supporting Documents
  - (i) CADD Standards
  - (j) Specifications
- (2) **Design Concept Conference (DCC):** The **Engineer** shall coordinate and conduct a design concept conference with the **Owner** and **Project Team**. At the DCC, the **Engineer** will distribute the "**Design Policy & Procedures Manual**" provided by **Owner** and discuss the **Project** Development Schedule with the **Project Team**.
- (3) **Management/Coordination of Engineering Activities:** The **Engineer** shall *manage* and coordinate the **Project Team** in the development of the documents for final design, including: Right of Way Data, Design Field Surveying, Geotechnical Investigations, Permitting, Channel/Drainage Design, Roadway Design, Bridge Design, PS&E, and other miscellaneous design and plan preparation items (more particularly defined with the engineering activities identified in this exhibit under 11—Preliminary Engineering, Design and Construction (**Final Design**)).
- (4) **Implement QC/QA Program:** The **Engineer** shall monitor and perform the QC/QA. Program **developed** to ensure the quality of the documents associated with Right of Way Data (Mapping), Design Field Surveying, Geotechnical Investigations, Permitting, Channel/Drainage Design, Roadway Design, Bridge Design, PS&E, and other miscellaneous design and plan preparation items (more particularly defined with the *engineering* activities identified in this exhibit under II — Preliminary Engineering, Design and Construction (Final Design Engineering)). These designs shall in all respects combine the application of sound *engineering* principles with a high degree of economy and shall be submitted to the applicable City, County, State, and/or Federal agencies for approval.
- (D) **Construction Management:** The **Engineer** shall provide construction *management* services for each authorized construction contract of the **Project**. The **Engineer** shall also assist the **Owner** in the advertisement for construction bids, the opening and tabulation of the bids, provide a recommendation as to the proper action on all bid proposals received, and assist in the preparation of formal contract documents for the award of contracts. Specific *management* work activities to be provided by the Engineer will include:
- (1) "**Construction Management Policy & Procedures Manual**": The **Owner** will provide a manual that outlines the policy and procedures for the *management* and administration of construction of the **Project**. The manual's information will include, but not be limited to, construction contract recordkeeping (daily reports, weekly reports, monthly progress reports, etc.), contractor payment, change order format and procedures, site inspection, scheduling, and final inspection.
  - (2) **Construction Bidding Documents:** The **Engineer** shall perform the following in preparation of the construction bidding documents: -
    - (a) Upon completion of QC/QA, the Engineer shall furnish to the **Owner** all necessary copies of approved plans, specifications, **Engineer's** estimate, notices to bidders, and proposals for each authorized construction contract.

## I. Engineering Management (EM) (cont.)

- (b) The **Engineer** shall assist the **Owner** in advertising for each authorized construction contract for the **Project**.
  - (c) The **Engineer** shall assist the **Owner** in the opening and tabulation of bids for each authorized construction for the **Project**, and recommend to the **Owner** as to the proper action on all bid proposals received.
  - (d) The **Engineer** shall assist the **Owner** in the preparation of formal contract documents for the award of construction contracts.
- (3) **Owner's Representative:** In general, the Engineer shall provide the *management* activities required for consultation and advisement to the **Owner** during construction, and act as the **Owner's** representative as provided in the General Conditions of the Construction Contract. The extent and limitations of the duties, responsibilities and the authority of the **Engineer** as assigned in the General Conditions of the Contract shall not be modified, except as the **Engineer** may otherwise agree in writing.
- (4) **Defects and Deficiencies.** In providing the *management and administration* of the authorized construction contract, the **Engineer** shall use the **Engineer's** best efforts to protect the **Owner** against defects and deficiencies in the work of the construction contractor, hereinafter called the "**Contractor**". The **Engineer** does not guarantee the performance of the **Contractor**; however, the **Engineer** will promptly notify the **Owner** of any such defect or deficiency, and take all steps possible to require the **Contractor** to correct the defect.
- (5) **Progress Reports:** The **Engineer** will obtain the daily and weekly reports provided from the *engineering* activities identified under II - Preliminary Engineering, Design, and Construction (**Construction**) in this exhibit and prepare a monthly progress report, which outlines the construction progress in a form and manner satisfactory to the Owner.
- (6) **Contractor Payment:** The **Engineer** shall obtain the measurements and calculated quantities prepared under the *engineering* activities identified under II - Preliminary Engineering, Design, and Construction (**Construction**) in this exhibit, and review and approve the monthly and final estimates for payments to the **Contractor** for those items of work accepted and conforming to the construction contract specifications. The **Engineer** will furnish to the **Owner** any necessary certifications as to payments to the **Contractor** and suppliers. *Note: The Engineer is not responsible for actual payments to the Contractor.*
- (7) **Project Site Management:** The **Engineer** will coordinate and monitor the **Project** site representation of the authorized construction contract by providing the following special services, if authorized by **Owner**:

**Project Manager.** The **Engineer** will provide visits by the **Project Manager** or a competent representative of the **Engineer** to the site of construction at least twice a month for the purpose of monitoring the **Contractor's** progress and conformance to the construction contract plans and specifications. In the capacity of site inspection, the **Engineer** will issue instructions from the **Owner** to the **Contractor** and the **Resident Engineering Representative**, issuing necessary interpretations and clarifications of

## I. Engineering Management (EM) (cont.)

construction contract documents, and make recommendations to the Owner as to the acceptability of the **Contractor's** progress and work.

- (8) **Implement QC/QA Program:** The **Engineer** will monitor and perform the QC/QA program developed to ensure the quality of the *engineering* services and documents associated with Field Surveying, Shop Drawings, Control of Materials & Equipment, Change Orders, Performance Testing, and As-Built Drawings, more particularly identified under II - Preliminary Engineering, Design, and Construction (**Construction**) in this exhibit. These services shall in all respects combine the application of sound *engineering* principles with a high degree of economy and shall be submitted to the applicable City, County, State, Federal agencies for approval.
- (9) **Change Orders:** When applicable, the **Engineer** will review and provide recommendations for all change orders developed under Ti - Preliminary Engineering, Design, and Construction (**Construction**) in this exhibit for purpose of preparing construction contract change orders. These change orders may be required due to actual field conditions encountered or new requirements directed by the **Owner**. The **Engineer** will prepare, explain, and submit proposed change orders, when applicable.
- (10) **Final Acceptance:** Following the completion of construction by the **Contractor**, the **Engineer** will provide the services required for the final inspection and recommendation for **Project** acceptance. This will include coordinating the activities required for the inspection for conformance and recordkeeping of the necessary performance tests required by the construction contract specifications. The **Engineer** will also review and approve all as-built drawings (to show the work as actually constructed), and furnish to the **Owner** one set of prints of the as-built drawings.

Note: Services to be provided by the **Engineer** for Items II and III primarily involve the engineering work tasks for the Project.

## II. PRELIMINARY PROJECT PLANNING & DEVELOPMENT

In general, this will include all **engineering** activities required for the **Advance Project Development**. Primarily, this will involve the research and coordination for the social, economic and environmental impacts, public involvement and preliminary field/reconn/surveying / aerial photography of the **Project**. A summary of the **engineering** activities to be provided by the **Engineer** are listed below. The actual contractual services will be identified in each work authorization as outlined in Article 7.

