

AI-38766

4.

DRAINAGE DISTRICT

Meeting Date: 05/21/2013

Submitted By: Sylvia Sanchez, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

Discussion and consideration for installation of low water crossing on Mission Lateral for no more than 30 days.

BACKGROUND

Form Review

Inbox	Reviewed By	Date
Budget & Management	Obdett Calzada	05/15/2013 08:27 AM
Final Approval	Monica Badillo	05/17/2013 05:29 PM
Form Started By: Sylvia Sanchez		Started On: 05/14/2013 04:34 PM
	Final Approval Date: 05/17/2013	

AI-38822

5.

DRAINAGE DISTRICT

Meeting Date: 05/21/2013

Submitted By: Jaime Salazar, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

A.) Requesting approval of Work Authorization No. 2 in the amount of \$585,649.27 for Engineering Services with L&G Engineering as it relates to US 83 Relief Route-Drainage Outfalls under the La Joya Watershed Improvement Project Contract.

B.) Requesting approval of final negotiated contract with Quintanilla, Headley & Associates as it relates to Survey, Metes and Bounds Description for San Carlos Dickerson Pond and San Carlos Aguilar Pond Pct.4. Previously approved for negotiations by HCDD1 Board of Directors on May 7, 2013.

BACKGROUND

Attachments

WA No.2

Aguilar Pond Pct.4

Dickerson Pond Pct.4

Form Review

Inbox	Reviewed By	Date
Budget & Management	Obdett Calzada	05/17/2013 11:54 AM
Final Approval	Monica Badillo	05/17/2013 05:29 PM
Form Started By: Jaime Salazar		Started On: 05/16/2013 03:31 PM
	Final Approval Date: 05/17/2013	



COUNTY COMMISSIONER PRECINCT 3
County of Hidalgo

Joe M. Flores
County Commissioner Pct. No. 3

May 16, 2013

Mr. Godfrey Garza, District Manager
Hidalgo County Drainage District No.1
902 N. Doolittle Rd.
Edinburg, Texas 78541

RE: La Joya Watershed Improvement Project – Work Authorization No. 2

Dear Mr. Garza,

As you are well aware, Hidalgo County Precinct #3 (HC Pct #3), Hidalgo County Drainage District No. 1 (HCDD#1) and the Texas Department of Transportation (TxDOT) have all partnered on performing various project development tasks for the US83 Relief Route Project. On May 9th, 2013, TxDOT conducted the last of their Public Meetings on this project where they presented to the public the Technically Preferred Alignment (TPA). As requested in a letter dated April 2, 2012 by Mr. Mario Jorge, P.E. from TxDOT (see attached); HC Pct #3 & HCDD#1 have engaged the services of L&G Engineering to assist in the tasks identified in the attached Work Authorization No. 2. Attached please find the following:

- Two (2) Original – Partially Executed versions of Work Authorization No. 2

The work identified in this Work Authorization No. 2 is a huge step in fulfilling the commitment the County has made to TxDOT in a letter I sent them dated April 18, 2013 (see attached). L&G Engineering has been working closely with my office, HCDD#1, and TxDOT to ensure that the project's schedule and milestone deliverables are met so as not to jeopardize the allocated construction dollars.

I would like to request that you place the above referenced item on the next HCDD#1 Agenda for the board's consideration.

Sincerely,

Joe M. Flores, Commissioner
Hidalgo County Precinct No. 3

cc: Reza Badiozzamani, P.E. – L&G Engineering

EXHIBIT "E"

**PROFESSIONAL ENGINEERING SERVICES CONTRACT # _____
WORK AUTHORIZATION FORM**

WORK AUTHORIZATION NO. 2

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 needed Outfalls for the US83 Relief Route Project hereinafter referred to as the "Project" as part of the La Joya Watershed Improvement Project.

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 \$585,649.27. This amount is based upon the costs outlined in the Estimated Cost Proposal attached hereto as EXHIBIT "D" (pages 1 ~ 4).

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 5/2 of the Agreement.

PART 4. FUNDING

**This Work Authorization No. 2 shall be funded through funding source:
Account No. _____
Requisition Number _____**

PART 5. PERIOD OF SERVICE

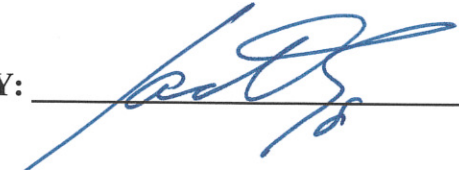
This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of scopes of the work authorization.

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. 2.

