

EXHIBIT “F”
HIDALGO COUNTY
Professional Engineering Services
Agreement # C-25-0480-10-28

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of the Professional Engineering Services Agreement No. **C-25-0480-10-28**, incorporated herein by reference, for the **“Professional Engineering Services for Mile 2 West (SH 107- I-2)”** made by and between HIDALGO COUNTY, action herein by and through the Commissioner’s Court, hereinafter called the **“Owner,”** and L&G Consulting Engineers, Inc., hereinafter called **“Engineer”**.

PART 1. SCOPE OF WORK

The purpose of this Work Authorization is for the **Engineer** to provide Engineering Services required for Project Management, as approved by the COUNTY.

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

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

PART 2. ESTIMATED COST

The estimated cost for services under this Work Authorization is **\$1,339,000.00**. This amount is based upon the costs outlined in the **Attachment “B”** – *“Fee Proposal”* attached hereto and incorporated by reference.

PART 3. PAYMENT

Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with the **Professional Engineering Services Agreement No. C-25-0480-10-28** between the **Owner** and the **Engineer**.

PART 4. FUNDING

This Work Authorization No. 1 shall be funded through funding source:

Account No. 5-1360-431-00-121-294-0-710

Requisition Number _____ **(MUST BE INCLUDED AFTER CC APPROVAL)**

PART 5. PERIOD OF SERVICE

This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate **upon completion of the scopes of the Work Authorization, within the limits of Agreement No. C-25-0480-10-28, provided in this Work Authorization; or on (_____ DATE _____).** *If applicable:* Engineer shall conform to the

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

PART 6. RESPONSIBILITIES AND OBLIGATIONS

This Authorization does not waive the parties' responsibilities and obligations provided under the **Agreement No. C-25-0480-10-28**.

PART 7. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court, and hereby executed and effective as of the date indicated below.

EXECUTED as of the day and year first written above.

APPROVED BY COMMISSIONERS' COURT ON October 28, 2025.

Agenda Item No. 101244

Executive Office: _____

ENGINEER:
L&G CONSULTING ENGINEERS

COUNTY:
COUNTY OF HIDALGO

Jacinto Garza, P.E.

Hon. Richard F. Cortez, County Judge

ATTEST:

Arturo Guajardo, Jr., County Clerk

LIST OF ATTACHMENTS:

Attachment "A" – *Scope of Services to be provided by Engineer*

Attachment "B" – *Fee Proposal*

Attachment "C" – *Approved Work/Project Schedule (If applicable)*



ATTACHMENT A

**PROJECT SPECIFIC SCOPE OF SERVICES
TO BE PROVIDED BY ENGINEER**

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 Pct#1

CONTROL: CSJ: XXXXXXXX

PROJECT/DESCRIPTION: Mile 2 W Project

LENGTH: 9.7 Miles

HIGHWAY: _____

LIMITS: FROM: SH 107 to I-2 (US 83)

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.

LPA shall mean Local Public Agency Hidalgo Co.

SURVEYOR shall mean S2 Engineering PLLC.

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 3 - ROUTE AND DESIGN STUDIES

(Function Code 110)

Services
Provided By:
ENGINEER LPA

<u>NO</u>	<u>NO</u>	1. Route Location Studies
<u>NO</u>	<u>NO</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>NO</u>	<u>NO</u>	7. Preliminary Right-of-Way Requirements
<u>YES</u>	<u>NO</u>	8. Design Concept Conference
<u>YES</u>	<u>NO</u>	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)

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:		
<u>ENGINEER</u>	<u>LPA</u>	
		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.
<u>YES</u>	<u>NO</u>	a. Environmental Assessments
<u>N/A</u>	<u>N/A</u>	(1) An Environmental Assessment shall be prepared, anticipating a Categorical Exclusion.
<u>N/A</u>	<u>N/A</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.
<u>N/A</u>	<u>N/A</u>	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 LPA, shall be provided.
<u>N/A</u>	<u>NO</u>	c. A Notice of Availability (NOA) shall be published by the LPA 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
		The previously approved Species Analysis Form shall be updated as per the Memorandum of Understanding (MOU) with the Texas Parks and Wildlife Department (TPWD) and shall be prepared in accordance with the STATE'S Biological Guidelines.
<u>N/A</u>	<u>N/A</u>	c. Wetland Permits
		Two permit applications shall be prepared and all work efforts and deliverables shall be in accordance with the current TxDOT and the U.S. Army Corps of Engineers policies and procedures. Permits shall include all of the necessary maps and exhibits.