(1) **Environmental Document Preparation and Public Involvement** *(if required by Federal/State agencies)*

- (a) The **Engineer** shall prepare an environmental document in accordance with the National Environmental Policy Act (NEPA) and the applicable Code(s) of Federal Regulations. The **Engineer** will prepare an environmental document in anticipation of a **Finding of No Significant Impact (FONSI)**, as identified by the NEPA process. This document will include, at a minimum, the following:
  - (i) **Project** description
  - (ii) Need for **project**
  - (iii) Alternatives considered
  - (iv) Impacts (socioeconomic, cultural resource, water resource, air quality, noise quality, biological, prime/unique farmland, construction impacts, hazardous materials)
  - (v) Conclusion
  - (vi) **Project** location map
  - (vii) Preliminary structure and channel locations/layouts
  - (viii) Scanned photographs
- (b) The **Engineer** shall conduct and coordinate all public involvement in accordance with the National Environmental Policy Act (NEPA) and the applicable Code(s) of Federal Regulations.
- (c) The **Engineer** shall coordinate with all resource agencies, government entities, and private landowners involved or impacted in the development of the **Project**. This will include individual meetings, newsletters and notices, as required.
- (d) The **Engineer** shall coordinate and conduct the following public meetings/hearings:
  - (i) Public Meetings — These meetings will be scheduled to present the **Project** concept, including preliminary layouts and requirements for the **Project**, for the purpose of obtaining preliminary public comment.
  - (ii) Public Hearing — After completion / preliminary approval of the environmental document and applicable approval to move the **Project** forward for further processing, a public hearing will be afforded and/or conducted to present the approved draft environmental document and the **Project** layout (schematic) for the purpose of obtaining final public comment.
- (e) The **Engineer** shall develop a **Project** coordination and mailing list.

## II. Preliminary Project Planning & Development (cont.)

- (f) The **Engineer** shall prepare required presentation materials (including handouts, agenda, and sign-in roster) and exhibits for public meetings and a public hearing.
- (g) The **Engineer** shall prepare and submit a written document summarizing each proceeding: Public Meeting Reports and Public Hearing Report.

### (2) **Field Surveying and Photogrammetry (if not provided by Owner)**

- (a) **Right of Entry:** It will be the responsibility of the **Engineer** to secure written permission to enter private property for purposes of recon/survey, environmental and engineering investigations. The **Engineer** will, at times, contact the owner prior to any entry onto the owner's property. The property owner will be informed, by the **Engineer**, the name of the primary person of contact during each entry.
- (b) For the purpose of schematic development, including a geographical information system of the **Project**, a base map background will be provided to the **Engineer** through the **Owner**.
- (c) The **Owner** shall provide primary **Project** control for field surveying by establishing horizontal and vertical control points, and the **Engineer** shall establish secondary **Project** control to tie ground control to the State Plane Coordinate System.
- (d) The **Engineer** shall obtain the following photogrammetric products:
  - (i) Contact Prints and Mosaics
  - (ii) Planimetric maps
  - (iii) Contour maps
  - (iv) Cross Sections
  - (v) Digital Terrain Model (DTM)

### (3) **Water Resource Management Planning**

The Engineer shall provide water resources management planning to include identification of development opportunities, formulating alternative plans, evaluation and optimization of plans. Multiple users, multiple purposes, and multiple objectives must be considered in defining the development plans.

The Engineer shall provide Public Involvement that will be a critical role in the planning process. Economic, ecological, environmental, and social impacts of each alternative plan will be considered. An important and quantifiable criterion for plan evaluation is the economic benefits and costs a plan would entail were it implemented. The overall planning process will be based on a systematic planning approach.

### (4) **Water Rights Attorney**

The Engineer shall provide and retain the services of an attorney registered with the State Bar of Texas with professional experience in Texas Law of Water Rights. The attorney retained will provide consultation on applicable State Law regarding water rights and other services as required by Hidalgo County Drainage District No. 1.

### III. PRELIMINARY ENGINEERING, DESIGN & CONSTRUCTION

The services listed below to be provided by the **Engineer** are a summary of the services; the actual contractual services will be identified in each work authorization as outlined in Article 7 of the Agreement. The services shall be divided into three phases with *engineering* work activities, as follows:

- (A) **Preliminary Engineering:** For this phase, the **Engineer** will ultimately deliver the "*Preliminary Engineering Report*". The **Engineer** will prepare the "*Preliminary Engineering Report*" in sufficient detail to indicate clearly the problems involved and the alternate solutions available to the **Owner**; to include preliminary layouts, sketches, and cost estimates for the **Project**, and to set forth clearly the **Engineer's** recommendations. Specific *engineering* work activities, tasks, and/or special services to be provided by the **Engineer** will include:

(1) **Preliminary Field Surveying**

- (a) The **Engineer** shall establish benchmark identifications, if not already provided by the **Owner**.
- (b) The **Engineer** shall obtain data for existing drainage facilities and/or structures, including size, type, and flowline (upstream & downstream) elevations of structures.
- (c) The **Engineer** shall obtain profiles of intersecting roadways that cross existing and proposed channels.
- (d) The **Engineer** shall obtain flood plain and cross-sections (along with appropriate overbank data), and establish reach lengths, as required.

(2) **Data Collection**

- (a) The **Engineer** shall perform site visits for field reconnaissance.
- (b) The **Engineer** shall identify and obtain data to include, but not be limited to:

***Previous Studies:***

- (i) Available previous hydraulic and/or engineering studies
- (ii) Previous documentation and/or studies for Federal Emergency Management Agency (FEMA) floodway requirements. Land Records:
- (iii) Parcel mapping
- (iv) Property assessment
- (v) USGS topographic mapping

***Property and Facility Management***

### III. Preliminary Engineering, Design, & Construction (cont.)

- (vi) Land acquisition and disposition
- (vii) Building and property inventory

#### ***Land Use Planning and Zoning***

- (viii) General plan mapping
- (ix) Zoning mapping
- (x) Demographic mapping
- (xi) Economic development
- (xii) Linking to permitting systems
- (xiii) Existing aerial photographs and/or mapping

#### ***Engineering***

- (xiv) Storm drain mapping
- (xv) Subdivision mapping
- (xvi) Street mapping

#### ***Public Safety***

- (xvii) Emergency preparedness plans

#### ***Environmental Assessment (if required by Federal/State agencies)***

- (xviii) Wetland mapping
- (xix) National Pollution Discharge Elimination System (NPDES) permitting
- (xx) Facility mapping
- (xxi) Vegetation mapping
- (xxii) Coastal zone management

#### ***Elections***

- (xxiii) District Boundary definition

### (3) **Geographical Information System**

The **Engineer** shall develop a Geographical Information System (GIS) utilizing Environmental Systems Research Institute, Inc. (ESRI) ArcView with 3-D Analyst and GIS StreamPro, where appropriate to be compatible with the existing GIS being developed. Import the collected data into ArcView for mapping purposes and presentations to facilitate the decision making and analytical process for the development of the "***Preliminary Engineering Report***". ArcView will also be used to export data to the USACE Hydrologic Center's computer program HEC-River Analysis System (HEC-RAS), which will be used to develop the ***engineering*** models required for the hydraulic analysis of each lateral channel (and associated tributaries) and the plotting of the resultant floodplains. Specifically, ArcView will be used to export this data to HEC-RAS where it will be combined with the field surveyed channel data in order to construct full flood plain cross sections that reflect accurate channel and overbank data for the HEC-RAS models.

*Note:* During the performance of the following hydrologic / hydraulic analysis and the development of the alternate solutions and final recommendation, the **Engineer** will address and incorporate any findings of the environmental documentation process.

### (4) **Hydrologic Analysis**

- (a) The **Engineer** shall review and comment on the hydrologic analyses done to date within the affected watersheds of Pct #3 – Rural.

### III. Preliminary Engineering, Design, & Construction (cont.)

#### (5) Hydraulic Analysis

- (a) The **Engineer** shall review and comment on the hydraulic analysis for each existing and proposed structure location utilizing the HEC-RAS computer program; utilizing Manning's Equation to compute water surface profiles with the inputs of cross-section data, roughness coefficients, and flow rates. Specific steps for the hydraulic analysis are outlined in tasks (b) through (g) below.
- (b) The **Engineer** shall create the terrain Triangulated Irregular Network (TIN), if not provided by the Owner. This will be developed from a combination of field survey, aerial photogrammetry, and topographic mapping data in the development of a point table. With this point table, an event theme will be created in ArcView, which will create the terrain TIN with 3-D Analyst.
- (c) The **Engineer** shall create 2-dimensional lines representing the channel centerline, high bank locations, flow path lines, and cross-section locations by locating the various and required poly lines over the terrain TIN develop the watershed layout over the base map
- (d) The **Engineer** shall create the HEC-RAS GIS import file (ASCII text file); this will involve the correlation of the alignment of the cross-sections with the terrain TIN by extracting the elevations from the "terrain" TIN and creating a 3-dimensional cross-section theme.
- (e) For verification of measured elevations, the **Engineer** shall edit the HEC-RAS GIS import file by selectively replacing the points taken from the terrain TIN at the channel with actual channel points obtained by the field survey.
- (f) The **Engineer** will review and comment on the accuracy of the HEC-RAS modeling of the existing and proposed structures within Precinct 3 facilities authorized in work authorizations as outlined in Article 7 of the Agreement, and compare the hydraulic results to the effective FIS and existing 100-year flood levels.
- (g) After the HEC-RAS model is satisfactory and the output deemed acceptable, the **Engineer** shall apply the GIS export function to create the HEC-RAS export file in preparation for the flood plain mapping.

