

**EXHIBIT "E"**

Work Authorization

**HIDALGO COUNTY**  
**Professional Engineering Services**  
**Contract # C-15-300-09-01**  
**Work Authorization Form**

**WORK AUTHORIZATION NO. 1**

**THIS WORK AUTHORIZATION** is made pursuant to the terms and conditions of Article I. of the Agreement 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. d/b/a L & G Engineering**, professional engineers of Mercedes, Texas, hereinafter called "**Engineer**".

**PART 1. SCOPE OF WORK**

The purpose of this Work Authorization is for the **Engineer** to provide the Environmental Assessment, Public Involvement, Schematic Design and Design Survey for Phase I of the Cesar Chavez Road 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 **\$1,151,217.08**. This amount is based upon the costs outlined in the **Estimated Cost Proposal** attached hereto as **EXHIBIT "D" Fee Schedule**.

**PART 3. PAYMENT**

Compensation and payment to the **Engineer** for the services established under this Work Authorization shall be made in accordance with **Article 6** of the Agreement.

**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 scopes of the work authorization.

# EXHIBIT "E"

## 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 **Hidalgo County Precinct No. 2**, Commissioner Eduardo "Eddie" Cantu, as to content and detail of this **Work Authorization No. 1**.

#### HIDALGO COUNTY COMMISSIONER PRECINCT NO. 2

BY: EW

### PART 8. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on Sept. 01, 2015 as indicated below.

#### THE ENGINEER: L&G ENGINEERING

By: Jacinto Garza, P.E.  
President

#### ATTEST:

By: Arturo Guajardo, Jr. County Clerk

#### THE OWNER: HIDALGO COUNTY

By: Ramon Garcia,  
County Judge

APPROVED BY  
COMMISSIONERS' COURT  
ON: 9/1/15

#### LIST OF ATTACHMENTS

- Exhibit A – Services to be Provided by the Owner
- Exhibit B – Services to be Provided by the Engineer
- Exhibit C – Work Schedule
- Exhibit D – Fee Schedule

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 proposed improvements to Cesar Chavez Road located within the City of Pharr, and within the limits of Business 83 and E. Nolana Loop in Hidalgo County hereinafter denoted as the **Project**.

**GENERAL:**

The **Owner** will provide to the **Engineer** the following:

- 1) Provide the authorization to proceed with services through coordination with the project consulting and design Engineer.
- 2) Payment for work performed by the **Engineer** and accepted by the **Owner** in accordance with Article 3 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 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 prepared in accordance with Exhibit "C" attached to this Work Authorization.
- 6) Attend and participate in progress meetings as required and as coordinated and conducted by **Engineer**.

**EXHIBIT "B"**  
**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: Environmental Assessment, Public Involvement,  
Schematic Design & Design Survey for the  
Cesar Chavez Road Project

LENGTH: 3.04 Miles

HIGHWAY: Cesar Chavez Road Project

LIMITS: From Business 83 to E. Nolana Loop

**EXISTING FACILITY**

**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
- Miscellaneous Studies (Use Function Code 110 for All Tasks)

ENGINEER shall mean L&G Engineering.

STATE shall mean Texas Department of Transportation.

COUNTY shall mean the Hidalgo County.

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER**

---

**SECTION 2 - ROUTE AND DESIGN STUDIES**  
(Function Code 110)

Services  
Provided By:  
ENGINEER COUNTY

- |            |            |  |
|------------|------------|--|
| <u>YES</u> | <u>NO</u>  | 1. Route Location Studies  |
| <u>N/A</u> | <u>N/A</u> | 2. Level of Service Analysis   |
| <u>YES</u> | <u>NO</u>  | 3. Traffic Evaluations and Projections   |
| <u>YES</u> | <u>NO</u>  | 4. Develop Roadway Design Criteria   |
| <u>YES</u> | <u>NO</u>  | 5. Preliminary Cost Estimates  |
| <u>YES</u> | <u>NO</u>  | 6. Design Schematic<br>(See Section 6, page 6-1 for schematic layout requirements) |
| <u>YES</u> | <u>NO</u>  | 7. Preliminary Right-of-Way Requirements   |
| <u>YES</u> | <u>NO</u>  | 8. Design Concept Conference   |
| <u>NO</u>  | <u>N/A</u> | 9. Soil Core Hole Drilling   |
| <u>N/A</u> | <u>N/A</u> | a. Pavement (See Section 6, pages 6-3 thru 6-4 for requirements)                   |
| <u>NO</u>  | <u>N/A</u> | b. Retaining Walls (See Section 9, page 9-1 thru 9-2 for requirements)             |
| <u>N/A</u> | <u>N/A</u> | c. Miscellaneous Structures (See Section 9, page 9-4 for requirements)             |
| <u>N/A</u> | <u>N/A</u> | d. Bridges (See Section 10, page 10-3 for requirements)                            |

