

January 26, 2021

The Honorable David Fuentes
Commissioner, Hidalgo County Pct. No. 1

Attn: David Suarez
1902 Joe Stephens
Weslaco, Texas 78596

RE: Mile 6 Project (Work Authorization No. 3)
Limits: from Mile 14 1/2 to SH 107
Contract No. C-18-195-07-31

Dear Commissioner Fuentes:

As per selection by the Hidalgo County Commissioner’s Court, on July 17, 2018, to have L&G Engineering perform the professional engineering services for the subject project. Attached for your review and approval are two partially signed original Work Authorization No. 3 for the Mile 6 Project to perform engineering services generally identified as follows:

- PS&E Development Roadway and Irrigation Structures
- Signal and Temporary Signal Design
- Geotechnical and Pavement Design
- Permitted Utilities Coordination
- Set of plans for submittal to TxDOT

Work Authorization No. 3 is in the amount of \$1,511,000.00 as identified in the attached Exhibit D-1 “Estimated Man-hour Breakdown”. The following is the funding breakdown for L&G Engineering and our Sub-Consultant’s proposed fees associated with this Work Authorization.

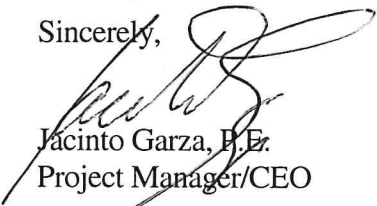
• L&G Engineering (<i>PRIME</i>)	\$ 1,464,052.07
• ETSI (SUB-CONSULTANT– <i>SIGNAL DESIGNS</i>).....	\$ 46,947.93
	TOTAL \$ 1,511,000.00

Attached you will find the following:

- 1.) Two partially executed originals of Work Authorizations No. 3 with the following attachments:
 - Location Map
 - Exhibit A “Services to be provided by the Owner”
 - Exhibit B “Services to be provided by the Engineer”
 - Exhibit C “Work Schedule”
 - Exhibit D-1 “Fee Schedule”

Should you have any questions regarding this submittal, do not hesitate to call me at (956) 565-9813.

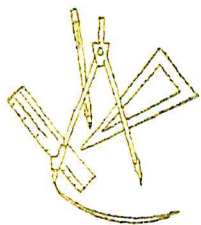
Sincerely,



Jacinto Garza, P.E.
Project Manager/CEO

Attachments

cc: Jorge Pena, Hidalgo County Precinct #1 RPIC



January 26, 2021

The Honorable David Fuentes
Commissioner Hidalgo County Precinct No. 1
Attn: David Suarez
1902 Joe Stephens
Weslaco, Texas 78596

RE: Subcontracting Notice for Mile 6 Project WA#3
Limits: from 14 ½ to SH 107
Contract No. C-18-195-07-31

Dear Commissioner Fuentes:

We would like to inform you of the subcontractor that we will be using on the Mile 6 Road Project WA#3 ~ Agreement for Professional Services. Please coordinate with your Purchasing Department for Commissioner's Court approval of this notification. This subcontractor will be providing Signal and Temporary Signal Design for the above referenced project.

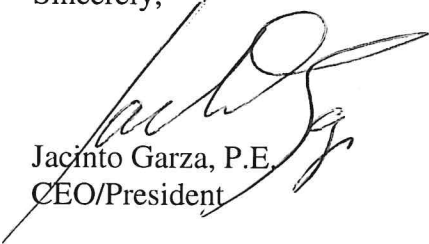
Subcontractor:

Traffic Signals:

Mr. Harry Simeonidis, P.E.
Ergonomic Transportation Solutions, Inc.
11500 Northwest Freeway, Suite 491
Houston, Texas 77092
Phone (713) 956-9601

Should you have any questions, please feel free to give me a call at 956-565-9813.

Sincerely,



Jacinto Garza, P.E.
CEO/President

cc: Jorge Pena – Executive Assistant
Hidalgo County Auditor's Office

HIDALGO COUNTY
Professional Engineering Services
Contract # C-18-195-07-31
Work Authorization Form

WORK AUTHORIZATION NO. 3

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 1 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 Engineering Services required for PS&E Development Roadway, Irrigation Structures, Signals, Geotechnical, Pavement Design, and Permitted Utilities Coordination for submittal to TxDOT.

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 \$1,511,000.00. This amount is based upon the costs outlined in the Estimated Cost Proposal attached hereto as *EXHIBIT "D-1" - Estimated Man-hour Breakdown*.

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. 3 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 shall serve as a Notice to Proceed as per Article 3, Period of Service on the Agreement. This Work Authorization shall terminate upon completion of scopes of the work authorization, as identified on *EXHIBIT "C" - Work Schedule*.

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. 1, Commissioner David Fuentes as to the content and detail of this Work Authorization No. 3.

**HIDALGO COUNTY
COMMISSIONER PRECINCT NO. 1**

BY: _____

PART 8. ACCEPTANCE AND APPROVAL

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

**THE ENGINEER:
L&G ENGINEERING**

**THE OWNER:
HIDALGO COUNTY**

By: 
Jacinto Garza, P.E.
President

By: _____
Richard Cortez,
County Judge

ATTEST:

By: Arturo Guajardo, Jr., County Clerk

LIST OF EXHIBITS

- Location Map
- Exhibit A - Services to be provided by Owner
- Exhibit B - Services to be provided by Engineer
- Exhibit C - Work Schedule
- Exhibit D-1 - Estimated Man-hour Breakdown

EXHIBIT "A"
Services to be provided by the County

1. The County will issue work authorization to initiate all required services and designate the authorized representative of the coordination of each work authorization.
2. The County will provide copies of all subdivision plats of record and/or in the subdivision process.
3. The County will provide the Engineer with on-going guidance, timely reviews, and decisions necessary to complete services required by the work authorization in order to permit the Engineer to maintain an agreed upon project schedule.
4. The County will process all acceptable requests for payment in a timely manner.