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”

Scope of 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 the 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:** US 83 Relief Route – Drainage Outfalls
- **Project Limits:** From US 83 Relief Route – South to Edinburg Main Canal

GENERAL SCOPE OF WORK:

The work to be performed by the **Engineer** under this Work Authorization shall consist of providing Engineering Services required for the preparation of a Schematic, Preliminary Property Ownership, Hydrologic Map, Hydraulic Analysis for Proposed Outfalls & Structure Sizing, Support to HCDD#1 & TxDOT on Project Development, Public Involvement w/ Affected Land Owners, Design Survey Coordination & Review, ROW Map Coordination & Review, Geotechnical Engineering, PS&E Development, and the Development of Plan Sheet Package to be Inserted Into TxDOT set of Plans with General Notes & Specs to be bid in Austin.

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”.

GENERAL SCOPE OF WORK:

The Scope of Work for this Work Authorization will be identified as follows:

- *Schematic for Outfall*
- *Office Surveys for Schematic*
- *Hydrologic Map*
- *Hydraulic Analysis for Proposed Outfalls and Structure Sizing*
- *Support to HCDD#1 & TxDOT on Project Development*
- *Public Involvement for Vetting of Location of Outfall with Affected Land Owners*
- *Design Surveys Coordination & Review*
- *ROW Map Coordination & Review*
- *Geotechnical Engineering, Testing, & Report*
- *PS&E Development for Needed Outfalls & Structure Crossings*
- *Develop Plan Sheet Package to be Inserted Into TxDOT set of Plans with General Notes & Specs to be bid in Austin*

SCHEMATIC FOR OUTFALL

After the proposed centerline is approved by both TxDOT & HCDD#1, the **Engineer** will develop a design schematic for use in the Public Meetings as well as a formal submittal to TxDOT & HCDD#1.

Design Criteria

- A Design Concept Conference (DCC) will be held to discuss and review the design criteria. The **Engineer** will prepare a Meeting Summary Report which will describe in detail the decisions made at the DCC and distribute it to everyone in attendance.
- The **Engineer** will prepare a preliminary construction cost estimate and submit it to TxDOT & HCDD #1.

Design Schematic

- The **Engineer** will develop a preliminary design schematic, based on the alignment previously selected, and submit to TxDOT & HCDD #1 for review.
- The **Engineer** will revise the schematic to incorporate TxDOT's & HCDD #1's comments.
- The **Engineer** will meet with TxDOT & HCDD #1 to discuss modifications, if any, to the design schematic. The **Engineer** will incorporate the changes agreed upon, into the schematic and submit the revised schematic to both TxDOT & HCDD #1.
- After receiving approval of the design schematic from both TxDOT & HCDD #1, the **Engineer** will proceed with finalizing the design and complete the PS&E.
- The Schematic details will be completed to TxDOT's requirements.

Irrigation Structures

- The **Engineer** will define the horizontal layout of the irrigation system in place and draw on the schematic the basis for maintaining the irrigation system whole. The **Engineer** will design a "Bridge Structure" to maintain water flow for the Irrigation District.

OFFICE SURVEYS FOR SCHEMATIC

Preliminary Property Ownership

- During the development of the Schematic, the **Engineer** will research the existing property owners along the proposed route. This information will be the latest available from Hidalgo County Appraisal District.

HYDROLOGIC MAP

Drainage & Hydrologic Analysis

- The **Engineer** will develop a Hydrologic Map for the project analyzing the watersheds & drainage areas contributing to the proposed outfall. The Engineer will coordinate with the Hidalgo County Drainage District No. 1, the affected Irrigation District, and TxDOT.
- The **Engineer** shall develop the peak flow rates, identified in the **Project** drainage watersheds that are located in Precinct #3, with any available data from the National Flood Insurance Program (NFIP) or other studies to determine consistency of results.

HYDRAULIC ANALYSIS FOR PROPOSED OUTFALLS AND STRUCTURE SIZE

Hydraulic Analysis

- 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 (a) through (e) below.
 - a. The **Engineer** shall create the terrain Triangulated Irregular Network (TIN), if not provided by the Owner. This will be developed from the field survey, aerial photogrammetry, and topographic mapping data in the development of a point table.
 - b. The **Engineer** shall create 2-D 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.
 - c. 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-D cross-section theme.
 - d. 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.
 - e. 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.
- B. 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 comparison.