Services

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Provided By:
ENGINEER LPA

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|------------|-----------|--|
| <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
a. All technical reports will be submitted electronically to TxDOT through their FTP site.
b. The draft administratively complete document will be submitted to TxDOT electronically through their FTP site.
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.
d. The administratively complete document will be submitted to TxDOT electronically through their FTP site.
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.
f. Exhibits in the environmental document shall be color copies and text shall be black and white. |

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 6 - FIELD SURVEYING AND PHOTOGRAMMETRY

(Function Code 150)

Services
Provided By:
SURVEYOR LPA

DESIGN AND CONSTRUCTION SURVEYS:

PURPOSE:

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

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

DEFINITIONS:

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

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

1. Design Surveying

YES NO

- a. Primary Project Control – 3 to 5 miles spacing
Precision shall be 1 part in 20,000 or better, unless otherwise directed by the District Engineer.
- (1) Establish horizontal control points
 - (2) Establish vertical control points

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

YES NO

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

YES NO

- (6) Photogrammetric ground control
 - (a) Establish horizontal control
 - (b) Establish vertical control points
 - (c) Place and maintain control point targets

Services

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Provided By:
SURVEYOR LPA

YES NO

c. Other Design Surveying

- (1) **The limit of the Design surveys shall be 500-ft before and after the limits of the project as identified by the Project Engineer on the schematic. Establish horizontal and vertical control.** Set H&V Control at 1000-ft intervals along the project proposed right-of-way. Provide x, y, z for each H&V Control. ~~Provide an H&V Control along each outfall identified on the Hydrologic Map.~~ The H&V Control shall be #5 I.R. 2-ft in depth set in concrete. **The surveyor shall provide an H&V Control Book (a Sample shall be provided by the Engineer to the Surveyor).** The Surveyor will provide a 3-pt reference sketch with ties to the BMs for inclusion the existing H&V Control Book. Establish benchmark circuit throughout the project with a tolerance of 0.03'/ft per mile error vertically.
- (2) Complete topographic and cross section survey, data processing, and CADD mapping (2D & 3D) for the limits of the project.
- (3) Locate all visible utilities, data processing and CADD mapping (2D & 3D) including irrigation lines. ~~Follow sample provided by the Engineer.~~
- (4) Field locate cross culverts, driveway culverts, inverts, irrigation lines, within the project limits, data processing and CADD mapping (2D & 3D).
- (5) ~~Right of Entry, Right of Way Research, and Appraisal District Records are the responsibility of the Surveyor.~~
- (6) The Surveyor shall stake the existing/proposed centerline in the field as approved by Engineer before construction for the purpose of utility adjustments and project location.
- (7) Profile and cross section intersecting streets for ties into project (500-ft. beyond the proposed ROW per schematic and 20-ft wider than the existing ROW of intersecting street). ~~Reference missing voids as per CD provided by the Engineer.~~
- (8) Tie Horizontally and Vertically the existing storm drain system **if any and flowline elevations of the existing RCP on the East and West side of Mile 2 W for each driveway without RCP drain pipe will be identified in a separate list to the engineer and clearly identify the centerline station and width of driveway. The flowline elevation of the existing outfalls along Mile 2 W shall be provided.**
- (9) Tie to existing underground and overhead utilities (location, elevation and direction) **(2D & 3D)**
Horizontally – The surveyor shall call the 1-800 number for the utilities to be marked on the ground as well as any city water and sewer lines. He shall tie all visible utility crossings with name, address and Phone #'s of utility companies. The engineer will coordinate with the utility companies and jointly the Surveyor and the Engineer will identify which utilities were missed and need to be tied down.
Vertically—The engineer shall identify all utilities that are potential conflicts and that need to be tied vertically. The engineer will advise the surveyor in writing of the needed vertical ties and the surveyor will tie the lines vertically once the surveyor has coordinated the exposure and provide the information to the engineer.
- (10) ~~Cross section and profile all outfall channels identified on the Hydrologic Map for a distance of 200 ft beyond the proposed ROW upstream and downstream at 100 ft intervals. The SURVEYOR will provide a complete 2D/3D File including utilities of the outfalls identified.~~