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: PS&E Development for Roadway

LENGTH: 2.4 Miles

HIGHWAY: Mile 6

LIMITS: From Mile 14 ½ to SH 107

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.

LPA shall mean Hidalgo County

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

SECTION 7 - ROADWAY DESIGN CONTROLS
(Function Code 160)

Services
Provided By:
ENGINEER COUNTY

- | | | |
|-------------------------|------------------------|--|
| <u>YES</u>
<u>NO</u> | <u>NO</u>
<u>NO</u> | 1. Geometric Design |
| | | 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>NO</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. 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

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|------------|-----------|---|
| <u>NO</u> | <u>NO</u> | 2. General Guidelines for Project Development (<i>continued</i>) <ul style="list-style-type: none"> 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. |
| <u>NO</u> | <u>NO</u> | 3. Exhibit for Airway/Highway Clearance Permits |
| <u>YES</u> | <u>NO</u> | 4. Grading Design <ul style="list-style-type: none"> 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. b. Typical Sections c. Design Cross Sections d. Determine Cut and Fill Quantities e. Slope Stability Analysis f. Embankment Foundation Stability Analysis g. Embankment Settlement Analysis |
| <u>YES</u> | <u>NO</u> | 5. Pavement Design <ul style="list-style-type: none"> 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. 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 <ul style="list-style-type: none"> (1) Soil Core Holes (Show cost estimate with Function Code 110) <ul style="list-style-type: none"> (a) Along center line (b) Along center line of each roadway |
| <u>YES</u> | <u>NO</u> | |
| <u>NO</u> | <u>NO</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

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| <u>YES</u> <u>NO</u>

<u>YES</u> <u>NO</u>
<u>YES</u> <u>NO</u>
<u>YES</u> <u>NO</u>
<u>YES</u> <u>NO</u>
<u>YES</u> <u>NO</u>
<u>YES</u> <u>NO</u> | 5. Pavement Design (<i>continued</i>)
c. Embankment and Subgrade (<i>continued</i>)
(2) Identify, interpret and summarize geologic features that affect engineering design
(PI, Sulfate content, % of lime)
d. Traffic Data for Pavement Design by STATE
e. Basic Design Criteria
f. Life Cycle Cost Analysis(es)
g. Cost Data
h. Pavement Material Properties
i. Rehabilitation Investigations
(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. |
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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.

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

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

- | | |
|----------------------|---|
| <u>YES</u> <u>NO</u> | 1. Signing and Markings Layout <ul style="list-style-type: none"> a. Requirements (Separate Layout) <ul style="list-style-type: none"> (1) Roadway layout (2) Center line with station numbering (3) ROW lines (4) Culverts and other structures that present a hazard to traffic (5) Location of utilities, if not shown on plan and profile (6) Existing signs to remain, to be removed, to be relocated (7) Proposed signs (illustrated and numbered) (8) Existing overhead sign bridges to remain, to be revised, removed or relocated (9) Proposed overhead sign bridges indicating location by plan layout (electrical details need not be shown on this layout) (10) Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation (12) Quantities of existing pavement markings to be removed (13) Proposed delineators and object markers 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: <ul style="list-style-type: none"> (1) The location of interchanges, main lanes, grade separations, frontage roads and ramps (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 (3) The number of lanes in each section of proposed highway and the location of changes in numbers of lanes (4) The projected traffic volumes as provided by the STATE (20 year traffic projection, unless otherwise determined by the District Engineer) (5) Tentative ROW limits (6) Direction of traffic flow on all roadways (7) Main lane, ramp, frontage road, and necessary cross road profiles at proposed interchanges or grade separations |
| <u>YES</u> <u>NO</u> | 2. Summary of Small Signs Tabulation |
| <u>YES</u> <u>NO</u> | 3. Summary of Large Signs Tabulation including all Guide Signs |
| <u>YES</u> <u>NO</u> | 4. Sign Detail Sheets <ul style="list-style-type: none"> a. All signs except route markers b. Design details for large guide signs c. Dimensions of letters, shields, borders, corner radii etc. d. Designation of shields attached to guide signs 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

YES NO

a. Development of Justification (Warrant) Data

(1) Location Map

Relationship of proposed installation to other traffic signals, highways, business areas and traffic generators

YES NO

(2) Photographs as appropriate

YES NO

(3) Accident data as appropriate

(4) Vehicle volumes (provided by TxDOT)

YES NO

(a) Existing

YES NO

(b) Estimated

YES NO

(c) Projected

YES NO

(d) Pedestrian

YES NO

(5) Traffic Survey - Count Analysis

YES NO

(6) Recommendation based on above data

YES 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

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|---|--|
| <p><u>YES</u> <u>NO</u></p> | <p>5. Traffic Signals (<i>continued</i>)</p> <p>b. Layout (<i>continued</i>)</p> <p style="padding-left: 20px;">(10) Construction detail sheets(s)</p> <p style="padding-left: 40px;">(a) Poles (TxDOT standard sheets)</p> <p style="padding-left: 40px;">(b) Detectors</p> <p style="padding-left: 40px;">(c) Pull Box and conduit layout</p> <p style="padding-left: 40px;">(d) Controller Foundation standard sheet</p> <p style="padding-left: 20px;">(11) Marking details (when applicable)</p> <p style="padding-left: 20px;">(12) Barricade and warning sign standard sheet and any special details for work zone traffic control for special conditions</p> <p style="padding-left: 20px;">(13) Aerial or underground interconnect details (when applicable)</p> <p>c. General Requirements</p> <p style="padding-left: 20px;">(1) Contact local utility company</p> <p style="padding-left: 40px;">(a) Confirm power source</p> <p style="padding-left: 40px;">(b) Discuss route of aerial or underground interconnect cable (when applicable)</p> <p style="padding-left: 40px;">(c) Adjustment of overhead utility lines</p> <p style="padding-left: 20px;">(2) Prepare governing specifications and special provisions list</p> <p style="padding-left: 20px;">(3) Prepare project estimate</p> |
| <p><u>YES</u> <u>NO</u></p> <p><u>YES</u> <u>NO</u></p> <p><u>NO</u> <u>NO</u></p> <p><u>YES</u> <u>NO</u></p> <p><u>YES</u> <u>NO</u></p> | <p>d. Summary of Quantities</p> |
| <p><u>YES</u> <u>NO</u></p> | |