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER**

---

**SECTION 3**  
**SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT**  
(Function Code 120)

Services  
Provided By:  
ENGINEER COUNTY

1. Environmental Reports  
All Environmental Reports shall be in accordance with 43 Texas Administrative Code (TAC) 2.40-2.51, Code of Federal Regulations, Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.
  - a. Environmental Assessments
    - (1) An Environmental Assessment shall be prepared, anticipating a Categorical Exclusion.  
N/A      N/A
    - (2) An Environmental Assessment shall be prepared, anticipating a Finding of No Significant Impact.  
YES      NO
    - (3) An Environmental Assessment shall be prepared, anticipating the need for a Draft Environmental Impact Statement.  
N/A      N/A
  - b. Environmental Impact Statement
    - (1) A Draft Environmental Impact Statement shall be prepared. After appropriate interagency and public reviews within time limits prescribed by the Code of Federal Regulations, Title 23, Part 771 and 43 Texas Administrative Code 2.40-2.51, a Final Environmental Impact Statement shall be prepared.  
N/A      N/A
    - (2) A Section 4(f) Statement (Department of Transportation Act) shall be provided by the ENGINEER. The format and content of the statement is found in FHWA Technical Advisory T6640.8A.  
N/A      N/A
  
2. Public Involvement  
All public involvement procedures shall be in accordance with 43 Texas Administrative Code (TAC) 2.40-2.51, Code of Federal Regulations Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.
  - a. A public involvement meeting(s)/hearing(s) shall be scheduled, coordinated and conducted.\*  
YES      NO
  - b. Technical assistance, meeting(s)/hearing(s) preparation, maintenance of contracts lists, minutes of meeting(s), exhibit preparation, and other tasks outlined by the COUNTY, shall be provided.  
YES      NO
  
3. Cultural Resources  
Formal consultation with the State Historic Preservation Office (SHPO) and the Texas Historical Commission (THC) will be conducted by the COUNTY.
  - a. Historic Structure Studies  
A records search and reconnaissance survey shall be performed, and documentation prepared regarding identification efforts, National Register eligibility and potential impacts to historic properties in accordance with the state's historic structure requirements.  
YES      NO
  - b. Archeological Studies
    - (1) Files searches shall be conducted to determine if known archeological sites are present; to identify whether these sites have been listed or determined eligible for the National Register of Historic Places or have been designated State Archeological Landmarks; and to identify the need (if any) to perform additional archeological investigations.  
YES      NO
    - (2) Archeological reconnaissance will be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.  
YES      NO
    - (3) Archeological survey shall be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.  
YES      NO

