EXHIBIT "E"
HIDALGO COUNTY
Professional Engineering Services
Agreement # C-22-0086-05-31
(ARPA-22-124-049)

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of the **Professional Engineering Services** Agreement No. C-22-0086-05-31, incorporated herein by reference, for the "**Hidalgo County Precinct 4 Mile 17 RD Stormwater Project**" made by and between **HIDALGO COUNTY**, action herein by and through the **Commissioner's Court**, hereinafter called the "**Owner**," and **L&G Consulting Engineers, Inc.**, hereinafter called "**Engineer**".

PART 1. SCOPE OF WORK

The purpose of this Work Authorization is for the Engineer to provide **Drainage Improvement Studies and Designs for the Hidalgo County Precinct 4 Mile 17 Rd Stormwater Project.**

The **Engineer** is to provide the scope of Services as required by the Agreement with Owner.

The scope of services to be provided by the **Engineer** is identified in **Attachment "A"** – *Project Specific Scope of Services to be provided by Engineer* attached hereto and incorporated by reference.

PART 2. ESTIMATED COST

The estimated cost for services under this Work Authorization is **$54,976.64**. This amount is based upon the costs outlined in the **Attachment "B"** – *Contract Rates* attached hereto and incorporated by reference.

PART 3. PAYMENT

Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with the **Professional Engineering Services** Agreement No. C-22-0086-05-31 between the **Owner** and the **Engineer**.

PART 4. FUNDING

This Work Authorization No.1 shall be funded through funding source:
Account No. _____
Requisition Number _____ **(MUST BE INCLUDED AFTER CC APPROVAL)**

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 the scopes of the Work Authorization, within the limits of Agreement No. C-22-0086-05-31, provided in this Work Authorization; or on (DATE)**. ***If applicable***: Engineer shall conform to the

approved "Work/Project Schedule", attached hereto and incorporated by reference herein as **Attachment "C"**.

PART 6. RESPONSIBILITIES AND OBLIGATIONS

This Authorization does not waive the parties' responsibilities and obligations provided under the **Agreement No. C-22-0086-05-31.**

PART 7. ACKNOWLEDGEMENT AND CONFIRMATION

Acknowledgement and confirmation by Hidalgo County Precinct No. 4 Commissioner Ellie Torres, as to content and detail of this Work Authorization No. 1.

HIDALGO COUNTY
COMMISSIONER PRECINCT No. 4:

BY: _____

[Signature Page to Follow]

EXECUTED as of the day and year first written above.

APPROVED BY COMMISSIONERS' COURT ON May 31, 2022.

Agenda Item No. 85981

Executive Office: _____

VENDOR:
L&G Consulting Engineers, Inc.

_____
Jacinto Garza, P.E., President

COUNTY:
COUNTY OF HIDALGO

_____
Hon. Richard F. Cortez, County Judge

APPROVED AS TO FORM
Office of the Criminal District Attorney,
Ricardo Rodriguez, Jr.

_____N/A_____
N/A, Assistant District Attorney

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

LIST OF ATTACHMENTS:
Attachment "A" – *Project Specific Scope of Services to be provided by Engineer*
Attachment "B" – *Contract Rates*
Attachment "C" – *Approved Work/Project Schedule*

ATTACHMENT A

PROJECT SPECIFIC SCOPE OF SERVICES
TO BE PROVIDED BY ENGINEER

ATTACHMENT A

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 1-PROJECT DESCRIPTION

The services designated herein as "Services provided by the ENGINEER" shall include the performance of all engineering services for the following described facility:

COUNTY/CITY: Hidalgo County

CONTROL: _____

PROJECT/DESCRIPTION: WA #1 – Mile 17 From Alamo Rd. to North Branch Drain

LENGTH: _____

LIMITS: **ARPA Funded Drainage Improvement Project**

PROJECT CLASSIFICATION

(Place an "X" in only one Project Classification)

___ Surface Treatment
___ Overlay
___ Rehabilitation Existing Road (Scarify & Reshape)
___ Convert Non-Freeway to Freeway
___ Widen Freeway
___ Widen Non-Freeway
___ New Location Toll Freeway
___ New Location Non-Freeway
___ Interchange (New or Reconstruct)
___ Bridge Widening or Rehabilitation
___ Bridge Replacement
___ Upgrade to Standards - Freeway
___ Upgrade to Standards - Non-Freeway
_X_ Drainage Improvements

ENGINEER shall mean L&G Engineering

COUNTY/OWNER shall mean Hidalgo County.