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

SECTION 10 - MISCELLANEOUS (ROADWAY)

(Function Code 163)

Services
 Provided By:
ENGINEER COUNTY

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| <p>NO</p> <p>NO</p> <p>NO</p>
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<p>NO</p>
<p>NO</p>
<p>NO</p> | <p>1. Retaining Walls</p> <p>a. Structural Details</p> <p>(1) Cast-in-Place Cantilever at _____ locations. (TxDOT Standard Retaining Wall)*</p> <p>(2) Tiedback Retaining Wall at _____ location. (TxDOT standard retaining wall)</p> <p>(3) Specialized Retaining Wall at _____ locations (Unique Design).*</p> <p>b. Alternate Patented Retaining Walls at all locations. (Layouts Only)**</p> <p>(1) Mechanically Stabilized Earth</p> <p>(2) Concrete Block Wall Systems</p> <p>c. Retaining Wall Layout (PLAN)</p> <p>(1) Designation of reference line</p> <p>(2) Beginning and ending retaining wall stations</p> <p>(3) Station of each retaining wall joint***</p> <p>(4) Offset from reference line</p> <p>(5) Horizontal curve data</p> <p>(6) Number of retaining wall panels and lengths***</p> <p>(7) Total length of wall</p> <p>(8) Indicate face of wall</p> <p>(9) All wall dimensions and alignment relations (alignment data as necessary)</p> <p>(10) Soil core hole locations</p> <p>d. Retaining Wall Layout (ELEVATION)</p> <p>(1) Top of wall elevations at each joint or intervals***</p> <p>(2) Existing and finished ground line elevations</p> <p>(3) Height of stem at each joint***</p> <p>(4) Wall panel designations***</p> <p>(5) Top of footing elevations***</p> <p>(6) Limits of measurement for payment****</p> <p>(7) Type, limits and anchorage details of railing (If applicable)</p> <p>(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.</p> <p>e. Foundation Studies (Show cost estimate with Function Code 110)</p> <p>(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.</p> <p>f. Stability Analysis (the ENGINEER shall estimate this task as part of his bid to complete the work).</p> <p>g. Estimate</p> <p>h. Summary of Quantities</p> <p>i. Typical X-section.</p> <p>j. General Guidelines for Retaining Walls</p> <p>(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.</p> <p>(2) The ground water level should be observed at the water strike.</p> <p>(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.</p> <p>(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.</p> |
|--|--|--|

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>	
<u>YES</u>	<u>NO</u>	2. Traffic Control Plan, Detours and Sequence of Construction 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: <ol style="list-style-type: none"> a. The sequence of construction and method of handling traffic during each phase. 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. c. The proposed traffic control devices (stop signs, signals, flag person, etc.) at grade intersections during each construction sequence. d. Where detours are provided, typical cross sections shall be shown. e. Road construction work hours shall be developed after an investigation of the traffic volumes has been performed.
<u>NO</u>	<u>NO</u>	3. Illumination <ol style="list-style-type: none"> a. Preliminary Roadway Illumination Layout and Circuit Layout <ol style="list-style-type: none"> (1) For projects involving freeway to freeway or other types of directional interchanges and projects including left-hand ramps or connections, provide the following: <ol style="list-style-type: none"> (a) The location of interchanges, main lanes, grade separations, frontage roads and ramps (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 (c) The number of lanes in each section of proposed highway and the location of changes in the number of lanes (d) The projected traffic volumes as provided by the STATE (20 year traffic projection unless otherwise determined by the district engineer) (e) Tentative ROW limits (f) Direction of traffic flow on all roadways (g) Main lane, ramp, frontage road, and necessary cross road profiles at proposed interchanges or grade separations b. Final Roadway Illumination and Electrical Circuit Layouts <ol style="list-style-type: none"> (1) Roadway layout showing pavement edges, shoulders, curbs, retaining walls, etc. (2) Center line with station numbering. (3) ROW lines. (4) Symbol legend. Use department standard symbols for lighting and electrical. (5) Culverts and other structures that present a hazard to traffic. (6) Location of underground utilities, if not shown on plan profile. (7) Location of overhead electrical lines, both crossing and parallel to ROW. (8) Existing sign lighting circuits and roadway illumination to remain, to be removed, to be relocated. (9) Existing service poles, electrical circuits, ground boxes, etc. (10) Contact electric utility for service pole locations, voltage characteristics. (11) Location of proposed sign lighting circuits and roadway illumination. (12) Proposed electrical circuits. (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.
<u>NO</u>	<u>NO</u>	

Services

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

SECTION 11 – PROJECT MANAGEMNT

(Function Code 164)

Meetings, Coordination & Support for Project Management

The Engineer shall meet and coordinate with the Texas Department of Transportation, Hidalgo County Metropolitan Planning Organization, Hidalgo County and the Hidalgo County Drainage District No. 1 and 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.

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

SECTION 12 - CONSTRUCTION PHASE SERVICES

(Function Code 320)

Services
Provided By:
ENGINEER COUNTY

NO NO **CONSTRUCTION MANAGEMENT SERVICES:**

The ENGINEER will provide engineering, geotechnical testing and support services for and during the construction of the Project or portions of the Project approved by the COUNTY. Specific (basic and special) services for CONSTRUCTION MANAGEMENT AND SUPPORT by the ENGINEER will include the following:

Construction Bidding:

- 1) The ENGINEER will furnish the COUNTY the necessary copies of approved plans, specifications, notices to bidders, and proposals as prepared under PS&E.
- 2) The ENGINEER will assist the COUNTY on the tabulation of bids, recommendations to the Owner as to the proper action on all bid proposals received, and the preparation of formal contract documents for the award of each construction contract.