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER**

---

Services  
 Provided By:  
ENGINEER COUNTY

- |            |           |  |
|------------|-----------|--|
| <u>YES</u> | <u>NO</u> | <p>4. Noise and Air Quality Analyses</p> <p>a. Noise Analysis<br/>         A noise analysis shall be prepared, including predicted noise levels and the consideration and evaluation of noise mitigation, in accordance with the STATE'S Noise Guidelines. The noise analysis or a summary of the noise analysis shall be included in the environmental document for the project.</p>  |
| <u>YES</u> | <u>NO</u> | <p>b. Air Quality Analysis<br/>         An air quality analysis shall be prepared in accordance with the STATE'S Air Quality Guidelines. The air quality analysis or a summary of the air quality shall be included in the environmental document for the project.</p>   |
| <u>YES</u> | <u>NO</u> | <p>5. Ecological Investigations<br/>         A wetland survey and if necessary, a wetland delineation shall be conducted and a "wetland finding" shall be provided if necessary. As part of the environmental phase of the project, the consultant should notify the District if it is believed that a Section 404 or Section 9 permit is required, and provide the technical data to the District for application to the U.S. Army Corps of Engineers and/or the U.S. Coast Guard.</p> <p>A determination should be made if there are potential federally listed endangered or threatened species that could be impacted. The District will be notified as soon as possible that Section 7 or 10 consultations may be required. Supporting data will be furnished to the district when consultation with the U.S. Fish and Wildlife Service is undertaken.</p>  |
| <u>YES</u> | <u>NO</u> | <p>6. Hazardous Materials<br/>         The consultant shall perform an Environmental Site Assessment for hazardous materials impact in accordance with the American Society for Testing and Materials (ASTM) 1528.93 (Transaction Screen Process).</p>   |
| <u>YES</u> | <u>NO</u> | <p>7. General Guidelines for Preparation of Environmental Documents</p> <p>a. The Biological Impact Evaluation Report will be prepared and submitted electronically to TxDOT.</p> <p>b. All cultural resource reports (i.e. Archeological and Historical Project Coordination Requests (PCRs), background and reconnaissance surveys) will be submitted electronically to TxDOT.</p> <p>c. The draft administratively complete document will be submitted to TxDOT electronically through their FTP site.</p> <p>d. The administratively complete document will be prepared in accordance with the content and format of FHWA Technical Advisory T6640.8A and the TxDOT Administrative Code 43 TAC §2.44.</p> <p>e. The administratively complete document will be submitted to TxDOT electronically through their FTP site.</p> <p>f. Upon completion and approval of the administratively and technically complete document, the Engineer will provide one (1) hard copy to the Client, one (1) hardcopy to the district, and (3) hardcopies to TxDOT ENV.</p> <p>g. Exhibits in the environmental document shall be color copies and text shall be black and white.</p> |

EXHIBIT "B"  
SCOPE OF SERVICES TO BE PROVIDED BY THE SURVEYOR

---

**SECTION 5 - FIELD SURVEYING AND PHOTOGRAMMETRY**  
(Function Code 150)

Services  
Provided By:  
SURVEYOR COUNTY

1. Field Surveying
- |  |           |   |
|--|-----------|---|
| <u>YES</u>   | <u>NO</u> | a. Primary Project Control - 3 to 5 miles spacing<br>Precision shall be 1 part in 20,000 or better, unless otherwise directed by the district engineer.<br>(1) Establish horizontal control points<br>(2) Establish vertical control points   |
| <p>NOTE: ALL BEARING AND DISTANCE SHALL BE BASED ON THE STATE PLANE COORDINATE SYSTEM NAD 1983, SOUTH ZONE.</p> <p>ALL DISTANCES AND COORDINATES SHALL BE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999960</p> |           |   |
| <u>YES</u>   | <u>NO</u> | b. Secondary Project Control (Surveyor shall recover and/or reset H&V Control Points as provided by the Engineer and create Survey Data Sheets for inclusion in the Project Plans. <ul style="list-style-type: none"><li>• No traverse should exceed 25 angle points. Planimetrics shall be 20 ft Lt &amp; Rt from the proposed ROW as per the schematic provided by the Engineer.</li><li>• The unadjusted angular error should not exceed 2 seconds per angle, plus 14 seconds.</li><li>• 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.)</li><li>• The unadjusted vertical error should not exceed 0.03 foot per mile of traverse.</li></ul> (1) Project control base lines   |
| <u>NO</u>  |           | (2) Photogrammetric ground control <ul style="list-style-type: none"><li>(a) Establish horizontal control</li><li>(b) Establish vertical control points</li><li>(c) Place and maintain control point targets</li></ul>  |
| <u>NO</u>  |           |   |
| <u>NO</u>  |           |   |
| <u>NO</u>  |           |   |
| <u>YES</u>   | <u>NO</u> | c. Other Field Surveying <ul style="list-style-type: none"><li>(1) <b>The limit of the Design surveys shall be 1,500-ft before and after the limits of the project as identified by the Project Engineer on the schematic. Establish horizontal and vertical control.</b> Set benchmarks at 1000-ft intervals along the project proposed right-of-way. Provide x,y,z for each Benchmak. Provide a BM along each outfall identified on the Hydrologic Map. The BM's shall be #5 I.R. 2-ft in depth set in concrete. <b>The surveyor shall provide A H&amp;V Book (a Sample shall be provided by the Engineer to the Surveyor).</b> The Surveyor will provide a 3-pt reference sketch with ties to the BMs for inclusion the the existing H&amp;V Control Book. Establish benchmark circuit throughout the project with a tolerance of 0.03'/ft per mile error vertically.</li><li>(2) Complete topographic and cross section survey, data processing, and CADD mapping (2D &amp; 3D) for the limits of the project.</li><li>(3) Locate all visible utilities, data processing and CADD mapping (2D &amp; 3D) including irrigation lines. Follow sample provided by the Engineer.</li><li>(4) Field locate cross culverts, driveway culverts, inverts, irrigation lines, within the project limits, data processing and CADD mapping (2D &amp; 3D).</li><li>(5) Right of Entry, Right of Way Research, and Appraisal District Records is the responsibility of the Surveyor.</li><li>(6) The Surveyor shall also paint the proposed centerline on the existing pavement as approved by Engineer. (500-ft stations and a tick mark at 100-ft. stations -12 inches long with approved paint by Engineer) before construction for the purpose of utility adjustments and project location.</li></ul> |

