L&G Engineering
Transportation Consultants

June 2, 2016

Mr. Armando Garza, Chief Administrator
**Attn: Ms. Erika Zamora, Director of Administrative Operations**
Hidalgo County Precinct No. 2
300 West Hall Acres
Pharr, Texas 78589

**RE: On-Call Services for "Road and Bridge, C.I.P. and Other Projects in General"**
**C-15-097-03-17**
**Supplemental Agreement #1 to Work Authorization #5 to Agreement for Professional Services for – Yuma Avenue Extension Project**

Dear Ms. Zamora,

Attached for your review and approval is Supplemental Agreement #1 to Work Authorization #5 to Agreement for Professional Services for to the On-Call Services for "Road and Bridge, C.I.P. and Other Projects in General" Contract with Hidalgo County Precinct No. 2. This submittal is made to you in duplicate form for your further coordination with Commissioner Cantu.

We appreciate the opportunity to provide our professional services and look forward to working with you. Should you have any questions, please feel free to give me a call at (956) 585-1909.

Sincerely,

Robert Macheska, P.E., C.F.M.
Project Manager

cc: Mr. Jacinto Garza, P.E. – L&G Engineering

Attachments: Supplemental Agreement #1 to Work Authorization #5

2100 W. Expressway 83 • Mercedes, TX 78570 • Office (956) 565-9813 • Fax (956) 565-9018
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**THE STATE OF TEXAS §**
**§**
**COUNTY OF HIDALGO §**

**SUPPLEMENTAL AGREEMENT NO. 1**
**TO WORK AUTHORIZATION NO. 5**
**TO AGREEMENT FOR PROFESSIONAL SERVICES**
**C-15-097-03-17**

**THIS SUPPLEMENTAL AGREEMENT** is made pursuant to the terms and conditions of paragraph 6 of the Agreement made by and between **HIDALGO COUNTY**, acting 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 the "**Engineer**".

**WITNESSETH**

**WHEREAS**, the **Owner** and the **Engineer** executed the **Agreement** on the 17th day of March, 2015 concerning Engineering for On-Call Services for "Road and Bridge, C.I.P. and Other Projects in General" hereinafter referred to as the ("**Project**"); and,

**WHEREAS**, Paragraph 6 of the **Agreement**, (Amendments), establishes "if it becomes necessary at any time during this Agreement to change the Scope of Services, the Agreement period, the maximum amount payable, the complexity, or the character of this Agreement, an amendment shall be executed by use of a (Supplemental Agreement Form)"; and,

**WHEREAS**, it has become necessary to amend "Exhibit B - Scope of Services to be provided by the Engineer" of Work Authorization No. 5, to remove Acquisition Provider Services.

**WHEREAS**, it has become necessary to amend "Exhibit D – Fee Proposal" of Work Authorization No. 5 to decrease the original Work Authorization amount of **$90,524.74** to **$62,924.74**; therefore the amount of **Supplemental No. 1 is ($27,600.00)**.

**A.** AGREEMENT

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

I. Sections of the Agreement, EXHIBIT "B" – SERVICES TO BE PROVIDED BY THE ENGINEER and EXHIBIT "D" – FEE PROPOSAL, are revised to reflect the above listed modifications of this Supplemental.

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

**IN WITNESS WHEREOF**, the Engineer and the Owner have caused this Supplemental Agreement to the Agreement for Professional Services to be executed as of the _____ day of _____, 2016.

**THE ENGINEER:**
**L&G Engineering**

**BY:**_____
Jacinto Garza, P.E., President
Address for Giving Notices:

2100 West Expressway 83

Mercedes, TX 78570

**THE OWNER:**
**HIDALGO COUNTY**

**BY:**_____
Ramon Garcia, County Judge

**LIST OF ATTACHMENTS**

Exhibit B – Services to be Provided by Engineer
Exhibit D – Fee Proposal

# EXHIBIT B

## Scope of Services to be provided by the Engineer

### SECTION I - 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

PROJECT/DESCRIPTION: On-Call Services for "Road and Bridge, C.I.P. and Other Projects in General"

Work Authorization #5 – Yuma Avenue Extension Project

ENGINEER shall mean L&G Engineering.

