

**HIDALGO COUNTY**  
**Professional Engineering Services**  
**Contract # C-15-402-01-19**  
**Work Authorization Form**

**WORK AUTHORIZATION NO.   1**

**THIS WORK AUTHORIZATION** is made pursuant to the terms and conditions of Section I.A. of the Agreement made by and between **HIDALGO COUNTY**, action herein by and through the **Commissioner's Court**, hereinafter called the "**Owner**," and, **South Texas Infrastructure Group, L.L.C.**, professional engineers of **Mission**, Texas, hereinafter called "**Engineer**".

**PART 1. SCOPE OF WORK**

The purpose of this Work Authorization is for the **Engineer** to provide professional engineering services required for the "Las Milpas Road Project."

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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 **\$16,000.00**. This amount is based upon the costs outlined in the Estimated **Cost Proposal** attached hereto as **EXHIBIT "D"**.

**PART 3. PAYMENT**

Compensation and payment to the **Engineer** for the services established under this Work Authorization shall be made in accordance with **Article 6.1** 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 project completion as indicated in the "Exhibit C-Preliminary 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 #2, Commissioner Eddie Cantu** as to content and detail of this **Work Authorization No. 1**.

**HIDALGO COUNTY PRECINCT #2, Commissioner Eddie Cantu** \_\_\_\_\_

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

**PART 8. ACCEPTANCE AND APPROVAL**

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on \_\_\_\_\_ as indicated below and effective as of \_\_\_ day of \_\_\_\_\_, 2016.

**THE ENGINEER:**  
**SOUTH TEXAS INFRASTRUCTURE**  
**GROUP, L.L.C.**

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

\_\_\_\_\_  
By: **Julio Cerda, P.E.**

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

**ATTEST:**

\_\_\_\_\_  
By: **Arturo Guajardo, Jr., County Clerk**

**LIST OF ATTACHMENTS**

- EXHIBIT "A" - Service to be Provided by the Owner
- EXHIBIT "B" - Services to be Provided by the Engineer
- EXHIBIT "C" - Work Schedule
- EXHIBIT "D" - Cost Proposal

**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: \_\_\_\_\_

PROJECT/DESCRIPTION: Las Milpas Restoration and Rehabilitation Project

LENGTH: .57 Miles

HIGHWAY: Las Milpas Rd.

LIMITS: FROM McColl to Jackson Rd

**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 South Texas Infrastructure Group, LLC.

STATE shall mean Texas Department of Transportation and/or City of \_\_\_\_\_.

COUNTY shall mean Hidalgo County.

CITY shall mean the City of \_\_\_\_\_.

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

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SECTION 6 - FIELD SURVEYING AND PHOTOGRAMMETRY

(Function Code 150)

Services  
Provided By:  
SURVEYOR CITY/COUNTY

**DESIGN AND CONSTRUCTION SURVEYS:**

**PURPOSE:**

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

**DEFINITIONS:**

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**

- 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

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:

- (1) Stake existing and/or proposed right-of-ways.
- (2) Stake existing and/or proposed baseline/centerline.
- (3) Stake proposed bridge structures.
- (4) Stake proposed drainage structures, such as manholes, culverts, etc.
- (5) Set grade stakes.
- (6) Recover and check existing control points.
- (7) Establish additional control points.
- (8) Check elevations and locations of structures.
- (9) Determine and resolve conflicts associated with survey data.

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

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Services  
Provided By:  
SURVEYOR CITY/COUNTY

GENERAL REQUIREMENTS:

- 3.1. Construction surveys shall be performed under the supervision of a Registered Professional Land Surveyor currently registered with the Texas Board of Professional Land Surveying.
- 3.2. 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.
- 3.3. 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.
- 3.4. 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.
- 3.5. 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.

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

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ADDITIONAL RESPONSIBILITIES

A. TRAFFIC CONTROL:

The SURVEYOR shall control traffic in and near surveying operations adequately to comply with provisions of the latest edition of the TxDOT Manual on Uniform Traffic Control Devices – Part VI and the latest edition of the Occupational Safety Manual both of which can be found on the TxDOT internet site.