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE SURVEYOR**

---

- |            |            |  |
|------------|------------|--|
|            |            | (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). Reference missing voids as per CD provided by the Engineer.   |
|            |            | (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 as identified by the engineer sample layout.  |
|            |            | (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.  |
| <u>YES</u> | <u>NO</u>  | (10) Tie to existing underground and overhead utilities (location, elevation and direction)<br><u>Horizontally</u> – 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.<br><u>Vertically</u> – 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. |
| <u>YES</u> | <u>NO</u>  | (11) Additional Field Surveying as shown below:<br>(A) <u>IRRIGATION LINES</u> – The surveyor will meet with the engineer before he ties down any irrigation lines. The Engineer will provide him the existing Irrigation District Maps and the A&M Data of existing irrigation lines that are identified of record. He will follow the sample given to him by the engineer and tie the structures horizontally and vertically and provide Field Books to the engineer.<br>(B) <u>OUTFALLS</u> – The surveyor will provide a complete 2D & 3D File including utilities of the outfall identified on the Hydrologic Map.  |
|            |            | <b><u>Driveways and Turnouts</u></b>   |
|            |            | (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. Obtain width at R.O.W. line.   |
|            |            | (e) Obtain elevations at both edges of the driveway or turnout in line with the side drain.  |
| <u>YES</u> | <u>NO</u>  | (12) ROW staking (Existing and Proposed @ 1,000 ft. stations PC's PT's and Angle points as per ROW Map)  |
| <u>NO</u>  | <u>NO</u>  | (13) Soil core hole staking -  |
| <u>YES</u> | <u>NO</u>  | (14) Determine changes in topography from voids and outdated maps due to development, erosion, etc.  |
| <u>YES</u> | <u>NO</u>  | (15) Profiles of existing drainage facilities  |
| <u>N/A</u> | <u>N/A</u> | (16) Measurement of hydraulic opening under existing bridges   |
| <u>YES</u> | <u>NO</u>  | (17) Obtain elevations of manholes and valves of utilities   |
| <u>YES</u> | <u>NO</u>  | (18) Provide temporary signs, traffic control, flags, safety equipment, etc.   |
| <u>YES</u> | <u>NO</u>  | (19) Ties to existing bridges or culverts that may conflict with new construction.   |
| <u>N/A</u> | <u>N/A</u> | (20) 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.   |
| <u>YES</u> | <u>N/A</u> | (21) Inventory signs, mailboxes, and driveways   |
| <u>YES</u> | <u>N/A</u> | (22) Survey controlled data sheets per TxDOT guidelines.   |
| <u>YES</u> | <u>N/A</u> | (23) Recover and/or re-establish the existing center line and existing Right-of-Way. Have said existing centerline approved by the Engineer. Provide a digital computer dump of both.  |
| <u>YES</u> | <u>N/A</u> | (24) Coordinate with the Engineer to set the existing centerline stationing.   |

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE SURVEYOR**

---

Services  
Provided By:  
SURVEYOR County

- N/A      N/A      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)

EXHIBIT "B"  
SCOPE OF SERVICES TO BE PROVIDED BY THE SURVEYOR

---

**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.

EXHIBIT "B"  
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

---

SECTION 6 - ROADWAY DESIGN CONTROLS  
(Function Code 160)