STATE shall mean Texas Department of Transportation.

COUNTY shall mean Hidalgo County.

# EXHIBIT B

## Scope of Services to be provided by the Engineer

### SECTION 3 - ROUTE AND DESIGN STUDIES

(Function Code 110)

| Services Provided By: ENGINEER | COUNTY | | |
|---|---|---|---|
| YES | NO | 1. | Route Location Studies* |
| NO | NO | 2. | Level of Service Analysis |
| NO | NO | 3. | Traffic Evaluations and Projections |
| YES | NO | 4. | Develop Roadway Design Criteria |
| YES | NO | 5. | Preliminary Cost Estimates |
| YES | NO | 6. | Design Schematic (See Section 7, page 7-1 for schematic layout requirements) |
| YES | NO | 7. | Preliminary Right-of-Way Requirements |
| YES | NO | 8. | Design Concept Conference (Meet with City of McAllen and HC Pct 2) |
| | | 9. | Soil Core Hole Drilling |
| NO | NO | | a. Pavement (See Section 7, page 7-3 for requirements) |
| NO | NO | | b. Retaining Walls (See Section 10, page 10-1 for requirements) |
| NO | NO | | c. Miscellaneous Structures (See Section 10, page 10-3 for requirements) |
| NO | NO | | d. Bridges (See Section 11, page 11-3 thru 11-4 for requirements) |

* The Phase I or better survey for hazardous material should be included as a determining factor of route selection. Projects which do not require additional right of way should be considered separately from an expansion or new location.

# EXHIBIT B

## Scope of Services to be provided by the Engineer

### SECTION 7 - ROADWAY DESIGN CONTROLS

(Function Code 160)

| Services Provided By: ENGINEER | COUNTY | |
|---|---|---|
| | | 1. Geometric Design |
| YES | NO | a. Horizontal and Vertical Alignment |
| YES | NO | 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. |
| 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. 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. **No geometric design is to be performed until the COUNTY has given the engineer written approval of the preliminary schematic layout.** |
| | | 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: ENGINEER | COUNTY | |
|---|---|---|
| YES | NO | 2. General Guidelines for Project Development *(continued)* |
| | | 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. |
| | | 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. |
| | | 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. |
| | | 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. **Accuracy of the earthwork design is of utmost importance since it is the basis for contractor payments and construction staking.** |
| NO | NO | 3. Exhibit for Airway/Highway Clearance Permits |
| | | 4. Grading Design |
| NO | NO | 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. |
| 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 |
| | | 5. Pavement Design |
| NO | NO | 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. |
| YES | NO | 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. |
| | | c. Embankment and Subgrade |
| | | (1) Soil Core Holes (Show cost estimate with Function Code 110) |
| NO | NO | (a) Along center line |
| NO | NO | (b) Along center line of each roadway |
| | | 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 | |
|---|---|---|
| | | 5. Pavement Design *(continued)* |
| | | c. Embankment and Subgrade *(continued)* |
| NO | NO | (2) Identify,interpret and summarize geologic features that affect engineering design (PI, Sulfate content, % of lime) |
| NO | NO | d. Traffic Data for Pavement Design by STATE |
| NO | NO | e. Basic Design Criteria |
| NO | NO | f. Life Cycle Cost Analysis(es) |
| NO | NO | g. Cost Data |
| NO | NO | h. Pavement Material Properties |
| NO | NO | i. Rehabilitation Investigations |
| NO | NO | (1) Core Hole Survey (Show cost estimate with Function Code 110) |
| | | (a) Determine type and depth of existing material, pavement, etc. The Engineer will determine whether to salvage ACP and FLEXBASE as well as their properties and provide this information to TxDOT. |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