SUPPORT TO HCDD#1 & TxDOT ON PROJECT DEVELOPMENT

The **Engineer** will act as the liaison between both HCDD#1 and TxDOT on all technical issues related to project development. The **Engineer** will ensure that all Project Development Activities are well coordinated between both entities. The **Engineer** will provide HCDD#1 with monthly progress reports and narratives of the latest developments related to the project.

PUBLIC INVOLVEMENT FOR VETTING OF LOCATION OF OUTFALL WITH AFFECTED PROPERTY OWNERS

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 prior to finalizing the alignment. The **Engineer** will also

coordinate meetings at the Hidalgo County Pct #3 Conference Room with all affected parties so that a final decision can be made moving forward.

The **Engineer** will support TxDOT on all exhibits related to this scope of services at their formal Public Meetings (PM). The **Engineer** will ensure that the exhibits are approved by HCDD#1 and TxDOT prior to showing them at the PM.

DESIGN SURVEYS COORDINATION & REVIEW

The **Engineer** will coordinate with the Surveyor that TxDOT is going to hire to ensure that all Design Survey deliverables are correct. The review process that the **Engineer** will follow will ensure that the PS&E is done correctly, all structures are proposed at the correct elevation, etc. The **Engineer** will hold bi-weekly coordination meetings with TxDOT and the Surveyor to address any issues/concerns that may arise on the project.

ROW MAP COORDINATION & REVIEW

The **Engineer** will coordinate with the Surveyor that TxDOT is going to hire to ensure that all ROW Mapping Survey deliverables are correct. The review process that the **Engineer** will follow will ensure that the amount of ROW Parcels are minimized and that no un-necessary land owners are affected. The **Engineer** will hold bi-weekly coordination meetings with TxDOT and the Surveyor to address any issues/concerns that may arise on the project.

GEOTECHNICAL ENGINEERING

Note: All work under this section of the “Scope of Services” will be done via a sub-consultant contract between the **Engineer** and L&G Engineering Laboratory, hereinafter called the “**Laboratory**”.

The work to be performed by the **Laboratory** under this Work Authorization shall consist of; Geotechnical Drilling and Miscellaneous Field Services, Geotechnical Laboratory Testing Services and Geotechnical Engineering Services for the US 83 Relief Route Outfalls project hereinafter denoted as the **Project**.

The **Laboratory** shall provide all services required (as noted under this Work Authorization) for usage by the **Engineer** in the preparation of plans, specification and estimate, and related documents for the Project. The **Laboratory** shall maintain a direct line of communication and coordinate with the **Engineer** throughout the **project**.

The **Laboratory** shall furnish all equipment, materials, supplies, and incidentals as needed to perform the services required, except as otherwise specified to be provided by the **Engineer**.

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

- I. Geotechnical Drilling Services and Miscellaneous Field Services

The **Laboratory** will coordinate with the **Engineer** for verification of project vicinity map indicating general boring site locations.

The **Laboratory** will provide drilling/excavation and sampling of subsurface materials as follows in accordance with this Work Authorization and in conformance with TxDOT and ASTM guidelines:

- Nine (9) Borings will be drilled at locations of proposed culverts (Borings will be advanced to a depth of approximately 20 feet below the existing top of natural ground)
- Ten (10) Borings will be drilled along the proposed channel alignment (Borings will be advanced to a depth of approximately 30 feet below the existing top of natural ground)
- One (1) Boring will be drilled at location of the proposed irrigation structure (Boring will be advanced to a depth of approximately 50 feet below the existing top of natural ground)

The **Laboratory** will stake the boring locations and provide utility clearances prior to performing the field exploration portion of the project. The **Engineer** will be responsible to provide any necessary permits or authorization to access areas (right of entry) where borings are to be drilled. All borings will be located in the field by a representative of the **Laboratory**. All boring locations will be documented with GPS coordinates. Field survey and tie-down locations of all borings will be the responsibility of the **Engineer**.

The borings will be advanced to the specified depth(s) and in-situ soil testing will be performed in general accordance with ASTM and/or TxDOT Standard Test Procedures and Geotechnical Manual (ASTM D1586 – Standard Penetration Testing (SPT) and/or Tex-132-E – Texas Cone Penetration (TCP)). In addition, where applicable, thin-walled Shelby tube samples may be collected (ASTM D1587 – Thin Walled Tube Sampling). The soils will be sampled as needed to verify subsurface materials and strata changes. Final drilling depths and elevations will be based on topographic conditions at the time of drilling operations.

All samples will be removed from the sample apparatus during drilling operations. The **Laboratory** will conduct various field tests on the recovered samples, visually classify the samples, and record the appropriate data on a field boring log. The samples will be appropriately packaged to minimize loss of natural moisture content and to reduce the possibility of damage during transportation to the soil testing laboratory facility.