Services  
Provided By:  
ENGINEER COUNTY

- |            |           |  |
|------------|-----------|--|
| <u>YES</u> | <u>NO</u> | 1. Geometric Design  |
| <u>YES</u> | <u>NO</u> | a. Horizontal and Vertical Alignment   |
|            |           | b. Schematic Layout  |
|            |           | (1) The location of interchanges, main lanes, grade separations, frontage roads and ramps.   |
|            |           | (2) Develop vertical and horizontal alignment of main lanes, ramps and cross roads at proposed interchanges or grade separations. Frontage road alignment data need not be shown on the schematic; however, it should be developed in sufficient detail to determine ROW needs. The degree of horizontal curves and vertical curve data, including "K" values, shall also be shown for ease of checking.   |
|            |           | (3) For freeways, show the location and text of the proposed main lane guide signs. Lane lines and/or arrows indicating the number of lanes shall also be shown.   |
|            |           | (4) A complete explanation of the sequence and methods of stage construction, if proposed, including the initial and ultimate proposed treatment of crossovers and ramps.  |
|            |           | (5) The tentative ROW limits.  |
|            |           | (a) Provide a roadway Design System (RDS) or (GEOPAK) computer tape of the preliminary earthwork to verify ROW requirements.   |
|            |           | (b) Provide a graphics file containing the approved schematic.   |
|            |           | (6) The geometric (pavement cross slopes, lane and shoulder widths, slope rates for fills and cuts) of the typical sections of proposed highway main lanes, ramps, frontage roads, and cross roads.  |
|            |           | (7) The current and projected traffic volumes as provided by the TxDOT (20 year traffic projection, unless otherwise determined by the District Engineer).   |
|            |           | (8) The control of access lines if Interstate or designated under House Bill 179.  |
|            |           | (9) Direction of traffic flow on all roadways.   |
|            |           | (10) Location and width of median openings for highway without access control.   |
|            |           | (11) The geometric of speed change (acceleration, deceleration, climbing) lanes.   |
| <u>YES</u> | <u>NO</u> | 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. Four copies of the schematic layout shall be submitted through the district to the Design Division for approval and subsequent coordination with the Federal Highway Administration (FHWA) where applicable. The layout shall be submitted for two-lane arterial highway projects on new locations and for all multi-lane highway projects. <b>No geometric design is to be performed until the COUNTY has given the engineer written approval of the preliminary schematic layout.</b> |
|            |           | b. All geometric design shall be in conformance with the State's Design Division, Operations and Procedures Manual, except where variances are permitted in writing by the STATE.  |
|            |           | 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. Handling of traffic during construction shall be a consideration in the development of preliminary designs.   |

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER**

---

Services Provided By:		
<u>ENGINEER</u>	<u>COUNTY</u>	
<u>YES</u>	<u>NO</u>	
		2. General Guidelines for Project Development ( <i>continued</i> )
		<ul style="list-style-type: none"> <li>e. Upon approval of the schematic layout by Design Division (FHWA on Federal-aid projects), it shall be the basis for an exhibit at any required public hearing prior to final development of the project. If there are any changes to the schematic after the Design Division and FHWA approval and before the public hearing, four copies of the revised schematic, as displayed at the hearing, shall be submitted either prior to or accompanying the public hearing data. If there are no changes in the schematic as displayed at the hearing, only photographs of the schematic and other displays shall be submitted with the public hearing data.</li> <li>f. For all freeway construction projects, these schematics shall show the location and text of the proposed main lane guide signs. A schematic layout shall be submitted through the district to the Traffic Operations Division, Traffic Safety Section for approval and subsequent coordination with the FHWA. All signing shall be in conformance with the Texas MUTCD.</li> <li>g. On complex projects, informal contact through the district with the Design Division and FHWA personnel is encouraged with regard to development of preliminary design prior to official schematic submission.</li> <li>h. The engineer shall furnish a project tape that is compatible with the STATE's computer system, a project listing, and a cross section plot showing the original design sections containing the earthwork input and original cross sections for the project. <b>Accuracy of the earthwork design is of utmost importance since it is the basis for contractor payments and construction staking.</b></li> </ul>
<u>N/A</u>	<u>N/A</u>	3. Exhibit for Airway/Highway Clearance Permits
		4. Grading Design
<u>NO</u>	<u>N/A</u>	<ul style="list-style-type: none"> <li>a. Refine the horizontal and vertical alignment of main lanes, frontage roads, ramps, cross roads and direct connectors based upon the approved schematic layout. Determine vertical clearances at grade separations and overpasses, taking into account the appropriate super elevation rate.</li> <li>b. Typical Sections</li> <li>c. Design Cross Sections</li> <li>d. Determine Cut and Fill Quantities</li> <li>e. Slope Stability Analysis</li> <li>f. Embankment Foundation Stability Analysis</li> <li>g. Embankment Settlement Analysis</li> </ul>
<u>NO</u>	<u>N/A</u>	5. Pavement Design
<u>NO</u>	<u>N/A</u>	<ul style="list-style-type: none"> <li>a. Prior to initiating detailed plan preparations for a project, a preliminary investigation shall be made to determine the approximate section and pavement type to be used for the pavement structure. The Flexible Pavement Design Manual for flexible pavement, "Appendix F" of the Design Division, Operations and Procedures Manual, and the current AASHTO Guide for the Design of Pavement Structures, may be used for this purpose.</li> <li>b. The typical section shall also reflect proposed geometric including pavement cross slopes, lane and shoulder widths, and slope rates whenever this data have not been previously shown on a schematic submission.</li> <li>c. Embankment and Subgrade <ul style="list-style-type: none"> <li>(1) Soil Core Holes (Show cost estimate with Function Code 110) <ul style="list-style-type: none"> <li>(a) Along center line</li> <li>(b) Along center line of each roadway</li> </ul> </li> </ul> </li> </ul>
<u>NO</u>	<u>N/A</u>	The location and minimum number of soil core holes required for this project are as follows: (To be determined when schematic is being completed)