### SECTION 8 - DRAINAGE

(Function Code 161)

| Services Provided By: ENGINEER | COUNTY | |
|---|---|---|
| | | All hydraulic design shall be in accordance with the TxDOT's Hydraulic Manual, except where variances are permitted in writing by the COUNTY. |
| | | 1. Hydrologic Map |
| YES | NO | a. Hydrologic data/discharge determination for outfalls |
| | | 2. Hydraulic Drainage Study and Documentation |
| | | a. Hydraulic computations and Drainage area maps showing existing conditions and proposed improvements. |
| NO | NO | (1) Storm water detention available within the ROW (linear ft. along side drain ditch). |
| NO | NO | (2) Storm water detention required outside the ROW (as per HCDD#1) |
| YES | NO | (3) Culverts |
| NO | NO | (4) Bridge waterways |
| YES | NO | (5) Channels |
| YES | NO | (6) Storm sewers/inlets |
| NO | NO | (7) Pump stations |
| NO | NO | (8) Storm Water Management facilities |
| NO | NO | (9) Other |
| | | (a) Irrigation Canals/Siphons |
| NO | NO | b. Hydraulic report(s) |
| NO | NO | c. Federal Emergency Management Agency (FEMA) floodway requirements |
| YES | NO | d. Determine impact of proposed drainage plan on the following receiving stream(s) |
| | | (1) Hidalgo County Drainage District Outfalls |
| | | (2) All Irrigation District Outfalls impacted |
| | | 3. Layout, Structural Design and Detailing of Drainage Features |
| | | a. Culverts |
| YES | NO | (1) New culverts |
| NO | NO | (2) Culvert widening and/or lengthening |
| YES | NO | (3) Culvert replacements |
| | | b. Storm sewers |
| YES | NO | (1) New storm sewers |
| YES | NO | (2) Modify existing storm sewers |
| YES | NO | (3) Inlets |
| YES | NO | (4) Manholes |
| YES | NO | (5) Trunk lines |
| | | c. Pump stations |
| NO | NO | d. Subsurface drainage at retaining walls |
| NO | NO | e. Outfall channel(s) within the ROW |
| YES | NO | f. Outfall channel(s) outside the ROW |
| NO | NO | g. Detention Pond(s) within the ROW |
| NO | NO | h. Detention Pond(s) outside the ROW |
| YES | NO | i. Summary of Quantities |
| NO | NO | j. Storm Water Management facilities |
| YES | NO | 4. Storm Water Pollution Prevention Plan (SW3P) |
| NO | NO | 5. Scour Evaluation - Waterway Structures only (to be completed by Bridge Engineer under FC 170. |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

### SECTION 9 - SIGNING, MARKINGS AND SIGNALIZATION

(Function Code 162)

| Services Provided By: ENGINEER | COUNTY | | |
|---|---|---|---|
| YES | NO | 1. | Signing and Markings Layout<br>a. Requirements (Separate Layout)<br>(1) Roadway layout<br>(2) Center line with station numbering<br>(3) ROW lines<br>(4) Culverts and other structures that present a hazard to traffic<br>(5) Location of utilities, if not shown on plan and profile<br>(6) Existing signs to remain, to be removed, to be relocated<br>(7) Proposed signs (illustrated and numbered)<br>(8) Existing overhead sign bridges to remain, to be revised, removed or relocated<br>(9) Proposed overhead sign bridges indicating location by plan layout (electrical details need not be shown on this layout)<br>(10) Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation<br>(12) Quantities of existing pavement markings to be removed<br>(13) Proposed delineators and object markers<br><br>b. For projects involving freeway to freeway or other types of directional interchanges, projects including left-hand ramps or connections, the following information must be provided:<br>(1) The location of interchanges, main lanes, grade separations, frontage roads and ramps<br>(2) complete explanation of the sequence and methods of stage construction, where applicable, which would include the initial and ultimate proposed treatment of crossovers and ramps<br>(3) The number of lanes in each section of proposed highway and the location of changes in numbers of lanes<br>(4) The projected traffic volumes as provided by the STATE (20 year traffic projection, unless otherwise determined by the District Engineer)<br>(5) Tentative ROW limits<br>(6) Direction of traffic flow on all roadways<br>(7) Main lane, ramp, frontage road, and necessary cross road profiles at proposed interchanges or grade separations |
| YES | NO | 2. | Summary of Small Signs Tabulation |
| NO | NO | 3. | Summary of Large Signs Tabulation including all Guide Signs |
| YES | NO | 4. | Sign Detail Sheets<br>a. All signs except route markers<br>b. Design details for large guide signs<br>c. Dimensions of letters, shields, borders, corner radii etc.<br>d. Designation of shields attached to guide signs<br>e. Designation of arrow used on exit direction signs |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