Drilling services will include an initial water strike depth and a 24-hour water level reading at each boring location. Following completion of drilling and sampling, all boreholes will be backfilled with soil cuttings from the completed borings. If there is insufficient soil cuttings available, alternate fill will be used to backfill the completed boreholes.

This proposal does not include activities and corresponding costs that may be associated with the following:

- Providing an ATV mounted drill rig, dozer or special equipment to clear areas of vegetation and debris or re-grading the site to gain access to the boring locations;
- Re-grading the site or portions of the site after drilling activities are completed;
- Site safety meetings that may be required;
- Encountering hazardous or contaminated soils or substances during our field activities.

The **Laboratory** will notify the **Engineer** should these services become necessary to complete field exploration activities, and if approved by the **Engineer**, additional negotiated fee and scope will be incorporated through Supplemental Work Authorization.

II. Geotechnical Laboratory Testing Services

Geotechnical Laboratory Testing will be performed by the **Laboratory** on the samples recovered during the field study to evaluate their physical and engineering properties. Laboratory testing will be performed in general accordance with ASTM and/or TxDOT Standard Test Procedures. Testing shall include the following test procedures:

- (1) Atterberg Limits (ASTM D4318 or Tex-104-E, 105-E, 106-E)
This procedure will be used to aid in the classifying of the soil and to provide information on the potential vertical rise and contraction of the soil. Test data furnished will include Liquid Limit, Plasticity Index, and Linear Shrinkage test results.
- (2) Gradation (-200) (ASTM D1140 or Tex-111-E)
This procedure will be used to aid in the classifying of the soil. A No. 200 sieve will be used to distinguish fine grained material as well as for cohesive soils.
- (3) Lab. Determination of Moisture in Soils (ASTM D2216 or Tex-103-E)
This procedure will aid in determining the in-situ moisture of the soil to be able to evaluate the potential vertical rise and contraction of the soil.
- (4) Particle Size (Sieve) Analysis with Hydrometer (ASTM D422)
This procedure will aid in determining the complete gradation (full gradation curve) of a soil sample including hydrometer for tail-end portion of gradation curve. Full gradation curve can be utilized to extract D50 and D90 soil particle diameters for use in scour analysis and prediction for foundation design.
- (5) Sulfate Content of Soil (ASTM C1580 or Tex-145-E)
This procedure will identify the soluble sulfate content of soil by using the colorimetric method. The results of this procedure are typically utilized to determine whether or not a subgrade material can be lime treated for stabilization or if other methods of stabilization will need to be proposed. The presence of extreme amounts of soluble sulfates will exclude lime treatment as a stabilization option. Additionally, high presence of sulfates in soils can mark a necessity for the use of Sulfate Resistant Concrete (> than 1000 ppm).

III. Geotechnical Engineering Services

The **Laboratory** will utilize information gathered from the field and laboratory testing to provide the **Engineer** with Geotechnical Engineering results and analyses for the **Project**. The findings and conclusions derived from the results and analyses will be presented in a written engineering report and provided to the **Engineer** (three (3) copies). The report will include a boring location plan, boring logs with laboratory classification of recovered soil samples at the boring locations and subsurface water conditions encountered. The report will provide analyses and/or engineering recommendations as follows:

- Develop Plan View of Boring Logs and Classification of Soil Strata
 - Plan view and location scheme of borings will be developed based on preliminary site investigations. Laboratory classification testing and inspection of the soil samples will be reviewed by a Geotechnical **Engineer** to provide soil classification for engineering purposes in accordance with ASTM D2487 (United Soil Classification System – USCS).
- Strength Parameters and Structural Evaluation of Soil Borings
 - A detailed structural evaluation of the borings will be done so that soil strength parameters can be quantified for usage in overall global stability calculations and estimation of consistency of in-situ strata. In addition, strength parameters will be correlated based on field strength testing for usage in deep and shallow structural foundation design.
- Soil Slope Stability Analysis (GSTABL) for Channel
 - A geometric model will be constructed for each of the proposed cross-sections (major cross sections) to ensure accurate modeling of the proposed configuration. A limit equilibrium slope stability analysis will be conducted for each of the locations to ensure adequate factors of safety.
- Soil Scourability and Establishment of D50-D90 Values
 - Results of full sieve and hydrometer analyses and soil classifications will be used to provide soil scour parameters for use in Scour Analysis at structure locations. Determination of extent of scour will be of importance at locations of structure foundations.
- Foundation Analysis and Design for Structures/Crossings
 - Shallow Foundation Analysis and Design Parameters (Culverts)
 - Shallow foundation analyses will include calculation of site specific allowable bearing capacities and evaluation of settlement parameters (as applicable). The **Laboratory** shall, as a function of this task, provide assistance to the **Engineer** in the design of final shallow foundations. If soft soils or problematic geotechnical conditions are found, the **Laboratory** will document locations and provide recommendations.
 - Deep Foundation Analysis and Design Parameters (Brg. Drilled Shafts, Piling, etc.)
 - Deep foundation analyses will include calculation of site specific point bearing and skin friction models and generation of foundation capacity curves.