Construction Contract Administration and Inspection:

- 3) In general, the ENGINEER will provide the management and engineering support/data required for consultation and advisement to the COUNTY and act as the COUNTY's representative as provided in the General Condition of the Construction Contract.
- 4) The ENGINEER will coordinate and conduct a pre-construction conference (if required).
- 5) Defects and Deficiencies. The ENGINEER will use his best efforts to protect the COUNTY against defects and deficiencies in the work of the Contractor. The ENGINEER will promptly notify the COUNTY of any such defect or deficiency, and take all steps possible to require the Contractor to correct the defect or deficiency.
- 6) Contractor Payment. The ENGINEER will review quantities as submitted by the Contractor and will coordinate with the COUNTY for the preparation of the monthly and final estimates for payment to the Contractor.
- 7) The ENGINEER will provide Project site inspection of the authorized construction contract as follows:
 - a) Project Engineer. The ENGINEER will provide visits by the Project Engineer or a competent representative of the ENGINEER to the site of construction for the purpose of monitoring the Contractor's progress and conformance to the construction contract plans and specifications.
 - b) Resident Engineer and/or Construction Inspector(s). The ENGINEER will furnish the services of a Resident Engineer and/or Construction Inspector(s) for on the site inspection construction to monitor/inspect the Contractor's daily progress and conformance to TxDOT's PS&E specifications.

EXHIBIT "B"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

NO

NO

Miscellaneous Technical Activities:

- 8) Shop Drawings. The ENGINEER will review and check all shop or working drawings furnished by the Contractor.
- 9) Control of Materials & Equipment. The ENGINEER will provide inspection of all materials and equipment furnished/used by the Contractor as follows:
 - a) Review and record all laboratory, shop and mill tests of materials and equipment for compliance with the construction contract specifications.
 - b) Observe and/or perform Project record testing and/or independent assurance testing as outlined in the construction contract specifications.
- 10) Change Orders. When applicable the ENGINEER will prepare the engineering data, including plan sheet drawings, specifications, and estimates, for the preparation of construction contract change orders, which may be required due to actual field conditions encountered or new requirements directed by the COUNTY.
- 11) As Built Drawings. The ENGINEER will develop as built drawings to depict the work as actually constructed. The COUNTY will be furnished five (5) set of prints.

NO

NO

CONSTRUCTION MATERIAL TESTING:

The ENGINEER will provide the COUNTY with construction material testing services for the Project. The services to be provided include sampling and testing of all construction materials as required by the project plans and specifications. All sampling frequencies and test procedures will be performed in general accordance with the Texas Department of Transportation TEX methods (or ASTM methods as required) as outlined in the Guide Schedule for Sampling and Testing (11/07). The construction material testing includes, but is not limited to the following:

- (a) Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.
- (b) Field density testing of soils and base materials to ensure proper compaction as required by project plans and specifications.
- (c) Field sampling and testing of fresh concrete, and laboratory testing of hardened concrete to determine compliance with project plans and specifications.
- (d) Field compaction testing of asphalt to ensure proper compaction during lay down operations.
- (e) Field inspection, sampling and laboratory testing of asphalt materials to determine their material properties and their compliance with project plans and specifications.
- (f) The ENGINEER will be responsible for concrete batching as well as the asphalt testing at the plants to insure delivery of acceptable material to the job site.
- (g) Any additional laboratory testing as required/requested by the COUNTY and the project plans and specifications.
- (h) Providing accurate and timely reports to the COUNTY and all/other recipients as designated by the COUNTY.
- (i) The ENGINEER will verify the concrete and asphalt designs to assure it is in accordance with TxDOT specifications to be developed by the contractor.

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

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.

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

Document and Information Exchange

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:

<u>Service</u>	<u>Office Location</u>
PS&E	Mission Office

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

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

APPENDIX A - PLAN SHEET SEQUENCE PROCEDURE

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
 - a. Sequence of Construction Layouts
 - b. Detour Plan/Profile/Typical Sections/Quantities
7. Roadway Layouts
 - a. Roadway Plan/Profile Sheets
 - b. Intersection Plan/Profile Sheets
 - c. Intersection Layouts
 - d. Alignment Layouts/Data
 - e. Ramp Layouts/Profiles
 - f. Connection Roads/U-turns Layouts/Profile
8. Roadway Details
 - a. Concrete Pavement Details/Standards
 - b. Concrete Pavement Terminal Anchorage Details/Standards
 - c. Bridge Approach Details/Standards
 - d. Bridge Terminal Anchorage Details/Standards
 - e. Roadway/Median Barrier Details/Standards
 - f. Curb Details
 - g. Driveway Details/Typical Sections/Standards
9. Signing Layouts and Marking Layouts
10. Traffic Signal Layouts
11. Lighting Layouts
12. Illumination Detail Standards (HMID, HMIF, HMIP, RID)
13. Utility Layouts/Profiles
14. Drainage Area Maps and Hydraulic Data
 - a. General Drainage Area Maps
 - b. Stage-Discharge Curves
 - c. Main Cross-Drainage Culvert/Bridge Hydraulic Data
 - d. Drainage Area Maps/Culverts/Storm Sewer
 - e. Hydraulic Data/Culverts/Inlets/Storm Sewer/Pumps
15. Detailed Drainage Plans
 - a. Drainage Plan/Profile Sheets (Storm Sewer Plan/Profile Sheets)
 - b. Channel Plan/Profiles/Typical Sections
 - c. Box Culvert Plan/Profile
 - d. Pipe Sewer/Culvert Cross Sections