ATTACHMENT "A"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 2 – FEASIBILITY STUDIES

Services Provided By: ENGINEER	COUNTY	
YES	NO	Preliminary Design Values *The Engineer will work with the Owner to establish basic design concepts, project controls and general scope of Projects.*
YES	NO	Preliminary Drainage & Route Locations on Uncontrolled Mapping *The Engineer will evaluate various alternatives (route locations, alignment shifts, geometry) for the Project.*
YES	NO	Uncontrolled Mapping (w/Contours & GIS Info) *The Engineer will investigate the existing routes and coordinate with the Owner on establishing the best-fit alignments and mapping proposed geometry for Projects. Preliminary Location Exhibit will be developed.*
NO	NO	Preliminary Traffic Evaluations & Trends *The Engineer will investigate existing traffic models and trends for the proposed Projects and adjacent roadways tying into the proposed Projects.*
NO	NO	Preliminary Hydrologic Map *The Engineer will develop a Hydrologic Map for the Projects. Hydrologic Maps will be based on LIDAR and GIS information.*
NO	NO	Preliminary ROW Requirements *The Engineer will research and identify affected property owners on the Projects utilizing the latest appraisal district file information from Hidalgo County Appraisal District and information from Carson Maps.*
YES	NO	Preliminary Cost Estimates *The Engineer will calculate preliminary construction cost estimates for the location and geometry of the Projects.*
NO	NO	Preliminary Environmental Analysis (for fatal flaws) *The Engineer will perform Preliminary Environmental Constraint Mapping to determine if any fatal flaws exist along the proposed alignment.*
NO	NO	Project Fact Sheet with Est. Local Cost vs. Total Project Cost *The Engineer will produce a Project Fact Sheet providing summaries of all pertinent items in this scope of services (as required) and providing estimated local costs vs. total project costs for the Projects.*
YES	NO	Meetings, Coordination & Support for Project Development *The Engineer shall provide coordination services and shall assist in meetings and workshops with Hidalgo County & Hidalgo County Drainage District No. 1, along with all other affected parties. The Engineer shall serve as representative for the Owner in coordination items. The Engineer shall coordinate with the Owner's staff on all Project related items.*

ATTACHMENT "A"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 3 - ROUTE AND DESIGN STUDIES

Services Provided By: ENGINEER	COUNTY		
NO	NO	1.	Drainage Route Location Studies
NO	NO	2.	Level of Service Analysis
NO	NO	3.	Traffic Evaluations/ Projections
NO	NO	4.	Develop Roadway Design Criteria
YES	NO	5.	Preliminary Cost Estimates
YES	NO	6.	Design Schematic
NO	NO	7.	Preliminary Right-of-Way Requirements
YES	NO	8.	Design Concept Conference
		9.	Soil Core Hole Drilling
NO	NO		a. Pavement
NO	NO		b. Retaining Walls
YES	NO		c. Miscellaneous Structures
NO	NO		d. Bridges

ATTACHMENT "A"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 6 - FIELD SURVEYING AND PHOTOGRAMMETRY

Services Provided By:
ENGINEER COUNTY

DESIGN AND CONSTRUCTION SURVEYS:

PURPOSE:

The purpose of a "design survey" is to provide field information in support of transportation systems design.

The purpose of a "construction survey" is to provide field data in support of highway construction.

DEFINITIONS:

A "design survey" is defined as the combined performance of research, field work, analysis, computation, and documentation necessary to provide detailed topographic (3-dimensional) mapping of a project site. A design survey may include, but need not be limited to, cross-sections or data to create cross-sections and Digital Terrain Models (DTM), horizontal and vertical location of utilities and improvements, detailing of bridges and other structures, review of right-of-way maps, establishing control points, etc.

A "construction survey" is defined as the combined performance of reconnaissance, field work, analysis, computation, and documentation necessary to provide the horizontal and vertical position of specific ground points to be used by the construction contractor for determining lines and grades.