Final foundation capacity curves will be calculated utilizing the TCP data in TxDOT Wincore Design format. The **Laboratory** shall, as a function of this task, provide assistance to the **Engineer** in the design of final deep foundations. This task is specific to the proposed structure crossing at the irrigation canal.

- Evaluation & Recommendations on Soil Chemical Properties (Sulfate Content)
 - The **Laboratory** will investigate sulfate contents throughout the project at the locations and depths that will be in contact with proposed structures (culverts, drilled shafts, piles). The establishment of high sulfate content areas may necessitate a change in concrete design and/or the use of sulfate resistant concrete mixes. The **Laboratory** will provide recommendations based on the findings.
- Culvert/Channel Recommendations – Geometry, Geotech. Issues, Limits, Construction
 - The **Laboratory** will consolidate all information, calculations and analyses to provide overall recommendations on both culvert locations and channel cross sections. Recommendations will cover geometry, design, issues noted through the investigation process and construction.

The report will provide general comments and applicable recommendations regarding construction methods, sequences, and potential difficulties that may arise during overall construction as it relates to the soil aspects of this project. This information may serve to guide both geometric modeling and foundation selection and design (culverts/shafts/piles) as well as provide assistance in the preparation of specifications for the project.

PS&E DEVELOPMENT FOR NEEDED OUTFALLS & STRUCTURE CROSSINGS

DESIGN

- 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 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 2004 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.

- **STORM WATER POLLUTION PREVENTION PLAN (SW3P)**

The **ENGINEER** shall complete the plans adequately addressing a storm water pollution prevention plan for the entire project during all phases of construction. SW3P plans shall **generally** include the following drawings:

- **Summary Sheet**
- **Details & Standards**

The **Engineer** shall develop a project specific Storm Water Pollution Prevention Plan (SW3P) to comply with the Federal Regulations (40 CFR part 122) published in the Federal Register on Sept. 9, 1992.

Develop Plan Sheets to be Inserted Into TxDOT set of Plans with General Notes & Specs to be bid in Austin

The **Engineer** shall prepare a package for submittal to TxDOT Pharr District, as well as TxDOT Design Division in Austin. This package will have any and all necessary information for TxDOT to approve inclusion of the plan set into their bidding documents. The package will include, but not be limited to:

- General Notes
- Construction Specifications
- Estimated Quantity Summary Sheets
- Plan Set (11 X 17)
- Bid Package Documentation