EXHIBIT “B”
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

APPENDIX A - PLAN SHEET SEQUENCE PROCEDURE (Continued)

16. Drainage Structural Details/Standards
 - a. Inlet Details/Standards
 - b. Manhole Details/Standards
 - c. Junction Box Details/Standards
 - d. Safety End Treatment Details/Standards
 - e. Box Culvert Details/Standards
 - f. Culvert Wingwall Details/Standards
 - g. Excavation-Backfill Diaphragms
 - h. Riprap Details/Standards
 - i. Temporary Pollution and Erosion Control Details

17. Pumphouse Layouts

18. Pumphouse Details

19. Pumphouse Standard Details

20. Bridge Layouts/Profile/Typical Sections*

21. Bridge Details*
 - a. Summary of Bridge Quantities
 - b. Abutments
 - c. Interior Bents
 - d. Spans
 - e. Special details for the specific bridge

22. Bridge Standard Details*

23. Bridge Railing Standards

24. Retaining Wall Layouts/Profiles**

25. Retaining Wall Details**

26. Retaining Wall Standard Details**

27. Guard Fence/Standards and Signal Pole Standards

28. Signal/Electrical Details/Standards and Signal Pole Standards

29. Signing/Markers/Striping Details/Standards

30. Barricade/Construction/Beacon Standards

31. Miscellaneous Standards
 - a. Chain Link Fence Standards
 - b. Bridge End Detail/Standards
 - c. Roadway Clearance Details/Standards
 - e. Attenuator Standards

NOTE: Variations of these plan sheet sequence guidelines may be permitted if approved in writing by the County.

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

APPENDIX B - PLAN PREPARATION PROCEDURES

1. Title Sheet
The ENGINEER shall be responsible for completing the title sheet as required and formatted by the STATE and as discussed in Part V of the Highway Design, Operations and Procedures Manual. Refer to Section K - Plans, 1 - Title Sheets, page 5-24, for the procedure to be used regarding all plans prepared by the ENGINEER.
2. Project Layout
The project layout shall clearly depict the entire project as it is proposed and will usually be drawn at a scale of 1 inch=100 feet or 1 inch=200 feet, depending on the size of the project.
3. Typical Sections
See Part IV of the Highway Design, Operations and Procedures Manual.
4. Sequence of Work Sheets (Traffic Control Plan)
Clarity and completeness should be the rule to follow in preparing these sheets, with particular attention given to location of construction signs and barricades, lane widths, protection of drop offs, etc. For a reference guide use the Texas Department of Transportation, Texas Manual on Uniform Traffic Control Devices. Usual scale of 1 inch=100 feet and/or 1 inch=50 feet for special locations. A narrative sequence shall be included in the special provisions for the project. Staging of structural elements shall be considered. Provisions for drainage shall be considered, included and indicated during all stages of construction operations.
5. Removal Item Sheets
These sheets indicate removal of existing facilities necessary to the proposed construction. (1 inch=40 feet) (use same scale as plan/profile sheets).
6. Summary Sheets
Summary Sheets are required to indicate type, quantity and/or location of work for individual items of the proposed project.
7. Alignment Layout Sheets
These sheets indicate the horizontal alignment with curve data and coordinates usually tabulated thereon. On some projects, depending on size, this information may be included on the plan profile sheets. Usual scale (1 inch=100 feet) or (1 inch=40 feet).
8. Plan Profile Sheet
Clarity and completeness should be the rule to follow in preparation of these sheets. Usual scale (1 inch=40 feet or 1 inch=50 feet) or (1 inch=20 feet), depending on project complexity.
9. Drainage Area Maps
Usual scale (1 inch=100 feet) and/or (1 inch=200 feet) supplemented by large scale area maps as necessary.
10. Drainage Plan Profile Sheets
These sheets may be required on some projects to clearly depict location of inlets, storm sewer lines, and profile of storm sewer lines and laterals. Usual scale (1 inch=40 feet or 1 inch=50 feet) or (1 inch=20 feet). Storm sewer design does include redesign of storm sewers imposed by utility constraints developing after initial reviews by the STATE and consequential redesign and adjustments.
11. Runoff, Inlet, Storm Sewer and Culvert Sheets
Use standard sheets.

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

APPENDIX B - PLAN PREPARATION PROCEDURES (Continued)

12. Culvert Cross Sections and Details

District standard reproducible sheets can be furnished (one each) to the ENGINEER for modification of special designs.

13. Manhole and Inlet Details

District standard reproducible sheets can be furnished (one each) to the ENGINEER.

14. Miscellaneous Detail

Curb, Sidewalk, Driveways, etc.

15. Intersection Details

16. Marking Layouts and/or Details

Layouts of the entire project with markings depicted thereon. Usual scale 1:500 (1 inch=40 feet or 1 inch=50 feet). On some projects typical details might suffice.

17. Structural Details

Bridge layout sheets shall have the same horizontal and vertical scale. Usually (1 inch = 10 feet) (1 inch = 20 feet). Sections of existing and proposed structures usually have a scale of (1 inch = 5 feet). Elements of the bridge (abutments, bents, slabs, etc.) shall be detailed to a (1/2 inch = 1 foot) or (1/4 inch equals 1 foot) architect scale to provide clear legible drawings when reduced. Letters shall be a minimum size of 4 millimeters (5/32 inch) height for hand lettering and 140 for lettering by computer-aided design and drafting (CADD).

18. Overhead Sign Bridge Layouts

A maximum of four structures may be shown on each layout sheet. The reference to the appropriate overhead sign bridge (OSB) standard and the following requirements shall be shown on the layout:

- (1) Drilled shaft size and length
- (2) Soil strength used for design { indicate basis and boring(s) used }
- (3) Design height
- (4) Tower height
- (5) Leg spacings and
- (6) Design wind speed.

