

**HIDALGO COUNTY**  
**Professional Engineering Services**  
**Contract # C-15-427-12-15**  
**Work Authorization Form**  
  
**WORK AUTHORIZATION NO. 1**

**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 the preparation for the Environmental Assessment, Public Involvement, Schematic Design and Hydrologic Map for the FM 676 (Mile 5) from SH 107 (Conway) to Taylor Road.

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 **\$737,400.00**. 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. 1 shall be funded through funding source:

Account No. \_\_\_\_\_

Requisition Number \_\_\_\_\_ (MUST BE INCLUDED AFTER CC APPROVAL)

**PART 5. PERIOD OF SERVICE**

This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of scopes of the work authorization, 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. 3, Commissioner Joe Flores as to the content and detail of this Work Authorization No. 1.

**HIDALGO COUNTY  
COMMISSIONER PRECINCT NO. 3**

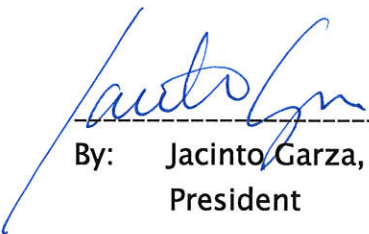
BY:\_\_\_\_\_

**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

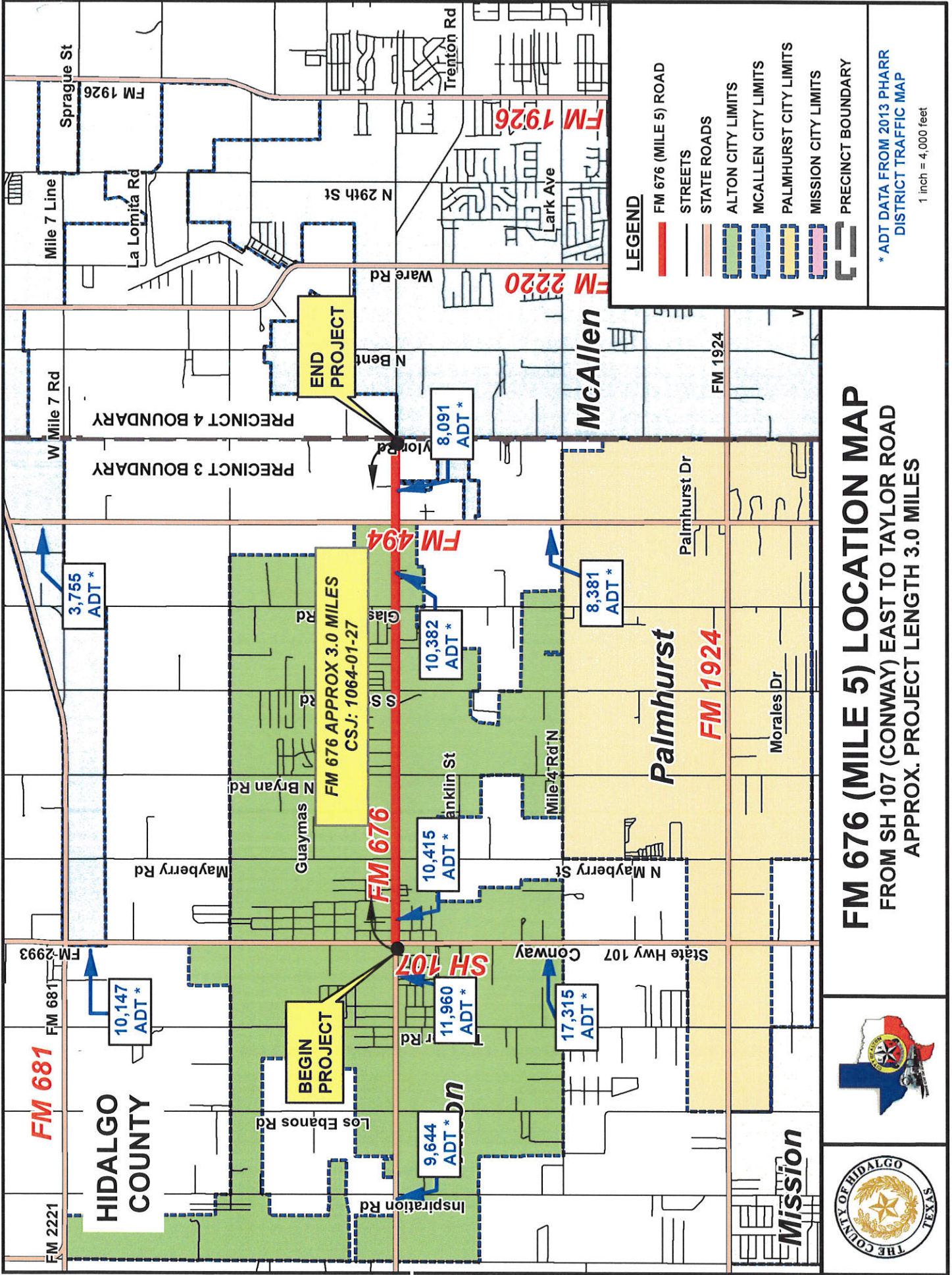
\_\_\_\_\_  
By: Ramon Garcia,  
County Judge