1. Design Surveying

YES NO a. Primary Project Control – 3 to 5 miles spacing
Precision shall be 1 part in 20,000 or better, unless otherwise directed by the District Engineer.
(1) Establish horizontal control points
(2) Establish vertical control points

NOTE: ALL BEARING AND DISTANCE SHALL BE BASED ON THE STATE PLANE COORDINATE SYSTEM NAD 1983, SOUTH ZONE. ALL DISTANCES AND COORDINATES SHALL BE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999960

YES NO b. Secondary Project Control – Surveyor shall recover and/or reset H&V Control Points as provided by the Engineer and create Survey Control Data Sheets for inclusion in the Construction Project Plans signed and sealed by an R.P.L.S.
(1) No traverse should exceed 25 angle points. Planimetrics shall be 20 ft Lt & Rt from the proposed ROW as per the schematic provided by the Engineer.
(2) The unadjusted angular error should not exceed 2 seconds per angle, plus 14 seconds.
(3) The unadjusted ratio of precision should be one part in 10,000 or better. (The ratio of precision is the total length of the traverse divided by the total error.)
(4) The unadjusted vertical error should not exceed 0.03 foot per mile of traverse.
(5) Project control base lines

NO NO (6) Photogrammetric ground control
(a) Establish horizontal control
(b) Establish vertical control points

(c) Place and maintain control point targets

Services Provided By:
SURVEYOR COUNTY

YES NO

c. Other Design Surveying

(1) **The limit of the Design surveys shall be 500-ft before and after the limits of the project as identified by the Project Engineer on the schematic. Establish horizontal and vertical control.** Set H&V Control at 1000-ft intervals along the project proposed right-of-way. Provide x, y, z for each H&V Control. Provide an H&V Control along each outfall identified on the Hydrologic Map. The H&V Control shall be #5 I.R. 2-ft in depth set in concrete. **The surveyor shall provide an H&V Control Book (a Sample shall be provided by the Engineer to the Surveyor).** The Surveyor will provide a 3-pt reference sketch with ties to the BMs for inclusion the existing H&V Control Book. Establish benchmark circuit throughout the project with a tolerance of 0.03'/ft per mile error vertically.

(2) Complete topographic and cross section survey, data processing, and CADD mapping (2D & 3D) for the limits of the project.

(3) Locate all visible utilities, data processing and CADD mapping (2D & 3D) including irrigation lines. Follow sample provided by the Engineer.

(4) Field locate cross culverts, driveway culverts, inverts, irrigation lines, within the project limits, data processing and CADD mapping (2D & 3D).

(5) Right of Entry, Right of Way Research, and Appraisal District Records is the responsibility of the Surveyor.

(6) The Surveyor shall stake the proposed centerline on the existing fields as approved by Engineer before construction for the purpose of utility adjustments and project location.

(7) Profile and cross section intersecting streets for ties into project (500-ft. beyond the proposed ROW per schematic and 20-ft wider than the existing ROW of intersecting street).

(8) Cross section irrigation crossings for a distance of 20-ft beyond the proposed ROW at 100-ft intervals in a DTM file. Provide a complete description of irrigation appurtances. The SURVEYOR will meet with the ENGINEER before he ties down any irrigation lines. Jointly the SURVEYOR and the ENGINEER will identify from records such as the Irrigation District Maps and the A&M Data of existing irrigation lines that will need to be tied down. The SURVEYOR will follow the sample given to him by the ENGINEER and tie the structures horizontally and vertically and include in the field books to be submitted.

(9) Tie Horizontally and Vertically the existing storm drain system that lies within the existing proposed ROW including the elevation of the outfall of said recovered existing storm drain systems.

(10) Tie to existing underground and overhead utilities (location, elevation and direction)

Horizontally – The surveyor shall call the 1-800 number for the utilities to be marked on the ground as well as any city water and sewer lines. He shall tie all visible utility crossings with name, address and Phone #'s of utility companies. The engineer will coordinate with the utility companies and jointly the Surveyor and the Engineer will identify which utilities were missed and need to be tied down.

Vertically – The engineer shall identify all utilities that are potential conflicts and that need to be tied vertically. The engineer will advise the surveyor in writing of the needed vertical ties and the surveyor will tie the lines vertically once the surveyor has coordinated the exposure and provide the information to the engineer.