The wind speed design map need not be included in the project plans. Designation of tower member size and anchor bolt size shall not be shown. For OSBs which require special design, the design shall be in accordance with the AASHTO sign specifications (see Item 22 of References on page 49) and to the same loading requirements as for normal standard structures. Structures (special or standard) which will have changeable message signs shall be analyzed by the ENGINEER.

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

APPENDIX C - GENERAL PLAN CHECKLIST

Services
 Provided By:
ENGINEER COUNTY

—	—	Title Sheet
—	—	Project Layout
—	—	Sequence of Work
—	—	Detour Layouts & Profiles
—	—	Construction Pavement Markings
—	—	Signing & Barricades
—	—	Construction Sign & Beacons
—	—	Typical Sections
—	—	Shaping & Finishing Sections
—	—	Slopes Adjacent to Shoulders
—	—	Estimate & Quantities
—	—	General Notes & Specification Data
—	—	Grading Summary
—	—	Miscellaneous Summaries (See following "SUMMARIES" heading)
—	—	Horizontal Curve Data & Alignment Layouts
—	—	Drainage Summaries
—	—	Structure Summaries
—	—	Erosion Control Summary & Details
—	—	Plan/Profile Sheets
—	—	Erosion Control Summary & Details
—	—	Pavement Contours
—	—	Superelevation Transition (If Required)
—	—	Grading Contours
—	—	Guard Fence Layouts
—	—	Storm Water Pollution Prevention Plans (SW3P)
—	—	Drainage Area Maps
—	—	Hydraulic Data
—	—	Drainage Sheets
—	—	Bridge Hydrology Sheets
—	—	Inlet & Manhole Details
—	—	Utility Support Details
—	—	Culvert Cross Sections & Details
—	—	Special Culvert Designs
—	—	Special Drainage Details
—	—	Chain Link Fence Locations
—	—	Ramp Details Sheet
—	—	Removal Item Sheet - Including detours (Shown in detour summary, No payment for removal; subsidiary to construction detours)
—	—	Pavement Details
—	—	Pavement Standard Modification for Concrete Shoulder
—	—	Concrete Pavement Continuously Reinforced (CPCR)
—	—	Concrete Pavement Contraction Design (CPCD)
—	—	Concrete Pavement Details - Jointed Reinforced (Steel Bars) (CPJR)
—	—	Bridge Approach Slab Details
—	—	Vehicle Attenuator Details
—	—	Miscellaneous Details
—	—	Wheelchair Ramps
—	—	Pavement Marking Details
—	—	Modified Standards
—	—	List of Standards
—	—	Permanent Signing Plans & Quantities

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

APPENDIX C - GENERAL PLAN CHECKLIST (continued)

Services
 Provided By:
ENGINEER COUNTY

- | | | |
|-----|-----|---|
| ___ | ___ | Permanent Lighting Plans, Quantities & Standards |
| ___ | ___ | Bridge Layout(s) |
| ___ | ___ | Bridge Details |
| ___ | ___ | Retaining Wall Layout(s) |
| ___ | ___ | Retaining Wall Details |
| ___ | ___ | Pumphouse Details |
| ___ | ___ | Underdrain Details (Retaining Walls) |
| ___ | ___ | Culvert Standards |
| ___ | ___ | Soil Profile |
| ___ | ___ | Temporary Traffic Signals |
| ___ | ___ | Design Cross Sections |
| ___ | ___ | Estimate |
| ___ | ___ | List of Standard Specification, Special Provisions & Special Specifications |
| ___ | ___ | Detour Special Provisions (If Required) |
| ___ | ___ | Construction Time Estimate |
| ___ | ___ | Critical Path Method (CPM) |
| ___ | ___ | Unit Price Documentation |

Miscellaneous

- | | | |
|-----|-----|-----------------------------|
| ___ | ___ | Conduit Requirements |
| ___ | ___ | Traffic signal Requirements |

Summaries

(ALL BELOW YES FOR ENGINEER AND NO FOR COUNTY UNLESS NOTED OTHERWISE)

- | | | |
|-----|-----|---|
| ___ | ___ | Salvaging and Placing Topsoil |
| ___ | ___ | Prepare ROW |
| ___ | ___ | Remove Old Structures |
| ___ | ___ | Scarify Existing Pavement |
| ___ | ___ | Remove Old Concrete Curb of Curb and Gutter (C&G) |
| ___ | ___ | Remove Old Concrete Pavement |
| ___ | ___ | Remove Old Concrete Riprap |
| ___ | ___ | Remove Metal Beam Guard Fence |
| ___ | ___ | Galvanized steel Beam Guard Fence (12Ga) (GSBGF) |
| ___ | ___ | Temporary Guard Fence (TEMPGF) |
| ___ | ___ | Summary of Concrete Flumes |
| ___ | ___ | Curbs |
| ___ | ___ | Adjust Manholes & Inlets |
| ___ | ___ | Underdrains |
| ___ | ___ | Base and Pavement |
| ___ | ___ | Large Structure |
| ___ | ___ | Concrete Riprap (RR8 & RR9) |
| ___ | ___ | Temporary Portable Concrete Barrier (PCBR) |
| ___ | ___ | Concrete Traffic Barrier |
| ___ | ___ | Vehicle Attenuator |
| ___ | ___ | Guard Rail Energy Absorbing Terminal (Great System) |
| ___ | ___ | Pavement Markings & Blast Cleaning (Thermoplastic) |
| ___ | ___ | Retaining Walls |
| ___ | ___ | Large Structure Summaries |
| ___ | ___ | Small Structure Summaries |

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

APPENDIX C - GENERAL PLAN CHECKLIST *(continued)*

Services
Provided By:
ENGINEER COUNTY

Summaries (ALL BELOW YES FOR ENGINEER AND NO FOR COUNTY UNLESS NOTED OTHERWISE)