**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



# FM 676 (MILE 5) LOCATION MAP

FROM SH 107 (CONWAY) EAST TO TAYLOR ROAD  
APPROX. PROJECT LENGTH 3.0 MILES

- LEGEND**
- FM 676 (MILE 5) ROAD
  - STREETS
  - STATE ROADS
  - ALTON CITY LIMITS
  - MCALLEN CITY LIMITS
  - PALMHURST CITY LIMITS
  - MISSION CITY LIMITS
  - PRECINCT BOUNDARY

\* ADT DATA FROM 2013 PHARR DISTRICT TRAFFIC MAP

1 inch = 4,000 feet

**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**

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**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: CSJ: 1064-01-27

PROJECT/DESCRIPTION: ENVIRONMENTAL DOCUMENT, PUBLIC INVOLVEMENT, SCHEMATIC DESIGN

LENGTH: 3.0 MILES

HIGHWAY: FM 676 (MILE 5)

LIMITS: FROM SH 107 (CONWAY) TO TAYLOR ROAD

**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.

CITY shall mean the City of Alton.

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

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SECTION 2 – FEASIBILITY STUDIES  
(Function Code 102)

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

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

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**SECTION 3 - ROUTE AND DESIGN STUDIES**

(Function Code 110)

Services  
Provided By:  
ENGINEER CITY/COUNTY

<u>YES</u>	<u>NO</u>	1. Route Location Studies
<u>N/A</u>	<u>N/A</u>	2. Level of Service Analysis
<u>YES</u>	<u>NO</u>	3. Traffic Evaluations and Projections
<u>YES</u>	<u>NO</u>	4. Develop Roadway Design Criteria
<u>YES</u>	<u>NO</u>	5. Preliminary Cost Estimates
<u>YES</u>	<u>NO</u>	6. Design Schematic (See Section 7, page 7-1 for schematic layout requirements)
<u>YES</u>	<u>NO</u>	7. Preliminary Right-of-Way Requirements
<u>YES</u>	<u>NO</u>	8. Design Concept Conference
		9. Soil Core Hole Drilling
<u>N/A</u>	<u>N/A</u>	a. Pavement (See Section 7, pages 7-2 thru 7-3 for requirements)
<u>N/A</u>	<u>N/A</u>	b. Retaining Walls (See Section 10, page 10-1 for requirements)
<u>N/A</u>	<u>N/A</u>	c. Miscellaneous Structures (See Section 10, page 10-3 for requirements)
<u>N/A</u>	<u>N/A</u>	d. Bridges (See Section 11, page 11-2 thru 11-3 for requirements)

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

**SECTION 4 - SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES  
AND PUBLIC INVOLVEMENT**

(Function Code 120)