| Services Provided By: ENGINEER | COUNTY | |
|---|---|---|
| | | 5. Traffic Signals |
| | | a. Development of Justification (Warrant) Data |
| NO | NO | (1) Location Map<br>Relationship of proposed installation to other traffic signals, highways, business areas and traffic generators |
| NO | NO | (2) Photographs as appropriate |
| NO | NO | (3) Accident data as appropriate |
| | | (4) Vehicle volumes (provided by TxDOT) |
| NO | NO | (a) Existing |
| NO | NO | (b) Estimated |
| NO | NO | (c) Projected |
| NO | NO | (d) Pedestrian |
| NO | NO | (5) Traffic Survey - Count Analysis |
| NO | NO | (6) Recommendation based on above data |
| NO | NO | b. Layout |
| | | (1) Title Sheet (when applicable) |
| | | (a) Describe the location |
| | | (b) Type of installation |
| | | (c) Area map with project limits for each location |
| | | (d) Index of sheets |
| | | (e) Space for official signatures |
| | | (2) Estimate and quantity sheet (when applicable) |
| | | (a) List of all bid items |
| | | (b) Bid item quantities |
| | | (c) Specification item number |
| | | (d) Paid item description and unit of measure |
| | | (3) Basis of estimate sheet (list of materials) |
| | | (4) General notes and specification data sheet |
| | | (5) Condition diagram |
| | | (a) Highway and intersection design features |
| | | (b) Roadside development |
| | | (c) Traffic control including illumination |
| | | (6) Plan sheet(s) |
| | | (a) Existing traffic control that will remain (signs and markings) |
| | | (b) Existing utilities |
| | | (c) Proposed highway improvements |
| | | (d) Proposed installation |
| | | (e) Proposed additional traffic controls |
| | | (f) When applicable, proposed conduit for Railroad interconnect with standard details for runs under tracks. |
| | | (g) Proposed illumination attached to signal poles. |
| | | (7) Notes for plan layout |
| | | (8) Elevation sheet(s) (span wire design) |
| | | (9) Phase sequence diagram(s) |
| | | (a) Signal locations |
| | | (b) Signal indications |
| | | (c) Phase diagram |
| | | (d) Signal sequence table |
| | | (e) Flashing operation (normal and emergency) |
| | | (f) Preemption operation (when applicable) |
| | | (g) Interval timing, cycle length and offset |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

| Services Provided By: ENGINEER | COUNTY | |
|---|---|---|
| | | 5. Traffic Signals *(continued)* |
| NO | NO | b. Layout *(continued)* |
| | | (10) Construction detail sheets(s) |
| | | (a) Poles (TxDOT standard sheets) |
| | | (b) Detectors |
| | | (c) Pull Box and conduit layout |
| | | (d) Controller Foundation standard sheet |
| | | (11) Marking details (when applicable) |
| | | (12) Barricade and warning sign standard sheet and any special details for work zone traffic control for special conditions |
| | | (13) Aerial or underground interconnect details (when applicable) |
| | | c. General Requirements |
| | | (1) Contact local utility company |
| NO | NO | (a) Confirm power source |
| NO | NO | (b) Discuss route of aerial or underground interconnect cable (when applicable) |
| NO | NO | (c) Adjustment of overhead utility lines |
| NO | NO | (2) Prepare governing specifications and special provisions list |
| NO | NO | (3) Prepare project estimate |
| NO | NO | d. Summary of Quantities |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