#### (6) Flood Plain Mapping

- (a) Utilizing the HEC-RAS GIS export file, and ArcView GIS StreamPro, the **Engineer** shall map the floodplain over the terrain TIN.
- (b) The **Engineer** shall compare the results by placing the resulting floodplain mapping over the existing Flood Insurance Rate Map (FIRM): scan the FIRM and bring into ArcView an image for this comparison.

#### (7) Alternate Solutions and Recommendations

- (a) The **Engineer** shall prepare preliminary cost estimates for each alternate solution and final recommendation.

### III. Preliminary Engineering, Design, & Construction (cont.)

- (b) The **Engineer** shall summarize each alternate solution in sufficient detail to indicate clearly the problems involved in order for the Owner to make the appropriate comparisons to the Engineer's final recommendations and provide the approval for the final design of the Project.
- (c) The **Engineer** shall provide a formal and clearly outlined recommendation regarding the final design of the Project.

#### (8) **Final Report**

The **Engineer** shall prepare five (5) bound, color copies of the final "***Preliminary Engineering Report***", including all attachments, exhibits, preliminary layouts, sketches, profiles, and cost estimates.

- (B) **Final Design:** After the **Owner** has approved the **Engineer's** final recommendations as shown in the "***Preliminary Engineering Report***" and the recommendations meet all Federal, State, and County regulations and requirements (including permitting), the **Engineer** will perform all required **engineering** activities to provide the **Owner** with a complete and approved set of plans, specifications, and estimate (PS&E) for each phase of construction of the **Project**. Specific **engineering** activities, tasks, and/or special services to be provided by the **Engineer** will include:

- (1) **Right-of-Way Data (Special Services)** The **Engineer** shall provide a right-of-way (ROW) map to the **Owner** that properly describes the ROW the Owner is to acquire. All procedures and tasks involved in the development of the ROW map will be in accordance with the **Owner's** local operating procedures and the Texas Board of Professional Land Surveying Practices Act. Individual activities and/or requirements include:
  - (a) Abstracting — The **Engineer** shall perform a preliminary title search and determine ownership information.
  - (b) Surveying — The **Engineer** shall obtain the required survey data needed to establish existing and proposed right-of-way lines, channel centerline alignment, private property lines, county and/or city limits, and any topographic information not clearly indicated by the aerial photogrammetry.
  - (c) The **Engineer** shall prepare the ROW map.
  - (d) The **Engineer** shall prepare field note descriptions on 8-1/2 x 14" sheets, signed and sealed by a Registered Professional Land Surveyor, for each parcel of land to be acquired as shown on the ROW map.
  - (e) The **Engineer** shall prepare parcel plats for each parcel of land to be acquired as shown on the ROW map. All parcel plats will be prepared on 8-1/2" x 14" sheets and signed and sealed by a Registered Professional Land Surveyor.
  - (f) Any revisions required to the ROW map, and associated documents, shall be made by the Engineer promptly, and at no additional cost or expense to the Owner. The **Engineer** shall furnish such revised ROW map, and associated documents, to the Owner at no additional cost or expense to the **Owner**.

### III. Preliminary Engineering, Design, & Construction (cont.)

(2) **Design Field Surveying (Special Services)**

The **Engineer** shall perform field surveys and provide field layouts and/or information necessary to collect information required in the final design of the **Project**. This may include, but not be limited to, additional channel sections for the determination of final earthwork, roadway cross sections and profiles for intersecting roadways, soil bore staking, and right-of-way staking.

(3) **Geotechnical Investigations (Special Services)**

The **Engineer** shall perform geotechnical investigations and testing for the purpose of foundation studies and design for any pavement, retaining walls, bridges, and/or miscellaneous structures that may be required for final design.

(4) **Permitting**

The **Engineer** shall furnish the necessary *engineering* data required to apply for regulatory permits from local, State, or Federal authorities.

(5) **Channel/Drainage Design**

The **Engineer** shall perform channel / drainage design for the proposed improvements to existing channels and/or facilities, as well as the proposed channels of the Project. The design of drainage improvements shall conform to the Project design criteria, and when possible, the standard designs required by the Owner (City, County, or State) of any associated roadways. These designs shall in all respects combine the application of sound *engineering* principles with a high degree of economy, and shall be submitted to the applicable City, County, State, and/or Federal agencies for approval.

(6) **Roadway Design**

The **Engineer** shall perform roadway design for any intersecting roadway approaches to the proposed improvements to the existing channels and/or proposed channels of the Project. The design of these roadways shall conform to the Project design criteria, and when possible, the standard designs required by the Owner (City, County, or State) of the associated roadway. These designs shall in all respects combine the application of sound *engineering* principles with a high degree of economy, and shall be submitted to the applicable City, County, State, and/or Federal agencies for approval.

(7) **Bridge Design**

(a) The **Engineer** shall perform bridge design required for any roadway crossings to the proposed improvements to the existing channels and/or proposed channels of the Project. The design of these bridges shall conform to the **Project** design criteria required by the **Owner** (City, County, or State), of the associated -bridge structure and/or roadway, and the requirements set forth by the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Highway Bridges". These designs shall in all respects combine the application of sound *engineering* principles with a high degree of economy, and shall be submitted to the applicable City, County, State, and/or Federal agencies for approval.

### III. Preliminary Engineering, Design, & Construction (cont.)

- (b) Prior to performing structural detailing, the **Engineer** shall provide a bridge layout to the governing entity of the associated bridge structure and/or roadway for approval. Each bridge layout will include the required information set forth by the governing entity.

#### (8) Plans, Specifications & Estimates (PS&E)

- (a) The **Engineer** shall prepare contract drawings, specifications and estimates for construction of the **Project** or portions of the **Project** as authorized by the **Owner**. These documents shall in all respects combine the application of sound *engineering* principles with a high degree of economy, and shall be submitted to the applicable City, County, State, and/or Federal agencies for approval.
- (b) All final plan sheets shall be developed, by the **Engineer**, on 11" x 17" reproducible, 4 mil, double-matte, white, opaque film.
- (c) Graphics files shall be developed by the **Engineer** in Microstation design file format, and must plot consistent with the reproducible plots submitted.
- (d) **Plan Sheets:** Plan sheets developed by the **Engineer** shall include, but not be limited to, title sheet, typical sections, sequence of construction, traffic control (as applicable), specification data (including schedules for minimum sampling and testing), estimate and quantity, plan-profile, channel details, roadway details (as applicable), bridge and culvert details, hydraulic details, and standards. (Standards may be used from governing entities, but must be signed and dated by the **Project Engineer** of responsible supervision as being applicable to the **Project**.)
- (e) **Specifications:** Whenever possible, the **Engineer** shall use the Texas Department of Transportation's 1993 Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges. Other specifications may be developed by the **Engineer**, but must incorporate, to the extent possible, references to standard requirements of AASHTO design and AASHTO testing procedures.
- (f) **Estimates.:** The **Engineer** shall prepare detailed cost estimates and proposals of authorized construction, which shall include summaries of bid items and quantities based, insofar as practicable, on the unit price system of bidding. The **Engineer** shall not be required to guarantee the accuracy of those estimates.

- (C) **Construction Phase Services:** The **Engineer** shall provide *engineering* services for each authorized construction contract of the **Project**. Specific *engineering* work activities, tasks, and/or special services to be provided by the **Engineer** will include:

- (1) **Construction Bidding:** The **Engineer** shall prepare the documents for all necessary copies of approved plans, specifications, notices to bidders, and proposals.