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER**

---

Services  
 Provided By:  
ENGINEER COUNTY

- |   |  |  |
|---|--|--|
| <u>NO</u><br><br><u>NO</u><br><u>NO</u><br><u>NO</u><br><u>NO</u><br><u>NO</u><br><u>NO</u> | <u>N/A</u><br><br><u>N/A</u><br><u>N/A</u><br><u>N/A</u><br><u>N/A</u><br><u>N/A</u><br><u>N/A</u> | 5. Pavement Design ( <i>continued</i> )<br>c. Embankment and Subgrade ( <i>continued</i> )<br>(2) Identify, interpret and summarize geologic features that affect engineering design<br>(PI, Sulfate content, % of lime)<br>d. Traffic Data for Pavement Design by STATE<br>e. Basic Design Criteria<br>f. Life Cycle Cost Analysis(es)<br>g. Cost Data<br>h. Pavement Material Properties<br>i. Rehabilitation Investigations<br>(1) Core Hole Survey (Show cost estimate with Function Code 110)<br>(a) Determine type and depth of existing material, pavement, etc. The Engineer<br>will determine whether to salvage ACP and FLEXBASE as well as their<br>properties and provide this information to TxDOT. |
|---|--|--|

TASK AND DESCRIPTION	FIRM	2015				2016														
		SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
<b>(WA #1) Phase I: EA, Public Involvement, Schem</b>																				
<b>Public Involvement</b>																				
Develop Alternatives & Matrix	L&G																			
Advertise & Conduct Public Meeting	L&G																			
Select TPA	L&G																			
<b>Schematic</b>																				
Design Survey	L&G																			
Develop Schematic	L&G																			
Hydrologic Map	L&G																			
TxDOT Review & Revisions	TxDOT																			
TxDOT Schematic Approval	TxDOT																			
<b>Environmental Document</b>																				
Draft Environmental Document, Field Visits, etc...	L&G																			
Submit Final Draft Document	L&G																			
Agency Review & Revisions	TxDOT																			
Environmental Decision	TxDOT																			
<b>Phase II: PS&amp;E, ROW Map &amp; Acquisition</b>																				
<b>PS&amp;E</b>																				
Compensable Utility Oversight	L&G																			
Outfall Coordination with HCDD #1	L&G																			
30% PS&E Completion	L&G																			
60% PS&E Completion	L&G																			
90% PS&E Completion	L&G																			
95% PS&E Completion	L&G																			
100% Mylars	L&G																			
TxDOT Plan Set Approval	TxDOT																			
<b>ROW Map</b>																				
Prepare ROW Map	L&G																			
TxDOT Review & Revisions	TxDOT																			
TxDOT ROW Map Approval	TxDOT																			
<b>ROW Acquisition (Est. 77 Parcels)</b>																				
ROW Release (Dependent on Availability of Funds)	TxDOT																			
Project Administration	L&G																			
Coordination with County & TxDOT	L&G																			
Title Commitments	L&G																			
Appraisal Reports	L&G																			
Appraisal Review Reports	L&G																			
Appraisal Update Reports	L&G																			
Approved Values by TxDOT	TxDOT																			
Acquisition Negotiation Offers	L&G																			
Title Curative Process	L&G																			
Title Commitment Updates	L&G																			
Payments for Parcels	L&G																			
L&G Condemnation Support Process	L&G																			
Eminent Domain Proceedings by County	County																			
Title Insurance Policies	L&G																			
Consumation of Outstanding Cases	L&G																			
<b>Phase III: Construction</b>																				
Let Project (Est. Earliest Date: Nov 2018)	TxDOT																			
Construction Duration	L&G																			
Open To Traffic	TxDOT																			