Services Provided By: SURVEYOR	COUNTY		
YES	NO	(11)	Cross section and profile all outfall channels identified on the Hydrologic Map for a distance of 200-ft beyond the proposed ROW upstream and downstream at 100-ft intervals. The SURVEYOR will provide a complete 2D/3D File including utilities of the outfalls identified.
YES	NO	(12)	Driveways and Turnouts (a) Inventory commercial entrances, public roads and side streets separately. (b) Obtain centerline station. (Width at ROW, PAV'T and existing radius. (c) Inventory by type (dirt, caliche, gravel or paved). If paved, indicate condition in terms of no patches, has patches or has potholes. (d) Obtain width at R.O.W. line. (e) Obtain elevations at both edges of the driveway or turnout in line with the side drain.
YES	NO	(13)	ROW staking (Existing and Proposed @ 1,000 ft. stations PC's PT's and Angle points as per ROW Map)
NO	NO	(14)	Soil core hole staking at bridge class structures.
NO	NO	(15)	Determine changes in topography from voids and outdated maps due to development, erosion, etc.
YES	NO	(16)	Profiles of existing drainage facilities.
YES	NO	(17)	Measurement of hydraulic opening under existing bridges.
YES	NO	(18)	Obtain elevations of manholes and valves of utilities
YES	NO	(19)	Provide temporary signs, traffic control, flags, safety equipment, etc.
YES	NO	(20)	Ties to existing bridges railroad rail elevations or culverts that may conflict with new construction.
NO	NO	(21)	Bridge widening top of deck and/or top of cap elevations at the Profile Grade Line (PGL) and the edges of slab at bent locations.
YES	NO	(22)	Inventory signs, mailboxes, and driveways
YES	NO	(23)	Locate wetlands.
YES	NO	(24)	Locate existing right-of-ways.

d. Construction Surveys:

In performing construction surveys, the following will be requested by the ENGINEER on an as needed basis, but need not be limited to:

NO	NO	(1)	Stake existing and/or proposed right-of-ways.
NO	NO	(2)	Stake existing and/or proposed baseline/centerline.
NO	NO	(3)	Stake proposed bridge structures.
NO	NO	(4)	Stake proposed drainage structures, such as manholes, culverts, etc.
NO	NO	(5)	Set grade stakes.
NO	NO	(6)	Recover and check existing control points.
NO	NO	(7)	Establish additional control points.
NO	NO	(8)	Check elevations and locations of structures.
NO	NO	(9)	Determine and resolve conflicts associated with survey data.

Services Provided By:
SURVEYOR COUNTY

NO NO **2. Photogrammetric Products**

a. Uncontrolled Photography
   (1) Contact Prints
   (2) Mosaics
   (3) Digital ortho plots

b. Mapping
   (1) Planimetric Maps
   (2) Contour Maps
   (3) Cross Sections
   (4) Profiles
   (5) Digital Terrain Models (DTM)

3. UTILITY SUBSURFACE INVESTIGATION:

Utility Quality Levels are in cumulative order (least to greatest) as follows

YES NO 3.1. Quality Level C - Existing Records: Utilities are plotted from review of available existing records that will be generated by the Engineer on the schematic and provided to the surveyor for his further creation of a Utility Map which will be turned in as a deliverable as part of this work order.

YES NO 3.2. Quality Level B - Surface Visible Feature Survey: The Surveyor shall gather the field tied Utility Information and compare it to the existing records (if any) as provided by the Engineer and correlate with surveyed surface-visible features. The surveyor shall create a Utility Layout Map or plan layout 2D, showing the limits of the proposed project and limits of the work area required for this work authorization; including highway stations, limits within existing or proposed right of way. Correlate utility owner records with designating data and resolve discrepancies using professional judgment. A color-coded composite utility facility plan with utility owner names, quality levels, line sizes and subsurface utility locate (test hole) locations. The Layout Map will include all utilities that have been field tied – 2D Horizontal Utilities. This Layout will be provided to the Engineer and a meeting held with Engineer to identify which utilities will need to be tied down vertically. A note must be placed on the designate deliverable only that states "lines sizes are from best available records". All above ground appurtenance locations must be included in the deliverable to the Engineer. This information will be provided in the latest version of Micro Station or Geopak used by the State. The electronic file will be delivered on C.D. or USB. A hard copy is required and must be signed, sealed, and dated by the Surveyor. Note: Determine and inform the Engineer of the approximate utility depths at critical locations. This depth indication is understood by the Engineer to be approximate only and is not intended to be used for preparing the construction plans.