*Note:* Services for assistance in advertising for each authorized construction contract for the **Project**, opening and tabulation of bids, recommendations to the **Owner** as to the proper action on all bid proposals received, and the preparation of formal contract documents for the award of each construction contract will be performed by the **Engineer**.

### III. Preliminary Engineering, Design, & Construction (cont.)

#### (2) Project Site Representation

- (a) In general, the **Engineer** shall provide the *engineering support and data* required for consultation and advisement to the **Owner**, and to protect the **Owner** against defects and deficiencies in the work of the **Contractor**.
- (b) **Daily and Weekly Reports:** The **Engineer** shall provide the *engineering support and data* required to monitor the **Contractor's** progress with daily and weekly reports as outlined in the "*Construction Management Policy & Procedures Manual*" developed and more particularly identified under I — Engineering Management in this exhibit. This information will be utilized for the development of the *monthly progress report* to be provided to the **Owner** as identified under Section I-Engineering Management in this exhibit.
- (c) **Contractor Payment:** The **Engineer** shall take measurements and calculate quantities, in accordance with the construction contract specifications, of those items of work accepted and conforming to the construction contract specifications, for the preparation of the monthly and final estimates for payment to the **Contractor** as identified and performed under I — Engineering Management in this Exhibit.

*Note:* The **Engineer** is not responsible for actual payments to the **Contractor**.

- (d) The **Engineer** will provide **Project** site representation of the authorized construction contract as follows:
  - (i) **Project Engineer.** The **Engineer** will provide visits by the *Project Engineer* or a competent representative of the **Engineer** to the site of construction at least three times each week for the purpose of monitoring the **Contractor's** progress and conformance to the construction contract plans and specifications.
  - (ii) **Resident Engineer.** If authorized by the **Owner**, the **Engineer** will furnish the services of a *Resident Engineer* and/or construction representative(s) for continuous on-the-site representation.

#### (3) Miscellaneous Technical Activities

- (a) **Construction Field Surveying:** The **Engineer** shall perform all field surveys and field layouts, including construction staking and right-of-way staking.
- (b) **Shop Drawings:** The **Engineer** shall review and check all shop or working drawings furnished by the **Contractor**.
- (c) **Control of Materials & Equipment.** The **Engineer** shall provide inspection of all materials and equipment furnished/used by the **Contractor** as follows:
  - (i) Review and record all laboratory, shop and mill tests of materials and equipment for compliance with the construction contract specifications.
  - (ii) Observe and/or perform **Project** record testing and/or independent assurance testing as outlined in the construction contract specifications.

### III. Preliminary Engineering, Design, & Construction (cont.)

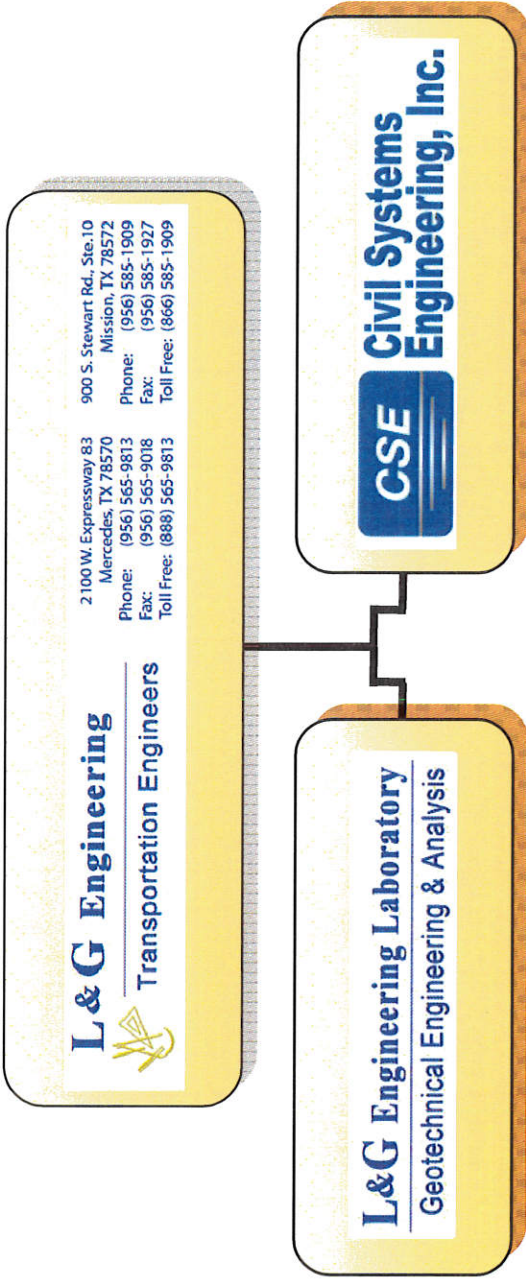
(d) **Change Orders:** When applicable, the **Engineer** will prepare the *engineering* data, including plan sheet drawings, specifications, and estimates, for the preparation of construction contract change orders, which may be required due to actual field conditions encountered or new requirements directed by the **Owner**.

(4) **Final Acceptance**

(a) **Performance Testing:** Following the completion of construction by the **Contractor**, the Engineer shall provide the *engineering* support and data required for the initial operation of the **Project**. This will include inspection for conformance and recordkeeping for the necessary performance tests required by the construction contract specifications. The **Engineer** will provide this inspection with either the *Project Engineer* or *Resident Engineer*, as directed by the **Owner**.

(b) **As-Built Drawings:** The **Engineer** shall develop as-built drawings to show the work as actually constructed.

*Exhibit B2 – Project Team*




**L&G Consulting Engineers, Inc.**  
2100 W. Expressway 83  
Mercedes, TX 78570  
Ph. (956) 565-9813  
Fax (956) 565-9018

**L&G Engineering Laboratory, LLC**  
2100 W. Expressway 83  
Mercedes, TX. 78570  
Ph (956) 565-0760  
Fax (956) 565-9018

**Civil Systems Engineering, Inc.**  
2299 Lone Star Drive, Ste #239  
Sugarland, Texas 77479  
Ph (713) 782-3811  
Fax (713) 298-6819


# EXHIBIT "D"

## CONTRACT RATES

 <b style="font-size: 1.2em;">L &amp; G Engineering</b> Transportation Consulting Engineers			
Audited Overhead Rate FY 2012			
Labor/Staff Classification	Hourly Base Rate	Contract Rate FY 13	Contract Rate *FY 14
Principal	\$ -	\$ -	\$ -
Senior Project Manager	\$ 68.00	\$ 215.40	\$ 221.87
Senior Engineer	\$ 53.00	\$ 167.89	\$ 172.92
Project Engineer	\$ 39.00	\$ 123.54	\$ 127.25
Senior Environmental Scientist/Specialist	\$ 43.00	\$ 136.21	\$ 140.30
Design Engineer	\$ 36.00	\$ 114.04	\$ 117.46
ROW Administrator	\$ 34.00	\$ 107.70	\$ 110.93
ROW Negotiator	\$ 31.00	\$ 98.20	\$ 101.14
EIT	\$ 26.00	\$ 82.36	\$ 84.83
Senior Engineer Tech	\$ 25.00	\$ 79.19	\$ 81.57
Environmental Scientist/ Specialist	\$ 25.00	\$ 79.19	\$ 81.57
Engineer Tech	\$ 24.00	\$ 76.02	\$ 78.31
CADD Operator / GIS Analyst	\$ 21.00	\$ 66.52	\$ 68.52
Admin/Clerical	\$ 18.00	\$ 57.02	\$ 58.73
Biologist	\$ 16.00	\$ 50.68	\$ 52.20
Overhead Rate: 182.83% Profit Rate: 12.00% * Escalation Rate of 3% on FY14 Contract Rates			
<b>Other Direct Expenses:</b>		<b>Cost</b>	
Lodging		\$85/night	
Meals		\$36/day	
Mileage		\$0.55/mile	
Car Rental		\$50.00/day	
Air Travel (Coach/Business Class)		<b>At Cost</b>	
8 1/2" X 11" copies		\$1.00/sheet	
11" X 17" copies		\$1.50/sheet	
11" X 17" Mylar		\$2.00/sheet	
Overnight Mail - Letter Size		\$15.00/Each	
Overnight Mail - Oversized Box		\$25.00/Each	