### SECTION 10 - MISCELLANEOUS (ROADWAY)

(Function Code 163)

| Services Provided By: ENGINEER | COUNTY | |
|---|---|---|
| | | 1. Retaining Walls |
| | | a. Structural Details |
| NO | NO | (1) Cast-in-Place Cantilever at _____ locations. (TxDOT Standard Retaining Wall)* |
| NO | NO | (2) Tiedback Retaining Wall at _____ location. (TxDOT standard retaining wall) |
| NO | NO | (3) Specialized Retaining Wall at _____ locations (Unique Design).* |
| | | b. Alternate Patented Retaining Walls at all locations. (Layouts Only)** |
| NO | NO | (1) Mechanically Stabilized Earth |
| NO | NO | (2) Concrete Block Wall Systems |
| NO | NO | c. Retaining Wall Layout (PLAN) |
| | | (1) Designation of reference line |
| | | (2) Beginning and ending retaining wall stations |
| | | (3) Station of each retaining wall joint*** |
| | | (4) Offset from reference line |
| | | (5) Horizontal curve data |
| | | (6) Number of retaining wall panels and lengths*** |
| | | (7) Total length of wall |
| | | (8) Indicate face of wall |
| | | (9) All wall dimensions and alignment relations (alignment data as necessary) |
| | | (10) Soil core hole locations |
| NO | NO | d. Retaining Wall Layout (ELEVATION) |
| | | (1) Top of wall elevations at each joint or intervals*** |
| | | (2) Existing and finished ground line elevations |
| | | (3) Height of stem at each joint*** |
| | | (4) Wall panel designations*** |
| | | (5) Top of footing elevations*** |
| | | (6) Limits of measurement for payment**** |
| | | (7) Type, limits and anchorage details of railing (If applicable) |
| | | (8) Top and bottom of wall profiles and soil core hole data plotted at correct station and elevation. The plot shall be at the same scale as the wall profile. Ground water elevations and the observation date shall be shown. |
| NO | NO | e. Foundation Studies (Show cost estimate with Function Code 110) |
| NO | NO | (1) The soil core holes shall be obtained at approximately 200 foot intervals along retaining wall alignments. The core holes shall extend 25 feet below the footing elevation. |
| NO | NO | f. Stability Analysis (the ENGINEER shall estimate this task as part of his bid to complete the work). |
| NO | NO | g. Estimate |
| NO | NO | h. Summary of Quantities |
| NO | NO | i. Typical X-section. |
| NO | NO | j. General Guidelines for Retaining Walls |
| | | (1) The ENGINEER shall make final design calculations and final detail drawings in accordance with standard requirements of the Texas Department of Transportation. **The designer and checker shall check all calculations and initial each page.** |
| | | (2) The ground water level should be observed at the water strike. |
| | | (3) For purposes of uniformity statewide, soil core hole data shall be shown on layouts as illustrated in the Bridges and Structures Foundation Exploration and Design Manual. |
| | | (4) Foundation exploration shall conform to the requirements set forth in Administrative Circular No. 25-84, Administrative Circular 33-87 and Administrative Circular No. 25-92. |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