- | | | |
|-----|-----|---|
| ___ | ___ | Earthwork (Roadway & Channel) & Channel Details |
| ___ | ___ | Culverts |
| ___ | ___ | Detours |
| ___ | ___ | Seeding or Mulch Sod - Quantity Only |
| ___ | ___ | Inlet & Manholes |
| ___ | ___ | Sidewalks |
| ___ | ___ | Construction Pavement Markings |
| ___ | ___ | Driveways |
| ___ | ___ | Concrete Median |
| ___ | ___ | Storm Sewers |
| ___ | ___ | Head Walls & Safety End Treatments |
| ___ | ___ | Curb Openings |
| ___ | ___ | Manholes |
| ___ | ___ | Chain Link Fence, Remove & Replace Chain Link Fence |
| ___ | ___ | Remove & Relay Reinforced Concrete Pipe (RCP) or Pipe Sewer |

EXHIBIT D-1
ESTIMATED MAN-HOUR BREAKDOWN
Mile 6 PROJECT

	MANHOURS										Sub-Contract Amounts	TOTAL LINE ITEM COST	
	Senior Project Manager	Senior Engineer	Senior Environmental Scientist/Specialist	Project Engineer	Senior Engineer Tech	CADD Operator / GIS Analyst	Admin / Clerical	TOTAL HOURS					
WORK AUTHORIZATION NO. 3	215.34	180.42	171.89	139.68	116.40	78.57	58.20						
Phase III - PS&E & Construction Oversight (SECTION 2)													
1 PS&E Development Roadway (8% Engineering Fee)	350	1250		2300	3344		200.76	7444.76	\$	-	\$	1,023,094.00	
2 Permanent Multilane control signs and Signals and Temporary Signal Designs	3	7		4	4		2.04	20.04	\$	-	\$	3,052.07	
3 Permanent Multilane control signs and Signals and Temporary Signal Designs (SUB)									\$	48,947.93			
4 PS&E Development for Irrigation Structures	95	215		240	343		63.92	956.92	\$	-	\$	136,416.00	
5 Geotechnical and Pavement Design for TXDOT	55	145		236	150		26.99	612.99	\$	-	\$	90,000.00	
6 Engineering Fee to Create 1 set of Plans and Submitt through TXDOT	40	60		160	210		21.79	491.79	\$	-	\$	67,500.00	
7 Permitted Utilities Coordination to adjust	80	140		320	450		76.23	1066.23	\$	-	\$	144,000.00	
SUB-TOTAL	623	1817	0	3260	4501	0	391.739	10592.739	\$	48,947.93	\$	1,464,052.07	

Sub-Total Manhours Fee with Subconsultant Fee: \$ 1,511,000.00

* TOTAL PROJECT FEE: \$ 1,511,000.00

[†]Rounded Figure

ERGONOMIC TRANSPORTATION SOLUTIONS, INC.

*5300 Hollister, Suite 220
Houston, Texas 77040
Tel. (713) 956-9601
Fax: (713) 956-9667*

January 25, 2021

Mr. Jacinto Garza, P.E.,
President
L & G Engineering
2100 W. Expressway 83
Mercedes, Texas 78570

**Reference: Traffic Engineering Services for
Mile 6 West Road: From Mile 14.5 North Road to SH 107,
Hidalgo County, Texas**

Dear Jacinto:

We are pleased to submit the attached fee proposal to conduct the referenced services. Our work will cover Multi-Way Stop and signal warrant studies at:

- Mile 6 West Road at Mile 14.5 North Road (Flashing Beacon Design)
- Mile 6 West Road at Mile 15 North Road (Flashing Beacon Design)
- Mile 6 West Road at Mile 15.5 North Road (Flashing Beacon Design)
- Mile 6 West Road at Mile 16 North Road (Flashing Beacon Design)
- Mile 6 West Road at SH 107 (Permanent and Temporary Traffic Signal Design)

Our proposed fee for the flashing beacon and signal designs is \$46,947.93. Exhibit A shows the proposed services, while Exhibit B shows a breakdown of our proposed fees.

As always we thank you for giving us the opportunity to assist you.

Sincerely,



Harry C. Simeonidis, P.E.,
President

Attachments

EXHIBIT "A"
SCOPE OF SERVICES
TRAFFIC ENGINEERING AND DESIGN SERVICES
Along Mile 6 West Road: From Mile 14.5 North Road to SH 107

Project Understanding

The proposed improvements along Mile 6 West Road include widening of the existing two lane road to four lanes with flush median.

The roadway improvements will affect the existing signalized intersection at SH 107, which will need to be brought up to current TxDOT accessibility standards. The proposed roadway will also cross several minor collector roads, for which stop controls with flashing beacons were recommended by warrant studies.

A temporary signal would also be placed at the intersection of SH 107 to accommodate traffic during construction.

ETSI will produce a complete set of Plans, Specifications and Cost Estimates (PS&E) that cover the following:

- Mile 6 West Road at Mile 14.5 North Road: (Flashing Beacon Design)
- Mile 6 West Road at Mile 15 North Road: (Flashing Beacon Design)
- Mile 6 West Road at Mile 15.5 North Road: (Flashing Beacon Design)
- Mile 6 West Road at Mile 16 North Road: (Flashing Beacon Design)
- Mile 6 West Road at SH 107: (Temporary and Permanent Signal Design)

Shown below in detail, is ETSI's scope of services:

FLASHING BEACON AND TRAFFIC SIGNAL DESIGN:

ETSI will prepare plans, specifications and cost estimates for four flashing beacons and one signal design, as follows:

TASK 1 – General Notes for Traffic Signal Installation

ETSI will prepare the general notes based on TxDOT's latest practices.

TASK 2 – Basis of Estimate

ETSI will prepare Basis of Estimate sheet(s) with adequate number of columns to reflect the number of the above intersections and one column for the total quantities.

ETSI will calculate quantities at 90% and 100% levels of completion or as directed by L&G.

TASK 3 – Condition Diagram

ETSI will collect from various agencies the existing signal plans for the above intersections. Information from these plans will be verified in the field and then incorporated into the condition

diagram sheets.