**EXHIBIT D - WA #2
FEE PROPOSAL**

**La Joya Watershed Improvement Project
HIDALGO COUNTY DRAINAGE DISTRICT #1**

		MANHOURS								L&G TOTAL HOURS	Lump Sum and/or Sub-Contract Amounts
		Senior Project Manager	Senior Engineer	Design Engineer	Senior Engineering Technician	ROW Administrator	Senior Environmental Scientist	Environmental Scientist	Admin / Clerical		
TASK											
La Joya Relief Route Analysis											
1	Schematic for Outfall (Roll 1 of 2 & Roll 2 of 2)	30	76	235	235					576	
2	Office Surveys for Schematic (Preliminary Ownership Identification and Property Rights)	4	12	25	32			40		113	
3	Hydrologic Map	12	24	80	100					216	
4	Hydraulic Analysis for Proposed Outfalls and Structure Sizing	6	20	70						96	
4a	SUB - Drainage Analysis and Report for DA#4									\$23,440.00	
5	Support to HCDD#1 & TxDOT on Project Development (i.e. Meetings with Land Owners, Public Meeting, Coord. w/ County)	40		36				40		116	
6	Public Involvement for Vetting of Location of Outfall with Affected Land Owners	12		24				50		86	
7	Design Surveys Coordination & Review (Provided by TxDOT)	2		32	8					42	
8	ROW Map Coordination & Review (Provided by TxDOT)	6	12	14	18	22		40		112	
9	SUB - Geotechnical Engineering, Testing & Report									\$64,938.06	
10	PS&E Development for Needed Outfalls & Structure Crossings	140	300	1020	1600			150		3210	
11	Develop Plan Sheet Package to be inserted into TXDOT set of Plans with Gen Notes and Specs to be bid in Austin	10	22	72	114			12		230	
Subtotal Hours		262	466	1608	2107	22	0	0	332	4797	
Contract Hourly Rate		\$ 68.00	\$ 56.00	\$ 36.00	\$ 25.00	\$ 34.00	\$ 43.00	\$ 25.00	\$ 18.00		
Direct Salary Cost		\$ 17,816.00	\$ 26,096.00	\$ 57,888.00	\$ 52,675.00	\$ 748.00	\$ -	\$ -	\$ 5,976.00		
Overhead Multiplier 171.00%		\$ 30,465.36	\$ 44,624.16	\$ 98,988.48	\$ 90,074.25	\$ 1,279.08	\$ -	\$ -	\$ 10,218.96		
Fixed Fee 12.00%		\$ 5,793.76	\$ 8,486.42	\$ 18,825.18	\$ 17,129.91	\$ 243.25	\$ -	\$ -	\$ 1,943.40		
Total Labor Costs		\$ 54,075.12	\$ 79,206.58	\$ 175,701.66	\$ 159,879.16	\$ 2,270.33	\$ -	\$ -	\$ 18,138.36	\$ 489,271.21	\$88,378.06

Project Team Cost Proposals - Sub Consultants

Civil Systems Engineering, Inc.
L&G Engineering Laboratory

Cost Proposal

\$23,440.00 (See detailed break-down of fee on Page 2 of 4)
\$64,938.06 (See detailed break-down of fee on Page 3 of 4 & 4 of 4)

L&G Direct Expenses

20 Ft. Long by 3 Ft. Tall Hydrologic Map & Schematics (60sq. ft.) @ \$5.00/sq. ft. - 10 Total Prints \$ 3,000.00
10 Sets of Plans and a Geo Report - As per Contract Requirements \$ 5,000.00

Grand Total \$ 585,649.27

**Exhibit D – WA#2
Fee Proposal**



**ESTIMATED MANHOURS AND COSTS BY TASKS
LA JOYA RELIEF ROUTE DRAINAGE ANALYSIS PROJECT**

No	Tasks	Project Manager	Project Engineer	GIS Specialist	Total
	Rate (\$/hr)	160	150	140	
1	Coordination and Meetings	4	4		1,240
2	LiDAR data processing & drainage basin delineations	4	16	16	5,280
3	Estimation of drainage hydrologic parameters	4	12		2,440
4	Gamma Function based Unit Hydrographs	4	32		5,440
5	HEC-HMS model development & simulations	4	32		5,440
6	Drainage Analysis Report	4	16	4	3,600
	Total	24	112	20	<u>\$23,440</u>

**Attachment D
Estimated Cost Proposal**

Geotechnical Engineering, Report & Summary



L&G ENGINEERING LABORATORY

US 83 Relief Route Outfalls Consulting Engineers, Inc.			MANHOURS				Total
			Senior Project Manager	Senior Geotechnical Engineer	Design Engineer	CADD Tech	
TASK							
1	Develop Plan View of Boring Logs, Location Scheme, Graphic Files			2	8	4	14
2	Structural Evaluation of Borings (Soil Strength & Compress Analysis)			4	12		16
3	Soil Slope Stability Analysis (GSTABL) for Channel			16	32	4	52
4	Soil Scourability (D50-D90 Value Establish, Trend)			4	12		16
5	Shallow Foundation Analysis (Culverts) - BC, Settlement, Soft Soils			8	16		24
6	Deep Foundation Analysis (Brg. Drilled Shafts, Piling, etc.) - Found. Cap. Curves			6	12		18
7	Evaluation & Recommendation on Chemical Soil Properties at Structures (Sulfates)			4	8		12
8	Culvert/Channel Recommendations - Geometry, Geotech. Issues, Limits, Const.	4		8	12	4	28
9	Geotechnical Report, Soil Geology, Site Soils, Analyses, Recs.	8		12	24	12	72
10	Meeting and Coordination	4					4
	Subtotal	16		64	136	24	256
Labor Hours			16	64	136	24	256
Hourly Base Rates			\$ 65.00	\$ 55.00	\$ 40.00	\$ 21.00	\$ 15.00
Direct Salary Cost			\$ 1,040.00	\$ 3,520.00	\$ 5,440.00	\$ 504.00	\$ 240.00
Contract Rate w/ Audited Overhead Rate of 183.99% & 12% Profit			\$ 219.47	\$ 174.94	\$ 127.23	\$ 66.79	\$ 47.71
Total Labor Costs			\$ 3,511.52	\$ 11,196.16	\$ 17,303.28	\$ 1,602.96	\$ 34,377.28