Services  
Provided By:  
ENGINEER CITY/COUNTY

		1. Environmental Reports
		All Environmental Reports shall be in accordance with 43 Texas Administrative Code (TAC) 2.40-2.51, Code of Federal Regulations, Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.
		a. Environmental Assessments
<u>N/A</u>	<u>N/A</u>	(1) An Environmental Assessment shall be prepared, anticipating a Categorical Exclusion.
<u>YES</u>	<u>NO</u>	(2) An Environmental Assessment shall be prepared in accordance with 23 USC 327 and the 2014 TxDOT-FHWA Memorandum of Understanding, anticipating a Finding of No Significant Impact.
<u>N/A</u>	<u>N/A</u>	(3) An Environmental Assessment shall be prepared, anticipating the need for a Draft Environmental Impact Statement.
		b. Environmental Impact Statement
<u>N/A</u>	<u>N/A</u>	(1) A Draft Environmental Impact Statement shall be prepared. After appropriate interagency and public reviews within time limits prescribed by the Code of Federal Regulations, Title 23, Part 771 and 43 Texas Administrative Code 2.40-2.51, a Final Environmental Impact Statement shall be prepared.
<u>N/A</u>	<u>N/A</u>	(2) A Section 4(f) Statement (Department of Transportation Act) shall be provided by the ENGINEER. The format and content of the statement is found in FHWA Technical Advisory T6640.8A.
		2. Public Involvement
		All public involvement procedures shall be in accordance with 43 Texas Administrative Code (TAC) 2.40-2.51, Code of Federal Regulations Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.
<u>YES</u>	<u>NO</u>	a. A public involvement meeting(s) and public hearing shall be scheduled, coordinated and conducted.
<u>YES</u>	<u>NO</u>	b. Technical assistance for one public meeting and one public hearing, preparation of, and maintenance of contact lists, minutes of meeting(s), exhibit preparation, and other tasks outlined by the COUNTY, shall be provided.
<u>YES</u>	<u>NO</u>	c. A Notice of Availability (NOA) shall be published by the COUNTY upon approval of the environmental decision.
		3. Technical Reports
		All technical reports shall be prepared in accordance with TxDOT's environmental rules and guidelines.
<u>YES</u>	<u>NO</u>	a. Air Quality Analysis An air quality analysis shall be prepared in accordance with the STATE'S Air Quality Guidelines. The air quality analysis shall be provided as a Technical Report and a summary of the air quality results included in the administratively complete document for the project.
<u>YES</u>	<u>NO</u>	b. Biological Technical Report A biological form and technical report shall be prepared in accordance with the STATE'S Biological Guidelines. The report will include water resources, and threatened and endangered species.
		c. Cultural Resources Historical and archeological studies shall be completed in accordance with the STATE'S guidelines.

## EXHIBIT "B"

### SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Services Provided By:		
<u>ENGINEER</u>	<u>CITY/COUNTY</u>	
<u>YES</u>	<u>NO</u>	(1) Historic Structure Studies A records search, project coordination request, and reconnaissance survey shall be performed, and documentation prepared regarding identification efforts, National Register eligibility and potential impacts to historic properties in accordance with the state's historic structure requirements.
<u>YES</u>	<u>NO</u>	(2) Archeological Studies File searches, project coordination request, an archeological reconnaissance, and an archeological survey shall be conducted to determine if known archeological sites are present or have been designated State Archeological Landmarks; and to identify the need (if any) to perform additional archeological investigations.
<u>YES</u>	<u>NO</u>	d. Community Impact Analysis A community impact analysis shall be prepared in accordance with the STATE'S Community Impact Guidelines.
<u>YES</u>	<u>NO</u>	e. Hazardous Materials The consultant shall perform an Initial Site Assessment (ISA) for hazardous materials impact in accordance with the American Society for Testing and Materials (ASTM) 1528.93 (Transaction Screen Process) and a Hazardous Materials Technical Report, as needed.
<u>YES</u>	<u>NO</u>	f. Indirect and Cumulative Impacts Analysis An indirect and cumulative impacts analysis shall be prepared in accordance with the STATE's guidelines.
<u>YES</u>	<u>NO</u>	g. Noise Analysis A noise analysis shall be prepared, including predicted noise levels and the consideration and evaluation of noise mitigation, in accordance with the STATE'S Noise Guidelines. The noise analysis shall be provided as a Technical Report and a summary of the noise analysis results shall be included in the administratively complete document.
<u>YES</u>	<u>NO</u>	4. Environmental Scoping The ENGINEER shall initiate the environmental scoping process with TxDOT. An environmental scoping document and risk assessment will be completed in coordination with TxDOT.
<u>YES</u>	<u>NO</u>	5. General Guidelines for Preparation of Environmental Documents <ol style="list-style-type: none"> <li>a. All technical reports will be submitted electronically to TxDOT through their FTP site.</li> <li>b. The draft administratively complete document will be submitted to TxDOT electronically through their FTP site.</li> <li>c. The administratively complete document will be prepared in accordance with the content and format of FHWA Technical Advisory T6640.8A and the TxDOT Administrative Code 43 TAC §2.44.</li> <li>d. The administratively complete document will be submitted to TxDOT electronically through their FTP site.</li> <li>e. Upon completion and approval of the administratively and technically complete document, the Engineer will provide one (1) hard copy to the Client. All copies to TxDOT will be digital.</li> <li>f. Exhibits in the environmental document shall be color copies and text shall be black and white.</li> </ol>