■ L&G FUNCTION  
■ ENVIRONMENTAL ASSESSMENT WORK  
■ TXDOT FUNCTION  
■ HIDALGO COUNTY FUNCTION



Exhibit "C"  
Preliminary Work Schedule

**QUINTANILLA, HEADLEY & ASSOCIATES**  
124 East Stubbs Street, Edinburg Texas 78539  
TEL: 956-381-6480 FAX: 956-381-0527

**PROJECT:**  
**Cesar Chavez from Business 83 to Nolana Loop**  
Design Survey & ROW Mapping

TASK	September			October			November			December			January									
	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	
1 Establish Benchmarks, Sketch Field Ties GPS, Process, Add to H&V Control Book and Provide H&V Control Sheets																						
2 Topographic & Cross Sections, Visible Utilities, Misc. Survey Work, Irrigation Details Sketches & CADD																						
3 Tie Underground & Conflicting Marked Utilities, Misc. Survey Work, Irrigation Details Sketches & CADD																						
4 Delivery & Client Review - Stake Baseline/Centerline																						

Cesar Chavez R  
HIDALGO COUNTY

		Senior Project Manager	\$
TASK			
<b>WA #1 - Cesar Chavez Environmental Assessment, Public Involvement, Schematic Design &amp; Survey</b>			
1	Environmental Document for TxDOT/FHWA	8	
2	Public Involvement for the Project with Stakeholders and 1 Public Meeting	26	
3	Archeological and Historical Research		
4	Engineering Technical Support at Public Meetings with Layouts, Etc.	40	
5	Schematic for Roadway (TxDOT/FHWA)	80	
6	Hydrological Map for Outfall Drain Ditch (HCDD#1)	40	
7	Schematic Design for Outfall (New Location)	45	
8	HCMPO/TxDOT Coordination for TxDOT Project Review Under New Programming Authority	85	
9	Office Surveys for Schematic (Prel. Ownership Identification and Property Rights)	50	
10	Preliminary Compensable Utilities Identification on Schematic	40	
11	Update Schematic Based on Comments as Provided by TxDOT/FHWA	48	
12	Engineering Technical Support at Public Hearing with Layouts, Etc.	10	
13	Public Involvement for 1 Public Hearing	23	
14	Coordination with Surveyor to Ensure Adequate Information for Deliverable	6	
14a	SUB: Field Surveys for Design and Construction		
		<b>Subtotal Hours</b>	<b>501</b>
Hourly Base Rate		\$	70.00 \$
FY 15 Contract Hourly Rate w/ OH Mult. (178.12%) & Fixed Fee (12.00%)		\$	211.40 \$
<b>Total Labor Costs</b>		\$	<b>105,911.40 \$</b>

**Project Team Cost Proposals - Sub Consultants**  
Quintanilla, Headley & Associates, Inc.

**Cost Proposal**  
\$131,200.00 (See detailed break-d

**EXHIBIT D  
FEE PROPOSAL**

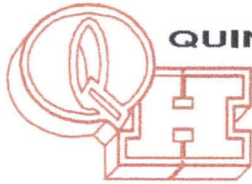
**Arroyo Road Project  
COUNTY PRECINCT #2**