| Services Provided By: ENGINEER | COUNTY | |
|---|---|---|
| YES | NO | 2. Traffic Control Plan, Detours and Sequence of Construction<br>Traffic Control Plans (TCP) are required for all projects. A detailed TCP shall be developed when traffic handling during construction involves complications for which a feasible solution is not covered by the Texas MUTCD or the current Barricade and Construction (BC) Standards. The following items are required on all Traffic Control Plan Layouts:<br>a. The sequence of construction and method of handling traffic during each phase.<br>b. The existing and proposed traffic control devices that will be used to handle traffic during each construction sequence. Include signals, regulatory signs, warning signs, construction warning signs, guide signs, route markers, construction pavement markings, channelizing devices, portable changeable message signs, flashing arrow boards, barricades, barriers, etc.<br>c. The proposed traffic control devices (stop signs, signals, flag person, etc.) at grade intersections during each construction sequence.<br>d. Where detours are provided, typical cross sections shall be shown.<br>e. Road construction work hours shall be developed after an investigation of the traffic volumes has been performed. |
| | | 3. Illumination |
| NO | NO | a. Preliminary Roadway Illumination Layout and Circuit Layout<br>(1) For projects involving freeway to freeway or other types of directional interchanges and projects including left-hand ramps or connections, provide the following:<br>(a) The location of interchanges, main lanes, grade separations, frontage roads and ramps<br>(b) A complete explanation of the sequence and methods of stage construction, where applicable, which would include the initial and ultimate proposed treatment of crossovers and ramps<br>(c) The number of lanes in each section of proposed highway and the location of changes in the number of lanes<br>(d) The projected traffic volumes as provided by the STATE (20 year traffic projection unless otherwise determined by the district engineer)<br>(e) Tentative ROW limits<br>(f) Direction of traffic flow on all roadways<br>(g) Main lane, ramp, frontage road, and necessary cross road profiles at proposed interchanges or grade separations |
| NO | NO | b. Final Roadway Illumination and Electrical Circuit Layouts<br>(1) Roadway layout showing pavement edges, shoulders, curbs, retaining walls, etc.<br>(2) Center line with station numbering.<br>(3) ROW lines.<br>(4) Symbol legend. Use department standard symbols for lighting and electrical.<br>(5) Culverts and other structures that present a hazard to traffic.<br>(6) Location of underground utilities, if not shown on plan profile.<br>(7) Location of overhead electrical lines, both crossing and parallel to ROW.<br>(8) Existing sign lighting circuits and roadway illumination to remain, to be removed, to be relocated.<br>(9) Existing service poles, electrical circuits, ground boxes, etc.<br>(10) Contact electric utility for service pole locations, voltage characteristics.<br>(11) Location of proposed sign lighting circuits and roadway illumination.<br>(12) Proposed electrical circuits.<br>(13) Tabulation of all quantities including proposed, existing to be relocated, existing to be removed. The layout sheet quantities and lighting summary shall be shown. Tabulations to include estimated quantity with a column for final quantities. |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

| Services Provided By: ENGINEER | COUNTY | |
|---|---|---|
| | | 3. Illumination *(continued)* |
| NO | NO | c. General Guidelines for Illumination (If applicable)<br>The ENGINEER shall submit to the COUNTY, well in advance of PS&E due date, the roadway illumination and electrical circuit layout sheets for review by the STATE. Two copies of the layout sheets are to be submitted. One copy will be returned to the Engineer showing corrections that are to be made by the ENGINEER. When final plan submission is made, the ENGINEER shall provide a written statement regarding completion of the corrections. |
| | | 4. Miscellaneous Drafting/Standards |
| YES | NO | a. Erosion Control |
| NO | NO | b. Landscape Development |
| YES | NO | 5. Compute and Tabulate Quantities |
| YES | NO | 6. Special Utility Details (Irrigation lines) |
| | | 7. Miscellaneous Structures |
| | | a. Type of Structure***** |
| | | (1) Overhead Sign Bridges (O.S.B.)<br>Modifications or special O.S.B. designs shall be prepared using the same design assumptions that are used for the standard O.S.B structures. |
| NO | NO | (a) New O.S.B. structure(s) |
| NO | NO | (b) Structural evaluation of existing O.S.B. structure(s) that are to remain in place or to be relocated. |
| NO | NO | (2) High Mast Illumination Poles (HMIP) |
| NO | NO | (3) Traffic Signal Supports |
| NO | NO | (4) Conventional Illumination Poles |
| NO | NO | (5) Sound Barrier Walls |
| NO | NO | b. Checklist for Layouts |
| | | (1) Reference appropriate O.S.B. standard |
| | | (2) Drilled shaft size and length |
| | | (3) Soil strength used for design {indicate basis and boring(s) used} |
| | | (4) Design height |
| | | (5) Tower heights |
| | | (6) Leg spacings |
| | | (7) Design wind speed |
| NO | NO | c. Foundation Studies (Show cost estimate with Function Code 110)<br>The soils exploration requirements for miscellaneous structures on this project are as follows: (To be provided by the Engineer on an as-needed basis) |
| | | 8. Agreements |
| YES | NO | a. Utility Agreements |
| YES | NO | b. Exhibits for Utility Agreements |
| NO | NO | c. Railroad Agreements |
| | | d. Railroad Exhibits |
| NO | NO | (1) Railroad Underpasses |
| NO | NO | (2) Railroad Overpasses |
| NO | NO | (3) Railroad Grade Crossing (Replanking) |
| NO | NO | (4) Railroad Grade Crossing Warning Systems (Signals) |
| NO | NO | (5) Other Miscellaneous Sketches for Railroads |
| NO | NO | e. Traffic Signal Agreements |
| NO | NO | f. Exhibits for Traffic Signal Agreements |
| YES | NO | 9. Estimate |
| YES | NO | 10. Specifications and General Notes |