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

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SECTION 7 - ROADWAY DESIGN CONTROLS

(Function Code 160)

Services  
Provided By:  
ENGINEER COUNTY

- |   |   |
|---|---|
| <p><u>YES</u>      <u>N/A</u></p> <p><u>YES</u>      <u>N/A</u></p> | <p>1. Geometric Design</p> <p>a. Horizontal and Vertical Alignment (Preliminary based on office surveys)</p> <p>b. Schematic Layout</p> <p>(1) The location of interchanges, main lanes, grade separations, frontage roads and ramps.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(5) The tentative ROW limits.</p> <p>(a) Provide a roadway Design System (RDS) or (GEOPAK) computer tape of the preliminary earthwork to verify ROW requirements.</p> <p>(b) Provide a graphics file containing the approved schematic.</p> <p>(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.</p> <p>(7) The current and projected traffic volumes as provided by the TxDOT (20 year traffic projection, unless otherwise determined by the District Engineer).</p> <p>(8) The control of access lines if Interstate or designated under House Bill 179.</p> <p>(9) Direction of traffic flow on all roadways.</p> <p>(10) Location and width of median openings for highway without access control.</p> <p>(11) The geometric of speed change (acceleration, deceleration, climbing) lanes.</p> |
| <p><u>YES</u>      <u>N/A</u></p>                                   | <p>2. General Guidelines for Project Development</p> <p>a. Prior to preparing detailed plans for a proposed project, a preliminary schematic layout shall be prepared which indicates the general geometric features and location requirements peculiar to the project. An uncontrolled aerial mosaic will be provided for this use. Four copies of the schematic layout shall be submitted through the district to the Design Division for approval and subsequent coordination with the Federal Highway Administration (FHWA) where applicable. The layout shall be submitted for two-lane arterial highway projects on new locations and for all multi-lane highway projects. <b>No geometric design is to be performed until the COUNTY has given the engineer written approval of the preliminary schematic layout.</b></p> <p>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.</p> <p>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.</p> <p>d. Handling of traffic during construction shall be a consideration in the development of preliminary designs.</p>  |

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

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Services  
 Provided By:  
ENGINEER COUNTY

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

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

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Services  
 Provided By:  
ENGINEER COUNTY

- |           |            |  |
|-----------|------------|--|
| <u>NO</u> | <u>N/A</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)  |
| <u>NO</u> | <u>N/A</u> | d. Traffic Data for Pavement Design by STATE   |
| <u>NO</u> | <u>N/A</u> | e. Basic Design Criteria   |
| <u>NO</u> | <u>N/A</u> | f. Life Cycle Cost Analysis(es)  |
| <u>NO</u> | <u>N/A</u> | g. Cost Data   |
| <u>NO</u> | <u>N/A</u> | h. Pavement Material Properties  |
| <u>NO</u> | <u>N/A</u> | i. Rehabilitation Investigations   |
| <u>NO</u> | <u>N/A</u> | (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 "C"**  
**WORK SCHEDULE**  
**FM 676 (MILE 5) Project**  
**From SH 107 (Conway) to Taylor Road**

TASK AND DESCRIPTION	FIRM	2016												2017									
		JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
<b><u>WORK AUTHORIZATION NO. 1</u></b>																							
<b><u>SCHEMATIC</u></b>																							
<b>Road)</b>																							
Pre-design Meeting with TxDOT																							
Develop Alternatives & Matrix	L&G																						
Develop & Submit Schematic	L&G																						
TxDOT Review																							
Advertise & Conduct Public Meeting	L&G																						
Revise & Submit Final Schematic for FHWA approval	L&G																						
FHWA/TxDOT Review & Revisions	TxDOT																						
TxDOT Schematic Approval	TxDOT																						
FHWA Schematic Approval	FHWA																						
Process Technical Reports	TxDOT																						
Agency Coordination	TxDOT																						
Administratively Complete Document	TxDOT																						
Environmental Decision	TxDOT																						
Hydrological Map	L&G																						
Preliminary Compensable Utilities	L&G																						

L&G Engineering Tasks  
 TxDOT Tasks

**EXHIBIT D-1**  
ESTIMATED MAN-HOUR BREAKDOWN

FM 676 (MILE 5) PROJECT  
(from SH 107 (Conway) to Taylor Road)