YES NO 3.3. Subsurface Utility Locate (Test Hole) Service (Quality Level A), **THE SURVEYOR SHALL LOCATE APPROX. 25 VERTICAL SPOT ELEVATIONS OF UTILITIES PER MILE FOR EACH OF THE IDENTIFIED OUTFALL LOCATIONS.** Locate shall mean to obtain precise horizontal and vertical position, material type, condition, size and other data that may be obtainable about the utility facility and its surrounding environment through exposure by non-destructive excavation techniques that ensures the integrity of the utility facility. Subsurface Utility Locate (Test Hole) Services (Quality Level A) are inclusive of Quality Levels B and C. The Surveyor shall:

3.3.1 Review the requested test hole locations that have been identified by the Engineer and Coordinate with utility owner inspectors as may be required by law or utility owner policy.

Services Provided By:
SURVEYOR COUNTY

3. *Utility Subsurface (continued)*

3.3.2 Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:

- Elevation of top and/or bottom of utility tied to the datum of the furnished plan.
- Identify a minimum of two benchmarks utilized. Elevations shall be within an accuracy of 15mm (.591 inches) of utilized benchmarks.
- Elevation of existing grade over utility at test hole location.
- Horizontal location referenced to project coordinate datum.
- Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.
- Utility facility material(s).
- Utility facility condition.
- Coating/Wrapping information and condition.
- Unusual circumstances or field conditions.

3.3.3 Excavate test holes in such a manner as to prevent any damage to wrappings, coatings, cathodic protection or other protective coverings and features. Water excavation can only be utilized with written approval from the appropriate State District Office.

3.3.4 Back fill all excavations with appropriate material, compact backfill by mechanical means, and restore pavement and surface material. The Engineer shall be responsible for the integrity of the backfill and surface restoration for a period of three years. Install a marker ribbon throughout the backfill.

3.3.5 Provide complete restoration of work site and landscape to equal or better condition than before excavation.

3.3.6 Plot utility location position information on the Utility Layout sheet and identify the vertical elevation and sealed by the responsible Surveyor. This information will be provided in the latest version of Micro Station or Geopak format used by the State. The electronic file will be delivered on C.D or DVD.

4. DELIVERABLES:

The deliverables to be specified in individual work authorizations for design surveys and construction surveys may be any combination of the following:

YES	NO	4.1. Digital Terrain Models (DTM) in a format acceptable by the ENGINEER.
NO	NO	4.2. Final H&V Field Book Binder with all pertinent information obtained in the field for Design Surveys. Maps, plans, or sketches prepared by the SURVEYOR showing the results of field surveys.
YES	NO	4.3. Computer printouts or other tabulations summarizing the results of field surveys.
YES	NO	4.4. Digital files or media acceptable by the ENGINEER containing field survey data.
YES	NO	4.5. Maps, plats, plans, sketches, or other documents acquired from utility companies, private corporations, or other public agencies, the contents of which are relevant to the survey.
YES	NO	4.6. Field survey notes, as electronic and/or hard copies.
NO	NO	4.7. A H&V Control Book identifying the basis of the Primary and Secondary Control and an 8 ½ inch by 11 inch survey control data sheet for each construction control point which shall include, but need not be limited to, a location sketch, a physical description of the point including a minimum of two reference ties, surface coordinates, a surface adjustment factor, elevation, and the horizontal and vertical datums used. Survey control data sheets shall be signed and sealed by the supervising Registered Professional Land Surveyor.

Services Provided By:
SURVEYOR COUNTY

4. *Deliverables (continued)*

YES NO 4.8. Final mylar set of 11 inch by 17 inch Survey Control data sheets sign and seal by the RPLS per TxDOT guidelines.

YES NO 4.9. A digital and/or hard copy of all computer printouts of horizontal and vertical conventional traverses, GPS analysis and results, data including property descriptions with field notes and plats, right-of-way maps, and survey control data sheets to include in the H&V Field Book Binder.