# EXHIBIT "D"

## CONTRACT RATES

 <b>L &amp; G Engineering Laboratory</b> Geotechnical • Construction Material Testing				
Audited Overhead Rate FY 2012				
Labor/Staff Classification	Hourly Base Rate	Base	Contract Rate FY 13	Contract Rate FY 14
Principal	\$ -	\$	-	\$ -
Senior Project Manager	\$ 69.00	\$	219.42	\$ 226.00
Senior Engineer (All Disciplines)	\$ 55.00	\$	174.90	\$ 180.15
Project Engineer (All Disciplines)	\$ 45.00	\$	143.10	\$ 147.39
Design Engineer (All Disciplines)	\$ 40.00	\$	127.20	\$ 131.02
EIT	\$ 28.00	\$	89.04	\$ 91.71
Project Inspector	\$ 30.00	\$	95.40	\$ 98.26
Engineering Specialist	\$ 34.00	\$	108.12	\$ 111.36
Junior Engineering Specialist	\$ 28.00	\$	89.04	\$ 91.71
Record Keeper	\$ 26.00	\$	82.68	\$ 85.16
Engineering Technician	\$ 26.00	\$	82.68	\$ 85.16
Junior Engineering Technician	\$ 23.00	\$	73.14	\$ 75.33
CADD Operator	\$ 21.00	\$	66.78	\$ 68.78
Concrete & Asphalt Technician	\$ 16.00	\$	50.88	\$ 52.41
Soils & Aggregate Technician	\$ 13.00	\$	41.34	\$ 42.58
Biologist	\$ 22.00	\$	69.96	\$ 72.06
Senior Environmental Scientist / Specialist	\$ 43.00	\$	136.74	\$ 140.84
Environmental Scientist / Specialist	\$ 25.00	\$	79.50	\$ 81.89
Admin. / Clerical	\$ 15.00	\$	47.70	\$ 49.13
Audited Rate: 183.99% Profit Rate: 12% * Escalation Rate of 3% on FY14 Contract Rates				
Other Direct Expenses:	Cost			
Lodging	\$85/night / Maximum Cost Current State Rates			
Meals	\$36/day / Maximum Cost Current State Rates			
Mileage	\$0.55/mile / Fixed Cost			
Car Rental	\$75.00/day / Maximum Cost			
Air Travel (Coach/Business Class)	At Cost / Maximum Cost			
8 1/2" X 11" copies	\$1.00/sheet			
11" X 17" copies	\$1.50/sheet			
11" X 17" Mylar	\$2.00/sheet			
Overnight Mail - Letter Size	\$15.00/Each			
Overnight Mail - Oversized Box	\$38.00/Each			

## CONSTRUCTION MATERIAL TESTING SERVICES

### Soils Testing

Moisture Content Determination	ASTM D 2216 - Tex-103-E	\$8.50/Ea.
Determination of Liquid Limit of Soils	Tex-104-E	\$45.00/Ea.
Determination of Plastic Limit of Soils	Tex-105-E	\$45.00/Ea.
Atterberg Limits of Soils	ASTM D 4318 - Tex-106-E	\$65.00/Ea.
Bar Linear Shrinkage of Soils	Tex-107-E	\$60.00/Ea.
Particle Size Analysis of Soils (Gradation)	ASTM D 422 - Tex-110-E	\$60.00/Ea.
Material Finer #200 Sieve	ASTM D 1140 -Tex-111-E	\$60.00/Ea.
Lime Series Testing (PI Relation)	Tex-112-E	\$400.00Ea.
Moisture-Density Relationship (TxDOT)	Tex-113-E / Tex-114-E	\$165.00/Ea.
Standard Proctor	ASTM D 698	\$160.00/Ea.
Modified Proctor	ASTM D 1557	\$165.00/Ea.
Field Density Test (Nuclear)	ASTM D 2950 - Tex-115-E	\$25.00/Ea.
Determination of Soil pH	Tex-128-E	\$70.00/Ea.
Soil-Lime Testing	Tex-121-E (Part I)	\$140.00/Ea.
Resistivity of Soils	Tex-129-E	\$85.00/Ea.
Texas Wet Ball Mill (Base Material Quality)	Tex-116-E	\$180.00/Ea.
Triaxial Compression Test (Dist. Soil & Base)	Tex-117-E	\$350.00/Ea.

### Coarse and Fine Aggregate Quality Testing

Sieve Analysis (Dry)(4 Sieve)	ASTM C 136 - Tex-200-F	\$65.00/Ea.
Sieve Analysis (Washed)(4 Sieve)	ASTM C 136 - Tex-200-F	\$65.00/Ea.
Sieve Analysis (Concrete Aggr.)(5 Sieve)	Tex-401-A	\$65.00/Ea.
Sieve Analysis (Additional Sieves)	All Methods	\$12.00/Ea.
Deleterious Material (Coarse Aggr.)	Tex-217-F (Part I)	\$40.00/Ea.
Deleterious Material (Concrete Aggr.)	Tex-413-A	\$40.00/Ea.
Decantation (Coarse Aggr.)	Tex-217-F (Part II)	\$10.00/Ea.
Decantation Test (Fine Aggr. - Conc.)	ASTM C 117 - Tex-406-A	\$40.00/Ea.
Specific Gravity/Absorp. (Concrete Aggr)	ASTM C 127 - Tex-403-A	\$75.00/Ea.
L.A. Abrasion	ASTM C131 - Tex-410-A	\$500.00/Ea.
Soundness (5 Cycle Magnesium Sulfate)	ASTM C 88 - Tex-411-A	\$500.00/Ea.
SSD Unit Weight of Aggregates	ASTM C 29 - Tex-404-A	\$60.00/Ea.
Percent Voids/Solids in Conc. Aggr.	Tex-405-A	*\$15.00/Ea.
*(In Conjunction w/ SSD Unit Wt of Aggregates)		
Sand Equivalent	ASTM D 2419 - Tex-203-F	\$75.00/Ea.
Specific Gravity / Absorption (Fine Aggr.)	ASTM C 128 - Tex -403-A	\$75.00/Ea.
Organic Impurities (Fine Aggr.)	ASTM C 87 - Tex -408-A	\$45.00/Ea.
Fineness Modulus (Fine Aggr.)	Tex-402-A	\$15.00/Ea.
Flat & Elongated Particles (Coarse Aggr.)	Tex-280-F	\$60.00/Ea.
Coarse Aggr. Ang. – Crushed Face (Coarse Aggr.)	Tex-460-A (Part I)	\$80.00/Ea.
Acid Insoluble of Fine Aggregate	Tex-612-J	\$75.00/Ea.

### Pavement Testing (Mix and Roadway) / Asphalt Quality

Sieve Analysis (Paving Mix Gradation)	Tex-236-F / Tex-200-F	\$90.00/Ea.
Asphalt Content	Tex-236-F	\$90.00/Ea.
Voids in Mineral Aggr. (VMA)	Tex-207-F	\$110.00/Ea.
Boil Test (Effect of Water on Paving Mix)	Tex-530-C / Tex-531-C	\$80.00/Ea.
Indirect Tensile Strength Test	Tex-226-F	\$600.00/Ea.
Moisture Content (Paving Mix)	Tex-212-F (Part II)	\$15.00/Ea.
Lab Molded Density	Tex-207-F	\$80.00/Ea.
Hamburg Wheel Tracker	Tex-242-F	\$900.00/Ea.
Field Coring – ACP Thickness	ASTM D 3549	\$55.00/Ea.
Pavement Thickness Determination (Full Depth)	ASTM D 3549	\$55.00/Ea.
Density of Asphaltic Cores (4 or 6 inch) (Set of 2)	Tex-207-F	\$65.00/Set
In-Place Air Voids	Tex-207-F	\$25.00/Ea.
Maximum Theoretical SPG (Rice Gravity)	Tex-227-F	\$90.00/Ea.
Extraction/Sieve Analysis/Asphalt Content	Tex-210-F / Tex-200-F	\$180.00/Ea.
Asphalt Rolling Pattern (Nuclear Method)	Tex-207-F (Part IV)	\$ 35.00/Ea.
Segregation Profile	Tex-207-F (Part V)	\$300.00/Ea.
Joint Density	Tex-207-F (Part VII)	\$300.00/Ea.
Tack Coat Adhesion	Tex-243-F	\$100.00/Ea.
Thermal Profile	Tex-244-F	\$175.00/Ea.
Ride Quality	Tex-1001-S	\$ At Cost