Project Number	MANHOURS						Sub-Contract Amounts	Total Line Item Cost
	Senior Engineer	Project Engineer	Senior Engineering Technician	Senior Environmental Scientist/Specialist	Admin / Clerical	L&G TOTAL HOURS		
				1002	412	1422		\$ 174,851.96
	95	138			26	285		\$ 41,627.68
				374	160	534		\$ 65,008.52
	100	130	128		20	418		\$ 56,431.72
	500	604	437			1621		\$ 225,159.12
	200	223	192			655		\$ 91,001.66
	84	121	99			349		\$ 49,506.86
	300	50			50	485		\$ 80,030.00
	100	120	87		82	439		\$ 57,029.68
	100	134	110			384		\$ 54,003.64
	110	145	101			404		\$ 58,005.14
	40	64	30		36	180		\$ 22,505.04
	51	192			48	314		\$ 41,627.68
	6	7				19		\$ 3,228.38
							\$ 131,200.00	\$ 131,200.00
	<b>1686</b>	<b>1928</b>	<b>1184</b>	<b>1376</b>	<b>834</b>	<b>7509</b>		
70.00	\$ 58.00	\$ 43.00	\$ 30.00	\$ 49.00	\$ 20.00			
211.40	\$ 175.16	\$ 129.86	\$ 96.64	\$ 147.98	\$ 60.40			
<b>211.40</b>	<b>\$ 295,319.76</b>	<b>\$ 250,370.08</b>	<b>\$ 114,421.76</b>	<b>\$ 203,620.48</b>	<b>\$ 50,373.60</b>	<b>\$ 1,020,017.08</b>	<b>\$131,200.00</b>	<b>\$1,151,217.08</b>

(continued break-down of fee on page 2 of 2)

**Total Project Fee (Work Authorization #1):**

**\$1,151,217.08**



**QUINTANILLA, HEADLEY AND ASSOCIATES, INC.**

**Consulting Engineers ★ Land Surveyors**

Alfonso Quintanilla, P.E. # 95534 R.P.L.S #4856 Eulalio Ramirez, P.E. # 77062

Engineering Firm Registration No. F-1513

Surveying Firm Registration No. 100411-00

Municipal & County Projects ★ Subdivisions ★ Surveys

August 24, 2015

Mr. Robert Macheska, P.E., CFM  
Project Manager  
L&G Engineering, Inc.  
900 S. Stewart Road, Ste. 9  
Mission, Texas 78572

**Re: Cesar Chavez Road**

**Limits: Business 83 to Nolana Loop including Outfalls "A", "B" and "C"**

Dear Mr. Macheska:

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

Function Code 150: \$ 131,200.00

Please review this proposal and should you have any questions, please feel free to give me a call at 956-381-6480.

Respectfully,

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

**AI-51121**  
**CC - REGULAR**

**Purchasing Department 22. D. 1.**

**Meeting Date:** 09/01/2015

**Submitted For:** Marty Salazar, PURCHASING DEPT.

**Submitted By:** Rocio Villarreal, PURCHASING DEPT.

**Department:** PURCHASING DEPT.

**Information**

**CAPTION**

a. Acceptance and approval to execute the final form of a Professional Engineering Agreement with L&G Engineering, for "Cesar Chavez Rd (from Business 83 to E. Nolana Loop) Project for Pct 2," as approved for negotiations on CC 8/18/15;

b. Acceptance and approval of Work Authorization No. 1 (estimated cost of \$1,151,217.08) as submitted by project engineer, L&G Engineering to provide the Environmental Assessment, Public Involvement, Schematic Design and Design Survey for Phase I for, "Cesar Chavez Road Project";

c. Pursuant to contract with L&G Engineering, (Article 14) C-15-300-09-01, a request for approval by engineer to permit the subcontracting of Quintanilla, Headley & Associates, Inc. for land surveying for the Cesar Chavez Road Project.

**BACKGROUND**

**Fiscal Impact**

**FISCAL YEAR:** 2015

**ACCT. #:** 5-1345-431-00-122-117-0-XXX

**FUNDS AVAILABLE Y/N?:**

**MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

Funding will be appropriated thru AI#51098 on 9/1/15

**Attachments**

Subcontract Letter-QuintanillaHeadleyAssociates

contract

Work Authorization No. 1

Contract-Legal Approval

**Form Review**

<b>Inbox</b>	<b>Reviewed By</b>	<b>Date</b>
Purchasing Department	Marty Salazar	08/28/2015 11:44 AM
Budget & Management	Veronica Ortiz	08/28/2015 11:46 AM
Glinda Pacheco	Glinda Pacheco	08/28/2015 01:36 PM
Auditor's Office	Monica Badillo	08/28/2015 05:40 PM
Form Started By: Rocio Villarreal		Started On: 08/28/2015 10:16 AM
Final Approval Date: 08/28/2015		