LINE ITEM EXPENSES

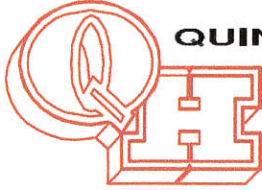
Printing Reproduction (Estimated 3 Reports x 80 Pages per Report x \$1.00 per Page)	\$ 240.00
*L&G Engineering Laboratory (Sub-Total for Geo. Field & Lab Services)	\$ 30,320.78
* - (Please see page 2, for detailed estimates of testing)	
Total Expenses	\$ 30,560.78

L&G Laboratory Total Cost

\$ 64,938.06

Attachment D
Estimated Cost Proposal
Geotechnical Field and Laboratory Services
US 83 Relief Route Outfalls
 Prepared for L&G Consulting Engineers, Inc.

	SERVICES		UNITS	UNITS	UNIT COST	TOTAL COST
I.	Project Management / Review					
	A. Principal / Project Manager / Review		Hours			
	B. Senior Project Engineer (Staff)		Hours	4	\$ 174.94	\$ 699.76
	C. Typing and Clerical (Report)		Hours			
	D. Lodging		Day			
	E. Mileage		Mile			
	F. Air Travel		Trip			
II.	Utility Clearances / Boring Locates					
	A. Technician (Locate Borings)(Util Clr)		Hours	8	\$ 41.35	\$ 330.80
	B. Staff Engineer/Geologist/Scientist		Hours			
	C. Rebar (stakes with impalement covers)		Cost +12.5%			
	D. Vehicle Charge		Mile			
	E. Mileage		Mile	80	\$ 0.55	\$ 44.00
	F. Survey Locate Borings (X,Y,Z)		LS			\$ -
III.	Field Exploration					
	A Mobilization/Demobilization		Day	7	\$ 250.00	\$ 1,750.00
	B Field Exploration					
	1a. ASTM Drill & SPT/Tube Samp (SS)		Feet	480	\$ 18.00	\$ 8,640.00
	1b. ASTM Drill & SPT/Tube Samp (Mud)		Feet		\$ 27.00	\$ -
	1c. TxDOT Drill St incl/ Tube Samp (SS)		Feet	50	\$ 18.00	\$ 900.00
	2. TxDOT TCP Field Test (BL/ft)		Ea.	10	\$ 15.00	\$ 150.00
	3. Field Logger / Engineering Tech		Hour	70	\$ 41.35	\$ 2,894.50
	4. 24 Hr. Water Level Observations		Hour	8	\$ 41.35	\$ 330.80
	5. Piezometers		Each			\$ -
	6. Supp. Vehicle-Trailer, Tools Water Supply		Mile	560	\$ 2.00	\$ 1,120.00
	7. Vehicle Charge		Mile	640	\$ 0.55	\$ 352.00
	C Miscellaneous Field Services					
IV.	Engineering Data Analysis / Report					
	1. Staff Engineer		Hours			
	2. Engineering Spec. (Soil Classification)		Hours	14	\$ 108.14	\$ 1,513.96
	3. Engineering Spec. (Logs & Summaries)		Hours	14	\$ 108.14	\$ 1,513.96
	4. Moisture Content		Ea.	106	\$ 8.50	\$ 901.00
	5. Atterberg Limits		Ea.	53	\$ 65.00	\$ 3,445.00
	6. -200 Determination		Ea.	53	\$ 60.00	\$ 3,180.00
	7. Sieve Analysis (w/ Hydrometers)		Ea.	20	\$ 85.00	\$ 1,700.00
	8. UC Testing (w/ Unit Weight)		Ea.		\$ 50.00	\$ -
	9. Consolidation Testing		Ea.		\$ 475.00	\$ -
	10. Dry Unit Weight		Ea.			\$ -
	11. Soils Sulfate Content (Bridge/Culv.)		Ea.	9	\$ 95.00	\$ 855.00
	12. Determination of Soil pH		Ea.		\$ 70.00	\$ -
Project Sub-Total (Geo Field and Lab)						\$ 30,320.78