	MANHOURS										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	Sub-Contract Amounts / ROW COST		
<b>CONTRACT RATE</b>	211.40	175.16	147.98	128.86	96.64	66.44	60.40				
<b>WORK AUTHORIZATION NO. 1</b>											
<b>PHASE I - EA, PUBLIC INVOLVEMENT, SCHEMATIC, HYDROLOGIC DESIGN</b>											
1 Environmental Document with TxDOT	120		463	300		118	204	1205			\$ 153,000.15
2 Public Involvement with stakeholders and 1 Public Meeting	52		77	77		45	10	261			\$ 36,000.21
3 Archeological and Historical Research (See Page 2 & 2 for Sub Cost)	11		14	8	6	11	1	51		\$ 28,176.80	\$ 6,823.68
4 Engineering Technical Support at Public Meetings with Layouts, etc.	28		47	45		47	11	178			\$ 22,500.21
5 Schematic for Roadway	151	151	59	490	618	439	46	1954			\$ 222,400.05
6 Hydrological Map for 2 Outfall Drain Ditches & Capacities	19	40	17	159	193	143	11	582			\$ 63,000.22
9 Office Surveys for Schematic	26	12	6	79	76	76	6	281			\$ 31,500.11
10 Preliminary Compensable Utility Identification on Schematic	44	40	20	150	199	182	32	667			\$ 72,000.12
11 Update Schematic based on comments as provided by TxDOT/FHWA	9	5		70	101	116	11	312			\$ 30,000.08
12 Engineering Technical Support at Public Hearing with Layouts, etc.	38	35	58	64		52	25	272			\$ 36,000.09
13 Public Involvement for 1 Public Hearing	56	14	75	50		55	8	258			\$ 36,000.21
<b>SUB-TOTAL</b>	<b>554</b>	<b>297</b>	<b>836</b>	<b>1492</b>	<b>1193</b>	<b>1284</b>	<b>364.643</b>	<b>6020.643</b>	<b>\$ 28,176.80</b>	<b>\$</b>	<b>709,225.13</b>
<b>Sub-Total Manhours Fee with Subconsultant Fee:</b>										<b>\$</b>	<b>737,401.93</b>
<b>* TOTAL PROJECT FEE:</b>										<b>\$</b>	<b>737,400.00</b>

\* Rounded Figure

## EXHIBIT D-1

COST BREAKDOWN										
FM 676: From Taylor Road to La Homa Road										
LABOR	PCR	Permit App/ Research Design	Fieldwork	Draft and Final Reports	Curation	Admin and Project Mgmt	Total	Unit	Unit Price	Cost
Principal						2	2	hr	\$ 216.00	\$ 432.00
Archeologist V/ Principal Investigator	6	2		6		4	18	hr	\$ 128.00	\$ 2,304.00
Archeologist III	8	4	32	28	4		76	hr	\$ 73.00	\$ 5,548.00
Archeologist II							0	hr	\$ 68.00	
Archeologist I			32	4	8		44	hr	\$ 58.00	\$ 2,552.00
Historical Architect/ Senior Historian	6			4		4	14	hr	\$ 133.00	\$ 1,862.00
Architectural Historian III		24	16	40			80	hr	\$ 104.00	\$ 8,320.00
Historian II	8			16			24	hr	\$ 82.00	\$ 1,968.00
GIS Specialist	4		2	10			16	hr	\$ 84.00	\$ 1,344.00
Administrative/ Document Production Supervisor						4	4	hr	\$ 88.00	\$ 352.00
Editor				6			6	hr	\$ 60.00	\$ 360.00
<b>TOTAL LABOR</b>										<b>\$ 25,042.00</b>
EXPENSES	PCR	Permit App/ Research Design	Fieldwork	Draft and Final Reports	Curation	Admin and Project Mgmt	Total	Unit	Unit Price	Cost
Copies, b/w	60	100	150	400	100	20	830	each	\$ 0.10	\$ 83.00
Copies, color	40	50	30	350	15	20	505	each	\$ 1.00	\$ 505.00
Mileage			850				850	mile	\$ 0.56	\$ 476.00
Lodging (NTE)			9				9	night	\$ 88.00	\$ 792.00
Taxes, lodging (15%)			9				9	night	\$ 13.20	\$ 118.80
Meals			10				10	day	\$ 51.00	\$ 510.00
Airfare			1				1	each	\$500.00	\$ 500.00
Car Rental			2				2	day	\$75.00	\$ 150.00
<b>TOTAL EXPENSES</b>										<b>\$ 3,134.80</b>
<b>TOTAL</b>										<b>\$ 28,176.80</b>