### Pavement Investigation (All Inclusive – QA Verification Field Sample) ~

Includes Core Existing Asphalt for Thickness, Perform Caliche Base Thickness, Sieve Analysis & Plasticity Index, Stabilized Subgrade Thickness & Plasticity Index		\$400.00/Ea.
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### Concrete and Masonry Field and Laboratory Testing

Temperature Test (Fresh Mix Conc.)	Tex-422-A	No Charge*
Slump Test	ASTM C 143 - Tex-415-A	No Charge*
Air Content (Pressure Method)	ASTM C 138 - Tex-416-A	\$25.00/Ea.
Air Content (Volumetric)	ASTM C 173	\$35.00/Ea.
Casting of Concrete Cylinders	ASTM C 31 - Tex-447-A	No Charge*
Cylindrical Specimen Prep./Hold/Cure	ASTM C 192 - Tex-447-A	\$10.00/Ea.
Compressive Strength of Cyl. Specimen	ASTM C 39 - Tex-418-A	\$15.00/Ea.
~Total Cost Per Cyliner =		\$25.00/Ea.
Casting of Grout Prisms	ASTM C 1019	No Charge*
Grout Prism Prep./Cure/Compressive Strength	ASTM C 39	\$30.00/Ea.
Casting of Mortar Cubes	ASTM C 780	No Charge*
Mortar Cube Prep./Cure/Compressive Strength	ASTM C 109	\$30.00/Ea.
Masonry Unit Prep. /Compressive Str. (Set of 3)	ASTM C 140	\$200.00/Set
Masonry Unit SPG/Abs./Unit Wt. (Set of 3)	ASTM C 140	\$200.00/Set

\*(In Conjunction w/ Field Inspection)

### Miscellaneous Testing

Drilled Shaft Slurry Density	Tex-130-E (Part II)	\$20.00/Ea.
Drilled Shaft Slurry Sand Content	Tex-130-E (Part III)	\$15.00/Ea.
Drilled Shaft Slurry Viscosity	Tex-130-E (Part IV)	\$20.00/Ea.

**Engineering Review, Evaluation, Management & Administration**

Test Report.....\$18.00/Ea.

The specific hourly rate within each classification listed under **Direct Labor** depends on the experience, training, and qualifications of the personnel. A two (2) hour minimum billing at the applicable rate will be assessed per visit to project site.

Services provided on Saturday, Sunday and all work in excess of “normal” work hours will be invoiced at an overtime rate 1.5 times the applicable rate for the work performed. The cost of services is based upon the assumption that services will be provided during “normal” working hours. Normal working hours are between 7:00 a.m. and 6:00 p.m., Monday through Friday.

A Project Administrative Fee will be assessed on a per invoice basis equal to 15% fixed fee adjustment. This Project Administrative Fee includes engineering review, oversight, evaluation, management and administration.


**Expenses:**

Mileage.....0.55 cents/mile

All other project specific, third-party costs will be charged at cost plus 15 percent. Invoices will be submitted monthly for work in progress in our standard format. They are due and payable upon receipt and become past due 30 days after the billing date. Past due invoices may be subject to late charges at the rate of 1 ½ percent per month (18 percent per annum). In the event that the State of Texas legislates a sales tax on Professional Services, the amount of the tax will be added to the appropriate service rate charged. Our invoices are due and payable upon receipt at 2100 W. Expressway 83, Mercedes, Texas 78570.

# EXHIBIT "D"

## CONTRACT RATES

			
Labor/Staff Classification	Hourly Base Rate	FY 13 Contract Rate	* F14 Contract Rate
Principal/QA/QC	\$80.00	\$219.52	\$226.11
Program Manager	\$70.00	\$192.08	\$197.84
Project Manager	\$65.00	\$178.36	\$183.71
Hydraulic Engineer	\$60.00	\$164.64	\$169.58
Project Engineer	\$60.00	\$164.64	\$169.58
GIS Specialist	\$50.00	\$137.20	\$141.32
Admin/Clerical	\$25.00	\$68.60	\$70.66
Overhead Rate:	145%		
Profit Rate:	12%		
* FY 2014 Escalation Rate:	3%		
<b>Other Direct Expenses:</b>			
	<b>Cost</b>		
Lodging	\$85/night		
Meals	\$36/day		
Mileage	\$0.55/mile		
Car Rental	\$50.00/day		
Air Travel (Coach/Business Class)	<b>At Cost</b>		
8 1/2" X 11" copies	\$1.00/sheet		
11" X 17" copies	\$1.50/sheet		
11" X 17" Mylar	\$2.00/sheet		
Overnight Mail - Letter Size	\$15.00/Each		
Overnight Mail - Oversized Box	\$25.00/Each		

**EXHIBIT "E"**

**PROFESSIONAL ENGINEERING SERVICES CONTRACT # \_\_\_\_\_  
WORK AUTHORIZATION FORM**

**WORK AUTHORIZATION NO. \_\_\_\_\_**

**THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Section I.A. of the Agreement made by and between \_\_\_\_\_ hereinafter called the "Owner", and \_\_\_\_\_, professional Engineers hereinafter called "Engineer".**

**PART 1. SCOPE OF WORK**

**The purpose of this Work Authorization is for the Engineer to provide**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**The scope of services to be provided by the Owner is identified in EXHIBIT "A"- Scope of Services to be Provided by the Owner attached hereto.**

**The scope of services to be provided by the Engineer is identified in EXHIBIT "B" – Scope of Services to be Provided by the Engineer attached hereto.**

**PART 2. ESTIMATED COST**

**The estimated cost for services under this Work Authorization is \$ \_\_\_\_ . This amount is based upon the costs outlined in the Estimated Cost Proposal attached hereto as EXHIBIT "D".**

**PART 3. PAYMENT**

**Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with Article/Part/Section \_\_\_\_\_ of the Agreement.**

**PART 4. FUNDING**

**This Work Authorization No. \_\_ shall be funded through funding source:**

**Account No. \_\_\_\_\_**

**Requisition Number \_\_\_\_\_**

**PART 5. PERIOD OF SERVICE**

**This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of scopes of the work authorization.**

**PART 6. RESPONSIBILITIES AND OBLIGATIONS**

**This Authorization does not waive the parties' responsibilities and obligations provided under the Agreement.**

**PART 7. ACKNOWLEDGEMENT AND CONFIRMATION**

**Acknowledgement and confirmation by \_\_\_\_\_ as to content and detail of this Work Authorization No. \_\_\_\_.**

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

**PART 8. ACCEPTANCE AND APPROVAL**

**This Work Authorization is hereby accepted, approved by the Hidalgo County Drainage District No. 1 and \_\_\_\_\_ as indicated below and effective as of \_\_\_\_ day of \_\_\_\_\_, 20\_\_.**

**THE ENGINEER:**

**THE OWNER:**

\_\_\_\_\_  
Mr. Jacinto Garza, P.E.  
President – L&G Engineering

\_\_\_\_\_  
Chairman of the Board  
Hidalgo County Drainage District No. 1

**EXHIBIT "E"**

**SUPPLEMENTAL AGREEMENT NO. \_\_\_\_\_  
TO AGREEMENT FOR PROFESSIONAL SERVICES**

THIS SUPPLEMENTAL AGREEMENT is made pursuant to the terms and conditions of \_\_\_\_\_ of the Agreement made by and between \_\_\_\_\_, hereinafter called the "Owner", and \_\_\_\_\_ hereinafter call the "Engineer".