NO NO

Services
 Provided By:

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SURVEYOR LPA

- | | | |
|------------|-----------|---|
| <u>YES</u> | <u>NO</u> | (11) Driveways and Turnouts
(a) Inventory commercial entrances, public roads and side streets separately.
(b) Obtain centerline station. (Width at ROW, PAV'T and existing radius.
(c) Inventory by type (dirt, caliche, gravel or paved). If paved, indicate condition in terms of no patches, has patches or has potholes.
(d) Obtain width at R.O.W. line.
(e) Obtain elevations at both edges of the driveway or turnout in line with the side drain.
(f) Provide a separate list for the driveways without an 18" RCP side drain pipe with the information above. |
| <u>NO</u> | <u>NO</u> | (12) ROW staking (Existing and Proposed @ 1,000 ft. stations PC's PT's and Angle points as per ROW Map) |
| <u>NO</u> | <u>NO</u> | (13) Soil core hole staking at bridge class structures. |
| <u>NO</u> | <u>NO</u> | (14) Determine changes in topography from voids and outdated maps due to development, erosion, etc. |
| <u>YES</u> | <u>NO</u> | (15) Outfalls (For 50-ft each side of Mile 2 W) Flowline elevation |
| <u>NO</u> | <u>NO</u> | (16) Measurement of hydraulic opening under existing bridges. |
| <u>YES</u> | <u>NO</u> | (17) Obtain elevations of manholes and valves of utilities |
| <u>YES</u> | <u>NO</u> | (18) Provide temporary signs, traffic control, flags, safety equipment, etc. |
| <u>YES</u> | <u>NO</u> | (19) Ties to existing bridges railroad rail elevations or culverts that may conflict with new construction. |
| <u>NO</u> | <u>NO</u> | (20) Bridge widening top of deck and/or top of cap elevations at the Profile Grade Line (PGL) and the edges of slab at bent locations. |
| <u>YES</u> | <u>NO</u> | (21) Inventory signs, mailboxes |
| <u>NO</u> | <u>NO</u> | (22) Locate wetlands. |
| <u>NO</u> | <u>NO</u> | (23) Locate existing right-of-ways. |

d. Construction Surveys:

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

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

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Provided By:
SURVEYOR LPA

- | | | |
|------------|-----------|--|
| <u>NO</u> | <u>NO</u> | <p>2. Photogrammetric Products</p> <p>a. Uncontrolled Photography</p> <ul style="list-style-type: none">(1) Contact Prints(2) Mosaics(3) Digital ortho plots <p>b. Mapping</p> <ul style="list-style-type: none">(1) Planimetric Maps(2) Contour Maps(3) Cross Sections(4) Profiles(5) Digital Terrain Models (DTM) |
| | | <p>3. <u>UTILITY SUBSURFACE INVESTIGATION:</u>
<u>Utility Quality Levels</u> are in cumulative order (least to greatest) as follows</p> |
| <u>NO</u> | <u>NO</u> | <p>3.1. Quality Level C - Existing Records: Utilities are plotted from review of available existing records that will be generated by the Engineer on the schematic and provided to the surveyor for his further creation of a Utility Map which will be turned in as a deliverable as part of this work order.</p> |
| <u>YES</u> | <u>NO</u> | <p>3.2. Quality Level B - Surface Visible Feature Survey: The Surveyor shall gather the field tied Utility Information and compare it to the existing records (if any) as provided by the Engineer and correlate with surveyed surface-visible features. The surveyor shall create a Utility Layout Map or plan layout 2D, showing the limits of the proposed project and limits of the work area required for this work authorization; including highway stations, limits within existing or proposed right of way. Correlate utility owner records with designating data and resolve discrepancies using professional judgment. A color-coded composite utility facility plan with utility owner names, quality levels, line sizes and subsurface utility locate (test hole) locations. The Layout Map will include all utilities that have been field tied – 2D Horizontal Utilities. This Layout will be provided to the Engineer and a meeting held with Engineer to identify which utilities will need to be tied down vertically. A note must be placed on the designate deliverable only that states "lines sizes are from best available records". All above ground appurtenance locations must be included in the deliverable to the Engineer. This information will be provided in the latest version of Micro Station or Geopak used by the State. The electronic file will be delivered on C.D. or DVD. A hard copy is required and must be signed, sealed, and dated by the Surveyor. Note: Determine and inform the Engineer of the approximate utility depths at critical locations. This depth indication is understood by the Engineer to be approximate only and is not intended to be used for preparing the construction plans.</p> |
| <u>NO</u> | <u>NO</u> | <p>3.3. <u>Subsurface Utility Locate (Test Hole) Service (Quality Level A). THE SURVEYOR SHALL ESTIMATE LOCATING VERTICALLY 25 UTILITES PER MILE OR AS IDENTIFIED BY THE ENGINEER.</u> Locate shall mean to obtain precise horizontal and vertical position, material type, condition, size and other data that may be obtainable about the utility facility and its surrounding environment through exposure by non-destructive excavation techniques that ensures the integrity of the utility facility. Subsurface Utility Locate (Test Hole) Services (Quality Level A) are inclusive of Quality Levels B and C. The Surveyor shall:</p> <p>3.3.1 Review the requested test hole locations that have been identified by the Engineer and Coordinate with utility owner inspectors as may be required by law or utility owner policy.</p> |

Services
Provided By:
SURVEYOR LPA

3. *Utility Subsurface (continued)*

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- 3.3.2 Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:
- Elevation of top and/or bottom of utility tied to the datum of the furnished plan.
 - Identify a minimum of two benchmarks utilized. Elevations shall be within an accuracy of 15mm (.591 inches) of utilized benchmarks.
 - Elevation of existing grade over utility at test hole location.
 - Horizontal location referenced to project coordinate datum.
 - Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.
 - Utility facility material(s).
 - Utility facility condition.
 - Coating/Wrapping information and condition.
 - Unusual circumstances or field conditions.
- 3.3.3 Excavate test holes in such a manner as to prevent any damage to wrappings, coatings, cathodic protection or other protective coverings and features. Water excavation can only be utilized with written approval from the appropriate State District Office.
- 3.3.4 Back fill all excavations with appropriate material, compact backfill by mechanical means, and restore pavement and surface material. The Engineer shall be responsible for the integrity of the backfill and surface restoration for a period of three years. Install a marker ribbon throughout the backfill.
- 3.3.5 Provide complete restoration of work site and landscape to equal or better condition than before excavation.
- 3.3.6 Plot utility location position information on the Utility Layout sheet and identify the vertical elevation and sealed by the responsible Surveyor. This information will be provided in the latest version of Micro Station or Geopak format used by the State. The electronic file will be delivered on C.D or DVD.

4. DELIVERABLES: (NOT SUBMITTED IN WA#1)

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

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

Services
 Provided By:
SURVEYOR LPA

4. *Deliverables (continued)*

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

<u>YES</u>	<u>NO</u>	4.8. Final mylar set of 11 inch by 17 inch Survey Control data sheets sign and seal by the RPLS per TxDOT guidelines.
<u>YES</u>	<u>NO</u>	4.9. A digital and/or hard copy of all computer printouts of horizontal and vertical conventional traverses, GPS analysis and results, data including property descriptions with field notes and plats, right of way maps, and survey control data sheets to include in the H&V Field Book Binder.
<u>NO</u>	<u>NO</u>	4.10. Survey reports in a format requested by the ENGINEER.
<u>YES</u>	<u>NO</u>	4.11. Items indicated under the Automation Requirements Section 6.