Consulting Engineers ★ Land Surveyors

Alfonso Quintanilla, P.E., R.P.L.S. Eulalio Ramirez, P.E.
Engineering Firm Registration No. F-1513
Surveying Firm Registration No. 100411-00
Municipal & County Projects ★ Subdivisions ★ Surveys

May 14, 2013

Mr. Godfrey Garza, Jr.
District Manager
Hidalgo County Drainage District No.1
902 North Doolittle Road
Edinburg, Texas 78541

Re: Pct. No.4 San Carlos Aguilar Pond (47.66 Acres)

Location: Northwest corner of Curve Road and Dillon Road

Dear Mr. Garza:

I am pleased to submit this proposal to provide the professional surveying services for this project.

The scope of services is:

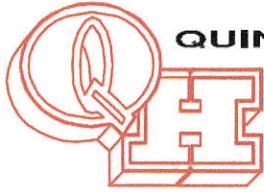
- Boundary Survey
- Metes and Bounds Description

Cost: \$ 2,800.00

Should you have any questions or need additional information, please feel free to call me at 381-6480.

Respectfully,

Alfonso Quintanilla, P.E., R.P.L.S.
President



Consulting Engineers ★ Land Surveyors

Alfonso Quintanilla, P.E., R.P.L.S. Eulalio Ramirez, P.E.
Engineering Firm Registration No. F-1513
Surveying Firm Registration No. 100411-00
Municipal & County Projects ★ Subdivisions ★ Surveys

May 14, 2013

Mr. Godfrey Garza, Jr.
District Manager
Hidalgo County Drainage District No.1
902 North Doolittle Road
Edinburg, Texas 78541

Re: Pct. No.4 San Carlos Dickerson Pond (201.11 Acres)

Location: From Tex-Mex Road to Drain Ditch and from Dillon Road to Sunflower Road

Dear Mr. Garza:

I am pleased to submit this proposal to provide the professional surveying services for this project.

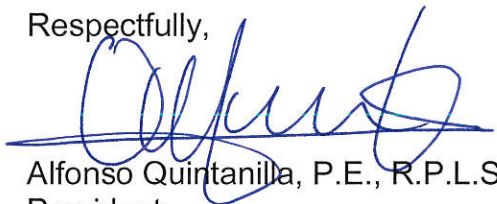
The scope of services is:

- Boundary Survey
- Metes and Bounds Description

Cost: \$ 3,500.00

Should you have any questions or need additional information, please feel free to call me at 381-6480.

Respectfully,



Alfonso Quintanilla, P.E., R.P.L.S.
President

AI-38828

6.

DRAINAGE DISTRICT

Meeting Date: 05/21/2013

Submitted By: Sylvia Sanchez, DRAINAGE
DISTRICT

Department: DRAINAGE DISTRICT

Information

CAPTION

Approval of Budget Amendment for Work Authorization No.2 to fund L&G Engineering (\$585,649.27 - 2013 Bond Series) as it relates to US 83 Relief Route-Drainage Outfalls La Joya Watershed Improvement Project.

BACKGROUND

Attachments

BUD AMEND.

Form Review

Inbox	Reviewed By	Date
Budget & Management	Obdett Calzada	05/17/2013 11:54 AM
Final Approval	Monica Badillo	05/17/2013 05:29 PM
Form Started By: Sylvia Sanchez		Started On: 05/16/2013 05:00 PM
	Final Approval Date: 05/17/2013	

AI-38840

7.

DRAINAGE DISTRICT

Meeting Date: 05/21/2013

Submitted For: Martha L. Salazar

Submitted By: Yolanda Velasquez,
PURCHASING DEPT.

Department: PURCHASING DEPT.

Information

CAPTION

A. Presentation of recommendations submitted by Ms. Norma Garcia, Hidalgo County Treasurer for the previously approved Depository Bank Agreement thru Hidalgo County Board of Directors action of (04-30-2013) including, but not limited to action to accept and/or reject all or only some of the recommendations for inclusion in the as yet **not executed** Depository Agreement;

B. Approval of signatures for new depository bank.

C. Authorization for County Treasurer to facilitate and coordinate the opening of applicable bank accounts as well as the closing of applicable bank accounts for auditing purposes.

BACKGROUND

Form Review

Inbox	Reviewed By	Date
Budget & Management	Obdett Calzada	05/17/2013 02:57 PM
Final Approval	Monica Badillo	05/17/2013 05:29 PM
Form Started By: Yolanda Velasquez		Started On: 05/17/2013 11:20 AM
	Final Approval Date: 05/17/2013	