**WITNESSETH**

WHEREAS, the **Owner** and the **Engineer** executed the Agreement on the \_\_\_\_ day of \_\_\_\_\_, concerning **Engineering** \_\_\_\_\_ (hereinafter referred to as the "Project"); and

WHEREAS, Article \_\_\_\_ of the Agreement, (article title), establishes \_\_\_\_\_; and

WHEREAS, it has become necessary to amend the contract to

---

**A. AGREEMENT**

**NOW THEREFORE**, premises considered, the **Owner** and the **Engineer** agree that said Agreement is amended as follows:

I. Article \_\_\_\_ of the Agreement, (article title), is revised to

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**All other provisions are unchanged and remain in full force and effect.**

**IN WITNESS WHEREOF**, the **Engineer** and the **Owner** have caused this Supplemental Agreement to the Agreement for Professional Services to be executed as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

**THE ENGINEER:**

**THE OWNER:**

\_\_\_\_\_  
Mr. Jacinto Garza, P.E.  
President – L&G Engineering

\_\_\_\_\_  
Chairman of the Board  
Hidalgo County Drainage District No. 1

**ATTACHMENTS:**

- EXHIBIT A** - Services to be provided by the **Owner**
- EXHIBIT B** - Services to be provided by the **Engineer**
- EXHIBIT C** - Work Schedule (Omitted)
- EXHIBIT D** - Contract Rates
- EXHIBIT E** - Supplemental Agreement Form

**EXHIBIT "E"**

**PROFESSIONAL ENGINEERING SERVICES CONTRACT # \_\_\_\_\_  
WORK AUTHORIZATION FORM**

**WORK AUTHORIZATION NO. 1**

**THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Section I.A. of the Agreement made by and between Hidalgo County Drainage District No. 1 hereinafter called the "Owner", and L&G Engineering, professional Engineers hereinafter called "Engineer".**

**PART 1. SCOPE OF WORK**

**The purpose of this Work Authorization is for the Engineer to provide services, as outlined in the attached Exhibit "B", for the Hydrologic Mapping & Feasibility Analysis of FM676 in Alton hereinafter referred to as the "Project" – Pct #3 Rural Drainage Improvement Program.**

**The scope of services to be provided by the Owner is identified in EXHIBIT "A"- Scope of Services to be Provided by the Owner attached hereto.**

**The scope of services to be provided by the Engineer is identified in EXHIBIT "B" – Scope of Services to be Provided by the Engineer attached hereto.**

**PART 2. ESTIMATED COST**

**The estimated cost for services under this Work Authorization is \$75,054.77. This amount is based upon the costs outlined in the Estimated Cost Proposal attached hereto as EXHIBIT "D".**

**PART 3. PAYMENT**

**Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with Article/Part/Section 5 of the Agreement.**

**PART 4. FUNDING**

**This Work Authorization No. 1 shall be funded through funding source:**

**Account No. \_\_\_\_\_**

**Requisition Number \_\_\_\_\_**

**PART 5. PERIOD OF SERVICE**

**This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of scopes of the work authorization.**

**PART 6. RESPONSIBILITIES AND OBLIGATIONS**

This Authorization does not waive the parties' responsibilities and obligations provided under the Agreement.

**PART 7. ACKNOWLEDGEMENT AND CONFIRMATION**

Acknowledgement and confirmation by Mr. Jacinto Garza, P.E. of L&G Engineering as to content and detail of this Work Authorization No. 1.

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

**PART 8. ACCEPTANCE AND APPROVAL**

This Work Authorization is hereby accepted, approved by the Hidalgo County Drainage District No. 1 and L&G Engineering as indicated below and effective as of \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**THE ENGINEER:**

**THE OWNER:**

  
\_\_\_\_\_  
Mr. Jacinto Garza, P.E.  
President – L&G Engineering

\_\_\_\_\_  
Chairman of the Board  
Hidalgo County Drainage District No. 1

**APPROVED AS TO FORM:  
ATLAS, HALL, & RODRIGUEZ, LLP**

\_\_\_\_\_

**EXHIBIT "A"**  
**Services to be provided by the Owner**

The following provides an outline of the services to be provided by the **OWNER** in the development of the "**Project**".

The **OWNER** will provide to the **ENGINEER** the following:

- (1) Authorization to the **ENGINEER** to begin work in accordance with Section 3 of this Agreement.
- (2) Payment for work performed by the **ENGINEER**, and accepted by the **OWNER** in accordance with Section 6 of the Agreement.
- (3) Assistance to the **ENGINEER**, as necessary, to obtain the required data and information from other local, regional, State and Federal agencies that the **ENGINEER** cannot easily obtain.
- (4) Provide any available relevant data the **OWNER** may have on file concerning the "**Project**".
- (5) Provide timely review and decisions in response to the **ENGINEER'S** request for information and/or required submittals and deliverables, in order for the **ENGINEER** to maintain the agreed-upon work schedule.
- (6) Attend and participate in progress meetings as required and as coordinated and conducted by the **ENGINEER**.
- (7) Assist the **ENGINEER** in the preparation of the "**Project**" mailing list; provide representation, a site and stenographer for all public meetings; additionally:

*Public Meetings*

- (a) Approve agenda and all exhibits prior to public meeting;
  - (b) Approve date and location of the meeting; and
  - (c) Review/approve Public Meeting Report
- (8) Attend the Preliminary Concept Conference coordinated and conducted by the **ENGINEER**.
  - (9) Review and approve the "**Project**" design criteria.
  - (10) Review and approve change orders as required and prepared by the **ENGINEER**.

**EXHIBIT “B”**  
**Services to be Provided by the Engineer**

**PROJECT INFO:**

- **Project Name:** FM 676 – Drainage Outfall Project
- **Project Limits:** From SH 107 – East to Taylor Rd.

**GENERAL SCOPE OF WORK:**

The work to be performed by the **Engineer** under this Work Authorization shall consist of providing Engineering Services required for analysis and evaluation of the proposed drainage improvement project located in the City of Alton adjacent to FM 676 (within limits of SH 107 (Conway Rd.) to just East of Taylor Rd.) hereinafter denoted as the **Project**. The scope will include Coordination with Local Entities to Accommodate Local Drainage Needs & Corresponding Participation, Gathering of Information Regarding Existing Drainage Features, Facilities, & Watersheds, Hydrologic Mapping & Outfall Capacity Analysis, Meetings w/ County - HCDD#1 - TxDOT - Alton to Examine Existing Hydrologic Studies, Identification of All Affected Property Owners on Proposed Facilities, Coordination w/ Landowners due to Proposed Outfall Facilities Impacting Their Properties (Limited Public Involvement), Coordination w/ TxDOT & FHWA on Logistics for Utilizing Federal Earmark Monies, and a Feasibility Report and Recommendations.

The **Engineer** will furnish all equipment, materials, supplies, and incidentals as needed to perform the services required by this Work Authorization, except as otherwise specified in Exhibit A, “Services to be Provided by the Owner”.

Specific activities to be performed by the **Engineer** include the following:

- *Coordinate w/ TxDOT – County – City of Alton to Accommodate Local Drainage Needs & Corresponding Participation*
- *Gather Information Regarding Existing Drainage Features, Facilities, & Watersheds*
- *Hydrologic Mapping & Outfall Capacity Analysis*
- *Meet w/ County – HCDD#1 – TxDOT – City of Alton and Examine Existing Hydrologic Studies*
- *Identification of All Affected Property Owners on Proposed Facilities*
- *Coordination w/ Landowners due to Proposed Outfall Facilities Impacting Their Properties (Limited Public Involvement)*
- *Coordination w/ TxDOT & FHWA on Logistics for Utilizing Federal Earmark Monies*
- *Feasibility Report and Recommendations*

**COORDINATE w/ TxDOT – COUNTY – CITY OF ALTON TO ACCOMMODATE LOCAL DRAINAGE NEEDS & CORRESPONDING PARTICIPATION**

The **Engineer** will hold various meetings with TxDOT, Hidalgo County, and the City of Alton to ascertain local drainage patterns, current drainage issues and community drainage needs. In these meetings, the **Engineer** will present the generalized scope of the project, estimated limits of area of influence and proposed plan (through the use of graphical presentation materials and/or presentation slides) for discussion of any local drainage patterns or areas which need improvement. Meetings will be held individually with each entity so that any local needs specific to each entity can be addressed (meetings may also be combined once preliminary meetings take place for overall cohesiveness). Meetings may include field visits to problem areas and field measurement of said local issues for documentation. The main purpose of these meetings will be to allow any and all perceived hydrologic/hydraulic problems to be accounted for in this early coordination phase, so that they are addressed properly within the final report.