5. GENERAL REQUIREMENTS:

- 5.1. Design surveys and construction surveys shall be performed under the supervision of a Registered Professional Land Surveyor currently registered with the Texas Board of Professional Land Surveying.
- 5.2. Horizontal ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the STATE.
- 5.3. Reference may be made to standards of accuracy for horizontal control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.
- 5.4. Vertical ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the ENGINEER.
- 5.5. Reference may be made to standards of accuracy for vertical control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.
- 5.6. Side shots or short traverse procedures used to determine horizontal and vertical locations shall meet the following criteria:
 - Side shots or short traverses shall begin and end on horizontal and vertical ground control as described above.
 - Standards, procedures, and equipment used shall be such that horizontal locations relative to the control may be reported within the following limits:
 - Bridges and other roadway structures: less than 0.1 of one foot.
 - Utilities and improvements: less than 0.2 of one foot.
 - Cross-sections and profiles: less than 1 foot.
 - Bore holes: less than 3 feet.
 - Standards, procedures, and equipment used shall be such that vertical locations relative to the control may be reported within the following limits:
 - Bridges and other roadway structures: less than 0.02 of one foot.
 - Utilities and improvements: less than 0.1 of one foot.
 - Cross-sections and profiles: less than 0.2 of one foot.
 - Bore holes: less than 0.5 of one foot.

Services
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SURVEYOR LPA

5. AUTOMATION REQUIREMENTS:

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

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- 6.2 Electronically collected and processed field survey data files shall be fully compatible with the State's *CADD* systems without further modification or conversion. All files shall incorporate only those feature codes currently being used by the STATE.
- 6.3 Digital Terrain Models (DTM) shall be fully compatible with the STATE's GEOPAK system without further modification or conversion. All DTM files shall be fully edited and rectified to provide a complete digital terrain model with all necessary break lines.

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 7 - ROADWAY DESIGN CONTROLS

(Function Code 160)

Services

Provided By:

ENGINEER CITY/COUNTY

- | | | |
|------------|-----------|--|
| <u>YES</u> | <u>NO</u> | 1. Geometric Design |
| <u>YES</u> | <u>NO</u> | a. Horizontal and Vertical Alignment (For Internal Use Only) |
| | | b. Schematic Layout (For Internal Use Only) |
- (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.

Services

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Provided By:
ENGINEER CITY/COUNTY

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| <u>NO</u> | <u>NO</u> | <p>2. General Guidelines for Project Development (<i>continued</i>)</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> |
| <u>NO</u> | <u>NO</u> | <p>3. Exhibit for Airway/Highway Clearance Permits</p> |
| <u>YES</u> | <u>NO</u> | <p>4. Grading Design</p> <p>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.</p> <p>b. Typical Sections</p> <p>c. Design Cross Sections</p> <p>d. Determine Cut and Fill Quantities</p> <p>e. Slope Stability Analysis</p> <p>f. Embankment Foundation Stability Analysis</p> <p>g. Embankment Settlement Analysis</p> |
| <u>YES</u> | <u>NO</u> | <p>5. Pavement Design</p> <p>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.</p> |
| <u>YES</u> | <u>NO</u> | <p>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.</p> |
| <u>YES</u> | <u>NO</u> | <p>c. Embankment and Subgrade</p> <p>(1) Soil Core Holes (Show cost estimate with Function Code 110)</p> <p style="margin-left: 20px;">(a) Along center line</p> <p style="margin-left: 20px;">(b) Along center line of each roadway</p> <p style="margin-left: 40px;">The location and minimum number of soil core holes required for this project are as follows: (To be determined when schematic is being completed)</p> |
| <u>YES</u> | <u>NO</u> | |
| <u>YES</u> | <u>NO</u> | |

Services
Provided By:

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

ENGINEER CITY/COUNTY

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| <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><u>YES</u> <u>NO</u></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>5. Pavement Design (<i>continued</i>)</p> <p>c. Embankment and Subgrade (<i>continued</i>)</p> <p style="padding-left: 20px;">(2) Identify, interpret and summarize geologic features that affect engineering design (PI, Sulfate content, % of lime)</p> <p>d. Traffic Data for Pavement Design</p> <p style="padding-left: 20px;">e. Basic Design Criteria</p> <p style="padding-left: 20px;">f. Life Cycle Cost Analysis(es)</p> <p style="padding-left: 20px;">g. Cost Data</p> <p style="padding-left: 20px;">h. Pavement Material Properties</p> <p style="padding-left: 20px;">i. Rehabilitation Investigations</p> <p style="padding-left: 40px;">(1) Core Hole Survey (Show cost estimate with Function Code 110)</p> <p style="padding-left: 40px;">(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.</p> |
|--|---|

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Document and Information Exchange

Data, Plan Sheets, General Notes and/or Specifications provided to the LPA 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 LPA.

If required, the ENGINEER shall provide to the LPA, a CD that contains all the plan sheets for the project. The graphics tape shall be compatible with the LPA'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>
Environmental Document	Mercedes Office
PS&E Design	Mission Office
Surveys	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)



ATTACHMENT B

FEE PROPOSAL

EXHIBIT

PROJECT FEE SCHEDULE AND ESTIMATED MAN-HOUR BREAKDOWN

Mile 2 W Project
(From: SH 107 to I-2 (US 83))

		MANHOURS								TOTAL HOURS	Sub-Contract Amounts / ROW COST	TOTAL LINE ITEM COST	*ROUNDED TOTAL LINE ITEM COST
		Senior Project Manager	Senior Engineer	Senior Environmental Scientist /Specialist	Project Engineer	Senior Engineer Tech	Environmental Scientist /Specialist	CADD Operator / GISAnalyst	Admin / Clerical				
CONTRACT RATE		263.11	206.05	187.03	177.52	126.80	117.29	120.46	72.91				
WORK AUTHORIZATION NO. 1													
PHASE I - EA, PUBLIC INVOLVEMENT, SCHEMATIC DESIGN & SURVEYS													
Function Code	Description of Work												
	Environmental Document with TxDOT and Public Involvement	121		686			836		162	1805		\$ 270,004.75	\$ 270,000.00
	Engineering Technical Support for EA and Public Involvement	15	40		65	118			18	256		\$ 40,002.23	\$ 40,000.00
	Schematic and PS&E with intersection improvements	72	141		324	455			395	1387		\$ 192,006.90	\$ 192,000.00
	Traffic Data Request as per TxDOT Directive	29	55		126	177			154	541		\$ 75,002.20	\$ 75,000.00
	Geotechnical and Pavement Design for approval by TxDOT	62	118		273	383			334	1170		\$ 162,006.02	\$ 162,000.00
	Field Surveys for Design and Construction	133	255		591	828			721	2528		\$ 350,009.21	\$ 350,000.00
	Project Management	95	182		423	591			514	1805		\$ 250,002.05	\$ 250,000.00
SUB-TOTAL		527	791	686	1802	2552	836	0	2298	7687	\$ -	\$ 1,339,033.36	\$ 1,339,000.00

Subtotal Manhour Fee with Sub-Consultant Costs: \$ 1,339,033.36

*** Total Project Fee: \$ 1,339,000.00**

*Rounded Figure



ATTACHMENT C

APPROVED WORK/PROJECT SCHEDULE

WORK SCHEDULE
MILE 2 W
From SH 107 To IH-2
Length = 9.7 mile

TASK AND DESCRIPTION	FIRM	2025						2026						2027										
		JAN-JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN-SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN-DEC		
Funding Agreement w/ TxDOT																								
Request MTP/TIP Update for Additional TASA Funds	COUNTY																							
Execute AFA	TxDOT																							
Public Involvement & Environmental																								
Field Visit, Reports, and Documentation	L&G																							
Environmental Clearance (CE)	L&G																							
PS&E																								
PS&E	L&G																							
TxDOT Plan Set Approval	TxDOT																							
Construction Management																								
Receive Bids for Construction, Project Contract, Contract Management	COUNTY																							
Construction	COUNTY																		CONSTRUCTION (EST. 8 MO)					

Update: 8/18/2025

	L&G
	TxDOT
	Hidalgo County