YES NO 4.10. Survey reports in a format requested by the ENGINEER.

YES NO 4.11. Items indicated under the Automation Requirements Section 6.

5. GENERAL REQUIREMENTS:

5.1. Design surveys and construction surveys shall be performed under the supervision of a Registered Professional Land Surveyor currently registered with the Texas Board of Professional Land Surveying.

5.2. Horizontal ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the STATE.

5.3. Reference may be made to standards of accuracy for horizontal control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

5.4. Vertical ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the ENGINEER.

5.5. Reference may be made to standards of accuracy for vertical control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

5.6. Side shots or short traverse procedures used to determine horizontal and vertical locations shall meet the following criteria:

- Side shots or short traverses shall begin and end on horizontal and vertical ground control as described above.
- Standards, procedures, and equipment used shall be such that horizontal locations relative to the control may be reported within the following limits:
- Bridges and other roadway structures: less than 0.1 of one foot.
- Utilities and improvements: less than 0.2 of one foot.
- Cross-sections and profiles: less than 1 foot.
- Bore holes: less than 3 feet.
- Standards, procedures, and equipment used shall be such that vertical locations relative to the control may be reported within the following limits:
- Bridges and other roadway structures: less than 0.02 of one foot.
- Utilities and improvements: less than 0.1 of one foot.
- Cross-sections and profiles: less than 0.2 of one foot.
- Bore holes: less than 0.5 of one foot.

Services
Provided By:
SURVEYOR COUNTY

6. AUTOMATION REQUIREMENTS:

6.1 Planimetric design files (DGN) shall be fully compatible with the State's *Micro Station V8* graphics program without further modification or conversion.

6.2 Electronically collected and processed field survey data files shall be fully compatible with the State's *CADD* systems without further modification or conversion. All files shall incorporate only those feature codes currently being used by the STATE.

6.3 Digital Terrain Models (DTM) shall be fully compatible with the STATE's GEOPAK system without further modification or conversion. All DTM files shall be fully edited and rectified to provide a complete digital terrain model with all necessary break lines.

ADDITIONAL RESPONSIBILITIES

A. TRAFFIC CONTROL:

The SURVEYOR shall control traffic in and near surveying operations adequately to comply with provisions of the latest edition of the TxDOT Manual on Uniform Traffic Control Devices – Part VI and the latest edition of the Occupational Safety Manual both of which can be found on the TxDOT internet site.

In the event field crew personnel must divert traffic or close traveled lanes, a Traffic Control Plan based upon principles outlined in the latest edition of the TxDOT Manual on Uniform Traffic Control Devices – Part VI shall be prepared by the SURVEYOR and approved by the ENGINEER prior to commencement of field work. A copy of the approved plan shall be in the possession of field crew personnel on the job site at all times and shall be made available to the ENGINEER for inspection upon request.

B. INVOICING:

Payment requests shall include a SURVEYOR's invoice. With each payment request, the SURVEYOR shall submit a project status report which will, as a minimum, include the percentage of total work complete as of the date of the payment request and a description of current work activity. The percentage of total work complete shall not be based simply on the percentage of funds expended, but shall be based on the best judgment of the SURVEYOR as to the percentage of actual work complete.

C. EASEMENTS, LETTERS OF PERMISSION, ETC.

The SURVEYOR shall be responsible for delineating easements. The SURVEYOR will be responsible for securing the necessary legal instruments and obtaining all Right-of-Entries (ROEs).

D. MEETINGS:

The ENGINEER shall setup the necessary meetings with the SURVEYOR in order to assure all field information is provided on-time and products are delivered in accordance with TxDOT's specifications. SURVEYOR must attend all meetings involving data provided if requested by ENGINEER.

E. PROJECT MANAGER/SURVEYOR COMMUNICATION:

The SURVEYOR shall designate one Texas Registered Professional Land Surveyor (RPLS) to be responsible throughout the project for project surveying coordination and all communications, including billing, with the ENGINEER.

F. OFFICE LOCATION:

The SURVEYOR will perform the services to be provided under this agreement out of a local office and have a crew available to perform requested tasks within 24 hours of request. The coordinating SURVEYOR's Project Manager (RPLS) shall be accessible at all times and working from the local office.