ETSI will setup the condition diagram sheets that would show the existing configuration of each intersection, existing utilities and other elements in accordance with TxDOT design practices and as required by L&G. ETSI will show which items are to be removed and which to are to remain.

TASK 4 – Proposed Signal/Flashing Beacon Plan Layout

ETSI will setup proposed signal/flashing beacon layout sheets that would show the proposed geometry of the above intersections along with the basic elements of the signal design, such as location of signal poles, pedestrian poles, wheel chair ramps, cross walks and service pole locations, in accordance with TxDOT Signal Design practices and as required by L&G.

The proposed layouts will also show existing equipment to remain, existing equipment to be removed and proposed new equipment to be installed by the contractor.

ETSI with assistance from L&G Engineering will contact the local power company for electrical service requirements at each of the above intersections.

ETSI will produce submittals for Client's review at the 90% and 100% completion levels or as directed by L&G.

TASK 5 – Signal Phasing and Timing

ETSI will develop optimal phasing and timing chart for the signalized intersection. The chart will be presented to TxDOT for review and approval before incorporation into the plan sheets.

TASK 6 – Electrical Schedules

ETSI will prepare tables, depicting the electrical schedule for the wiring connections at each intersection.

TASK 7 – Intersection Signing, Pavement Markings and Curb Ramps

While working on the proposed layouts, ETSI will also locate the cross walks and stop bars at the intersections, as they affect the signal design and furnish this information to L&G. Curb ramps and cross walks will conform to current US Access Board's Proposed Accessibility Guidelines as well as ADA standards.

ETSI will produce submittals for Client's review at the 90% and 100% completion levels.

TASK 8 – Standard Sheets List

ETSI will prepare a list of standard sheets for the 90% and 100% submittals. ETSI will also prepare the drill shaft tables on the TSFD standard sheet as well as the shipping parts list on the SP/SMA standard sheet.

TASK 9 –Specifications List and Cost Estimate

ETSI will prepare a list with all pertinent specifications and special provisions as they relate to the above tasks. ETSI will also prepare cost estimates using Pharr District's average bid values at the 90% and 100% submittals.

TASK 10 – Coordination and Meetings

ETSI will participate in one or more project progress meetings as requested by L&G.

TASK 11 – Temporary Traffic Signal Design: Mile 6 West Road at SH 107

ETSI will setup temporary signal layouts that will show the existing and proposed geometry at the this signalized intersection along with the area under construction and the traffic paths for each construction phase. Signal heads will be properly repositioned over the traveled lanes to accommodate each phase of construction. Two construction phases are anticipated for the construction of Mile 6 West Road. Existing and proposed equipment will be used to minimize conflicts between traffic and construction area.

Electrical schedules would be provided for the temporary signals as needed. ETSI will prepare tables, depicting the electrical wiring connections for each phase of construction as needed.

Quantities summaries for temporary equipment for each construction phase will be prepared along with appropriate notes and a construction cost estimate.

SERVICES TO BE PROVIDED BY L&G ENGINEERING

L&G will furnish ETSI hard copies and electronic versions of the existing topographic data to include all existing utilities, as well as the proposed geometric design with all related reference files.

L&G may also provide previously conducted studies along the project limits.

L&G will be responsible for contacting all utility companies present at the above intersections and furnish such information to ETSI. ETSI will assist L&G in identifying and resolving utility conflicts as required by L&G.

L&G shall also provide coordination and communication for the progress of the traffic design work among all parties involved.

TIME SCHEDULE

Assuming all information is available, ETSI can produce 90% complete drawings within eight (8) weeks of the notice to proceed. After receipt of the 90% review comments, ETSI can produce 95% and 100% complete drawings within one week of L&G's review comments. ETSI will submit electronic version of all work performed to L&G. The final submittal will be in electronic format.

EXHIBIT B "FEE SCHEDULE" - FLASHING BEACON & TRAFFIC SIGNAL DESIGN
 Along Mile 6 West Road: From south of Mile 14.5 North Road to SH 107
 Ergonomic Transportation Solutions, Inc.

TASK	MANHOURS							Total
	No. of sheets (estimated)	Project Manager	Senior Transp. Engineer	Transportation Engineer	CADD Designer	Administrative Assistant		
1	n/a	1	1	2		4	8	
2	1	1	2	4	4		11	
3	5	2	6	24	24		56	
4	5	6	36	36	64		142	
5	n/a	1	4	8			13	
6	1	6	12	24	12		54	
7	n/a	2	6	8	4		20	
8	12	1	8	8			17	
9	1	2	6	8	8		24	
10	n/a	12					12	
11	2	6	12	28	28		74	
Subtotal	27	40	93	150	144	4	431	

Total Sheets/Labor Hours	27	40	93	150	144	4	431
Contract Rates		\$ 68.00	\$ 46.00	\$ 34.00	\$ 23.00	\$ 19.00	
Direct Salary Cost		\$ 2,720.00	\$ 4,278.00	\$ 5,100.00	\$ 3,312.00	\$ 76.00	\$ 15,486.00
Overhead Multiplier	165.260%	\$ 4,495.07	\$ 7,069.82	\$ 8,428.26	\$ 5,473.41	\$ 125.60	\$ 25,592.16
Fixed Fee	12.50%	\$ 901.88	\$ 1,418.48	\$ 1,691.03	\$ 1,098.18	\$ 25.20	\$ 5,134.77
Total Labor Costs		\$ 8,116.96	\$ 12,766.30	\$ 15,219.29	\$ 9,883.59	\$ 226.80	\$ 46,212.93

Ergonomic Transportation Solutions, Inc. Expenses

EXPENSES	
Printing Reproduction	\$ 50.00
Travel	\$ 650.00
Deliveries	\$ 35.00
Total Expenses	\$ 735.00

ETSI Total Cost

\$ 46,947.93