# EXHIBIT B

## Scope of Services to be provided by the Engineer

### SECTION 14 - ADDITIONAL RESONSIBILITIES

**Easements, Letters of Permission, Etc.**

The ENGINEER shall be responsible for delineating easements. The ENGINEER will be responsible for securing the necessary legal instruments.

**Coordination of Utilities**

The ENGINEER shall furnish the COUNTY 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**

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 COUNTY. The ENGINEER shall coordinate through the COUNTY 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 Specifications**

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 COUNTY**'s** Director. Any replacements to the ENGINEER's designated Project Manager/Engineer must be approved by the COUNTY.

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 COUNTY 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 COUNTY will not relieve the ENGINEER of the responsibility for subsequent correction of any such errors or omissions or for clarification of any ambiguities.

**Document and Information Exchange**

# EXHIBIT B

## Scope of Services to be provided by the Engineer

Data, Plan Sheets, General Notes and/or Specifications provided to the COUNTY shall be furnished on 8GB USB flash drives. Each 8 GB flash drive shall have a file titled Table of Contents. The Table of Contents shall indicate the locations of files within the directory structure of the documentation.

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 COUNTY.

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

CD Tape Required (YES or NO): YES

**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 |
| Environmental Document | Mercedes Office |
| ROW Acquisition | 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).

# EXHIBIT D
# FEE PROPOSAL
## On-Call Services for "Road and Bridge, C.I.P. and Other Projects in General"
## Supplemental #1 to WA#5 - Yuma Avenue Extension Project

| | **Yuma Avenue Extension Project** (Schematic Development, PS&E, ROW Acquisition & Environmental) | **MANHOURS** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Senior Project Manager | Senior Engineer | Project Engineer | Senior Environmental Scientist/ Specialist | CADD Operator/ GIS Analyst | Senior Engineering Technician | Admin / Clerical | L&G TOTAL HOURS | Total Line Item Cost |
| | **CONTRACT RATE (FY 2016)** | **224.58** | **186.08** | **137.96** | **157.21** | **70.58** | **96.25** | **64.17** | | |
| 1 | Schematic Development | 4 | 12 | 11 | | | 10 | | 37 | $ 5,611.34 |
| 2 | Office Surveys for Schematic (Prel. Ownership Identification and Property Rights) | 2 | 6 | 6 | | | 5 | 4 | 23 | $ 3,131.33 |
| 3 | PS&E (Estimated at 8% of Construction Cost) | 26 | 58 | 60 | | | 32 | | 176 | $ 27,989.32 |
| 5 | Utility Coordination | 4 | 10 | 10 | | | 12 | | 36 | $ 5,293.72 |
| 6 | Agreements/Outreach with HCID#2 for Permits and Bypass Concurrence | 8 | 6 | 14 | | | 20 | | 48 | $ 6,769.56 |
| 7 | Meetings & Coordination | 14 | 10 | 8 | | | | | 32 | $ 6,108.60 |
| 8 | Phase I Environmental Study | | | | 38 | 19 | | 11 | 68 | $ 8,020.87 |
| | **Subtotal Hours** | **58** | **102** | **109** | **38** | **19** | **79** | **15** | **420** | **$ 62,924.74** |

**Grand Total $ 62,924.74**