ATTACHMENT "A"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 7 - DESIGN CONTROLS

Services Provided By: ENGINEER	COUNTY		
		1.	Geometric Design
YES	NO	a.	Horizontal and Vertical Alignment (for schematic only)
YES	NO	b.	Schematic Layout for outfalls (ONLY)
			(1) Develop vertical and horizontal alignment of outfall.
			(2) The tentative ROW limits.
			(a) Provide a GEOPAK computer tape of the preliminary earthwork to verify ROW requirements.
			(b) Provide a graphics file containing the approved schematic.
			(3) The geometric of the proposed outfall typical sections and cross roads.
			(4) Provide preliminary ROW owners along the proposed outfall route utilizing the existing ROW map as provided by the HCRMA and appraisal district information.
YES	NO	2.	General Guidelines for Project Development
		a.	Prior to preparing detailed plans for a proposed project, a preliminary schematic layout shall be prepared which indicates the general geometric features and location requirements peculiar to the project. An uncontrolled aerial mosaic will be provided for this use. **No geometric design is to be performed until the Owner has given the engineer written approval of the preliminary schematic layout.**
		b.	All geometric design shall be in conformance with HCDD1.
		c.	The schematic layout shall include basic information which is necessary for the proper review and evaluation including the items listed above in the checklist for schematic layout.
		d.	The engineer shall furnish the existing and proposed cross section plots for each outfall at 500-ft intervals to justify the proposed ROW needed for each outfall.
NO	NO	3.	Exhibit for Airway/Highway Clearance Permits
		4.	Grading Design
YES	NO	a.	Refine the horizontal and vertical alignment of the proposed outfalls based upon the approved schematic layout.
YES	NO	b.	Typical Sections
YES	NO	c.	Design Cross Sections
YES	NO	d.	Determine Cut and Fill Quantities
NO	NO	e.	Slope Stability Analysis
NO	NO	f.	Embankment Foundation Stability Analysis
NO	NO	g.	Embankment Settlement Analysis

ATTACHMENT "A"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

ADDITIONAL RESONSIBILITIES

Coordination of Utilities – AS REQUIRED BY PROJECT SPECIFIC NEEDS

The ENGINEER shall furnish the OWNER prints of a project layout which will be distributed by ENGINEER to various utility companies to determine which utilities are in the limits of the project. These shall be preliminary layouts. Upon completion of the preliminary drainage plans and U&D sheets, the ENGINEER shall distribute to the various utility companies and request return. Upon return of these prints, the ENGINEER will schedule a meeting with the various utility companies to discuss potential conflicts and conformance with the State's Utility Accommodation Policy. The ENGINEER is responsible for coordination with the various utility companies for exposing potential conflicts and field ties to uncover utilities in potential conflict areas.

Meetings – AS REQUIRED BY PROJECT SPECIFIC NEEDS

Meetings will be held with the FHWA, State Officials, local governments, property owners, utility owners, railroad companies, other consulting firms, etc., as needed or required by the OWNER. The ENGINEER shall coordinate through the OWNER for the development of this project with any local entity having jurisdiction or interest in the project (i.e., city, county, etc).

Specifications, Special Provisions, Special Specs – AS REQUIRED BY PROJECT SPECIFIC NEEDS

Use the State's standard specifications or previously approved special provisions and/or special specifications. If a special provision and/or special specification is developed for this project, it shall be in the State's format and incorporate references to approved State test procedures.

Project Manager/Engineer Communication

The ENGINEER shall designate one Texas Registered Professional Engineer to be responsible throughout the project for project management and all communications, including billing, with the OWNER**'s** Director. Any replacements to the ENGINEER's designated Project Manager/Engineer must be approved by the OWNER.

Engineering documents produced for the department's engineering projects shall be signed, sealed and dated or CADD sealed in accordance with Administrative Order No. 5-89 and Administrative Circular No. 26-91.

Design Responsibilities

The ENGINEER is responsible for design errors and/or omissions that become evident before, during or after construction of the project. The ENGINEER's responsibility for all questions arising from design errors and/or omissions will be determined by the OWNER and all decisions shall be final and binding. This would include, but not necessarily be limited to:

1. All design errors and/or omissions resulting in additional design work to correct the errors and/or omissions.
2. Preparation of design documents and detail drawings necessary for a field change due to design errors and/or omissions.
3. Revision of original tracings to the extent required for a field change due to design errors and/or omissions.