Based on the available funding allocated to this project and anticipated general project scope, the **Engineer** will develop a Project Fact Sheet identifying the overall project costs along with the associated cost sharing and participation from each affected entity. An overall meeting will be held with all entities to discuss monetary participation if needed.

**GATHER INFORMATION REGARDING EXISTING DRAINAGE FEATURES, FACILITIES, & WATERSHEDS**

The **Engineer** will conduct extensive outreach with all parties involved to document and establish all existing drainage facilities and features that exist within the delineated watershed. The **Engineer** will review and establish existing general drainage patterns. The **Engineer** will provide an analysis to determine precise scope of Hydrologic and Hydraulic (H&H) modeling required based on the limits of the contributing watershed. The research will include, but may not be limited to:

- Field Reconnaissance and Investigations:
  - o Site visits to the project area will be conducted to field verify any and all existing drainage features & facilities (conditions, sizes, types).
  - o Outreach with all maintenance personnel from TxDOT, Hidalgo County, and the City of Alton will be conducted to document any existing flooding conditions that exist within the project area.
- Office Surveys
  - o Historical research will be conducted to see if this area was subjected to any flooding during our last major storm events (i.e. Hurricane Dolly, Hail Storm of 2012, etc.)
  - o Google Earth will be utilized for identification of any existing drainage facilities based on basic aerial imagery.

**HYDROLOGIC MAPPING & OUTFALL CAPACITY ANALYSIS**

Hydrologic Mapping

- The **Engineer** will develop a Hydrologic Map for the **Project** analyzing the watersheds, sub-basins & drainage areas contributing to the proposed outfall(s). The **Engineer** will coordinate with the Hidalgo County Drainage District No. 1 (HCDD#1), the affected Irrigation District, and TxDOT in establishment of the map.
- The **Engineer** will develop the peak flow rates, Q, identified in the **Project** drainage watersheds that are located within the **Project** area, with any available data from the National Flood Insurance Program (NFIP) or other studies to determine consistency of results. In development of peak flow rates, the **Engineer** will utilize various mapping criteria including terrain modeling, soil data mapping, land use, land cover, aerial photography, street maps and existing drainage systems and topographic map/datasets (LiDAR, existing field survey, etc.). Peak flow rates will be calculated based on required annual exceedance probabilities in accordance with the TxDOT Hydraulic Manual.
- The **Engineer** will incorporate any constraints, issues or problem areas developed during the previous tasks (coordination and reconnaissance phases). If required, the **Engineer** will utilize software such as ArcHydro to recondition LiDAR Digital Elevation Model (DEM) or existing field survey datasets based on true field conditions, natural drainage patterns and/or drainage features from field reconnaissance.

Outfall Capacity Analysis

- The **Engineer** will provide generalized hydraulic analysis for each existing and proposed outfall structure location utilizing software such as HEC-RAS and/or utilizing basic Manning's Equation to compute water surface profiles with the inputs of cross-section data, roughness coefficients, and flow rates (determined from the Hydrologic Mapping).
- The **Engineer** will utilize results of the hydraulic modeling (including any iterations of the models necessary) to determine required and recommended geometric parameters of the outfalls. The **Engineer** will illustrate geometric parameters utilizing a typical section (or typical sections) that will provide shape of outfall, top and bottom width of outfall (top width only if triangular), depth of outfall, and recommended side slopes for outfall.
- Based on the geometric parameters established, the **Engineer** will determine the amount of needed outfall Right of Way (ROW) for use in further coordinating with impacted landowners (limited public involvement). Once ROW needs are established, locations of alignments of proposed outfalls will be re-investigated by the **Engineer** within property locations to determine optimal placement and minimize impacts. In addition, the **Engineer** will investigate optimizing of connection points (tie-ins) to the existing master drainage system in the area of the **Project**.
- The **Engineer** will prepare a generalized floodplain map based on the principal items of this task and shall research the existing Flood Insurance Rate Map (FIRM) within the area of the **Project**. The **Engineer** shall compare the results by superimposing the resulting floodplain mapping into the existing FIRM and submitting exhibit and discussion of proposed outfall impacts within the final feasibility report.

**MEET w/ COUNTY – HCDD#1 – TxDOT – CITY OF ALTON AND EXAMINE EXISTING HYDROLOGIC STUDIES**

The **Engineer** shall review and comment on all existing hydrologic studies within the project area. These studies will be researched with TxDOT, City of Alton, HCDD#1, and Hidalgo County Precinct #3. All information gathered will be compiled by the **Engineer**, and electronically filed for purposes of documentation. This information will be cross verified with the information developed in the previous noted tasks. Additional data collection gathered as a function of this task may include other hydrologic data such as precipitation data, evaporation data, existing and future land use information, soils data, topography (existing maps), aerial photography, wetland coverage, construction as-built drawings and preliminary schematics or plan sets for proposed future projects. All relevant information will be included in the analysis and final feasibility report that is part of this Work Authorization.

**IDENTIFICATION OF ALL AFFECTED PROPERTY OWNERS ON PROPOSED FACILITIES**

The **Engineer** will research and identify all affected property owners on each of the proposed outfall alignments utilizing the latest appraisal district file information from Hidalgo County Appraisal District. In addition, the **Engineer** will document any easements affecting parcels. If needed, the **Engineer** will obtain generalized title reports for affected properties for consistency and documentation (this work would be completed through the use of a reputable local title company). All information will be cross-referenced and cross-verified with land owners during our outreach meetings with affected landowners. The **Engineer** will maintain a summary of information on a parcel by parcel basis within a database for future usage. The **Engineer** will label all affected property owners on each of the alternatives being evaluated on the overall exhibit to be included in the final feasibility report.

**COORDINATION WITH LANDOWNERS DUE TO PROPOSED OUTFALL FACILITIES IMPACTING THEIR PROPERTIES (LIMITED PUBLIC INVOLVEMENT)**

The **Engineer** will coordinate numerous meetings with affected land owners on this project. The **Engineer** will ensure that the alignment of the proposed outfalls has the support and/or concurrence of the affected land owner(s) prior to finalizing the alignment (documentation of support will be retained on file for future usage). The **Engineer** will also coordinate meetings at the Hidalgo County Precinct #3 Conference Room with all affected parties so that final decisions can be made and retained on file. Dependent on the final assessment of proposed impacts, the **Engineer** will conduct limited public involvement which may include:

- Meetings with Individual Property Owners
- Informal Public / Community Meetings
- Informal Public / Community Workshops

**COORDINATION w/ TxDOT & FHWA ON LOGISTICS FOR UTILIZING FEDERAL EARMARK MONIES**

The **Engineer** will research and identify a plan of action for utilizing the appropriated federal monies assigned and/or earmarked for the **Project**. Noting that the monies are currently held by the Hidalgo County Metropolitan Planning Organization (HCMPO), the **Engineer** will provide outreach with HCMPO staff to ensure all parties are aware and informed of proposed project developments. The **Engineer** will coordinate with TxDOT to establish what steps would be required (and in what order) to be able to utilize the assigned federal monies for the **Project**. The **Engineer** will research any requirements and/or specifications needed to ensure compliance with federal processing for federal funding. The findings of this research will be presented to HCDD#1 and Hidalgo County Precinct #3 so that a benefit/cost relationship can be established.

**FEASIBILITY REPORT AND RECOMMENDATIONS**

The **Engineer** will compile all relevant information into a comprehensive “Feasibility and Recommendations” report. This report will summarize all of the findings of this Work Authorization and will serve as the basis for the Plan of Action moving forward as it relates to the Environmental Clearance, Design, ROW Acquisition, and Construction of the needed drainage outfalls within this **Project** area.