The ENGINEER shall promptly make necessary revisions or corrections resulting from the ENGINEER's errors, omissions or negligent acts without additional compensation. Acceptance of the work by the LPA will not relieve the ENGINEER of the responsibility for subsequent correction of any such errors or omissions or for clarification of any ambiguities.

ATTACHMENT "A"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Document and Information Exchange

Data, Plan Sheets, General Notes and/or Specifications provided to the OWNER shall be furnished on USB flash drives (or other electronic medium).

General Notes and specifications shall be provided in MS Office 2007 format. Plan sheets shall be provided in Microstation DGN or GEOPAK GPK format. PDF copies of plan sheets shall also be provided.

Two copies of the documentation shall be provided to the OWNER.

If required, the ENGINEER shall provide to the OWNER, a CD that contains all the plan sheets for the project. The graphics tape shall be compatible with the OWNER's computer system.

CD Tape Required (YES or NO): UNKNOWN

Proposal Time

The time indicated in the proposal and the contract shall include time necessary for reviews, approval, etc.

Office Location

The ENGINEER will perform the services to be provided under this agreement out of their office or offices listed below:

Service	Office Location
PS&E	Mission Office
Schematic	Mission Office

The work effort will be managed out of the Mercedes (City)
office located at 2100 West Expressway 83 (Address),
Mercedes (City), Texas (State).

APPENDIX A - PLAN SHEET SEQUENCE PROCEDURE (TYPICAL)

1. Title Sheet
   Detailed Index of Sheets

2. Typical Sections

3. General Notes and Specifications Data

4. Estimate and Quantity Sheets

5. Storm Water Pollution Prevention Plan (SW3P) Sheets

6. Traffic Control Plans – If Required
   a. Sequence of Construction Layouts
   b. Detour Plan /Profile / Typical Sections / Quantities

7. Outfall Layouts
   a. Outfall Plan/Profile Sheets
   b. Alignment Layouts/Data

8. Outfall Details

9. Utility Layouts/Profiles – If Required

10. Miscellaneous Standards

NOTE: This list is general and typical for project type. Variations of these plan sheet sequence guidelines may be permitted as required.

ATTACHMENT B

CONTRACT RATES

Attachment "B" - WA #1
CONTRACT RATES
FEE PROPOSAL

Mile 17 From Alamo Rd. to North Branch Drain
HIDALGO COUNTY PRECINCT #4

		MANHOURS				
		Senior Project Manager	Project Engineer	Senior Engineering Technician	Admin / Clerical	L&G TOTAL HOURS
	TASK					
	Hidalgo County Precinct 4 - ARPA Funded Project					
1	Gather Information Regarding Existing Drainage Features, Facilities, & Watersheds	6	8	12		26
2	Field Reconnaissance and Topographic Survey	8	20	40		68
3	Plans, Specifications, and Estimates	20	80	120	20	240
4	Meetings and Coordination	6			8	14
	Subtotal Hours	**40**	**108**	**172**	**28**	**348**
	Contract Hourly Base Rate	$ 83.00	$ 56.00	$ 40.00	$ 22.00	
	Contract Rate w/ Direct Salary (190.99%) and OH Mult (12.00%)	$ 270.58	$ 182.56	$ 130.40	$ 71.72	
	Total Labor Costs	**$ 10,823.20**	**$ 19,716.48**	**$ 22,428.80**	**$ 2,008.16**	**$ 54,976.64**

Grand Total $ 54,976.64

ATTACHMENT C

APPROVED WORK/PROJECT SCHEDULE

Client: Hidalgo County Precinct #4

ATTACHMENT C
WORK SCHEDULE
Mile 17 From Alamo Rd. to North Branch Drain
WA #1 - ARPA Funded Drainage Improvement Project

TASK AND DESCRIPTION	FIRM	2022						2023	
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
Survey, Schematic & PS&E Development									
Design Survey & Topo	L&G								
30% PS&E Completion	L&G								
60% ~ 90% PS&E Completion	L&G								
100% Plans	L&G								
HCDD1 & HC Pct #4 Plan Set Approval	HC Pct #4/HCDD#1								
Let Project	Hidalgo County Pct #4								