In the event field crew personnel must divert traffic or close traveled lanes, a Traffic Control Plan based upon principles outlined in the latest edition of the TxDOT Manual on Uniform Traffic Control Devices – Part VI shall be prepared by the SURVEYOR and approved by the ENGINEER prior to commencement of field work. A copy of the approved plan shall be in the possession of field crew personnel on the job site at all times and shall be made available to the ENGINEER for inspection upon request.

B. INVOICING:

Payment requests shall include a SURVEYOR's invoice. With each payment request, the SURVEYOR shall submit a project status report which will, as a minimum, include the percentage of total work complete as of the date of the payment request and a description of current work activity. The percentage of total work complete shall not be based simply on the percentage of funds expended, but shall be based on the best judgment of the SURVEYOR as to the percentage of actual work complete.

C. EASEMENTS, LETTERS OF PERMISSION, ETC.

The SURVEYOR shall be responsible for delineating easements. The SURVEYOR will be responsible for securing the necessary legal instruments and obtaining all Right-of-Entries (ROEs).

D. MEETINGS:

The ENGINEER shall setup the necessary meetings with the SURVEYOR in order to assure all field information is provided on-time and products are delivered in accordance with TxDOT's specifications. SURVEYOR must attend all meetings involving data provided if requested by ENGINEER.

E. PROJECT MANAGER/SURVEYOR COMMUNICATION:

The SURVEYOR shall designate one Texas Registered Professional Land Surveyor (RPLS) to be responsible throughout the project for project surveying coordination and all communications, including billing, with the ENGINEER.

F. OFFICE LOCATION:

The SURVEYOR will perform the services to be provided under this agreement out of a local office and have a crew available to perform requested tasks within 24 hours of request. The coordinating SURVEYOR's Project Manager (RPLS) shall be accessible at all times and working from the local office.

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

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SECTION 7 - ROADWAY DESIGN CONTROLS  
(Function Code 160)

Services  
Provided By:  
ENGINEER CITY/COUNTY

YES

\_\_\_\_  
\_\_\_\_

1. Geometric Design

- a. Horizontal and Vertical Alignment (Preliminary based on office surveys)
- 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.

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

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Services  
 Provided By:  
ENGINEER CITY/COUNTY

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|---|---|--|
| — | — | 5. Pavement Design <i>(continued)</i>  |
| — | — | c. Embankment and Subgrade <i>(continued)</i>  |
| — | — | (2) Identify, interpret and summarize geologic features that affect engineering design<br>(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. |

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

**SECTION 8 - DRAINAGE**  
(Function Code 161)

Services  
Provided By:  
ENGINEER CITY/COUNTY

All hydraulic design shall be in accordance with the TxDOT's Hydraulic Manual, except where variances are permitted in writing by the COUNTY.

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|------------|-----|--|--|
|            |     |  | 1. Hydrologic Studies, Discharges  |
| ___        | ___ |  | a. Hydrologic Map showing drainage areas, contours and drainage Q's.                             |
| ___        | ___ |  | b. Drainage area maps showing existing conditions and proposed improvements.                     |
| ___        | ___ |  | c. Hydrologic data/discharge determination   |
|            |     |  | 2. Hydraulic Drainage Study and Documentation  |
|            |     |  | a. Hydraulic computations  |
| ___        | ___ |  | (1) Storm water detention available within the ROW (linear ft. along side drain ditch).          |
| ___        | ___ |  | (2) Storm water detention required outside the ROW (as per HCDD#1)                               |
| ___        | ___ |  | (3) Culverts   |
| ___        | ___ |  | (4) Bridge waterways   |
| ___        | ___ |  | (5) Channels   |
| ___        | ___ |  | (6) Storm sewers/inlets  |
| ___        | ___ |  | (7) Pump stations  |
| ___        | ___ |  | (8) Storm Water Management facilities  |
| ___        | ___ |  | (9) Other  |
|            |     |  | (a) Irrigation Canals/Siphons  |
| ___        | ___ |  | b. Hydraulic report(s)   |
| ___        | ___ |  | c. Federal Emergency Management Agency (FEMA) floodway requirements                              |
| ___        | ___ |  | d. Determine impact of proposed drainage plan on the following receiving stream(s)               |
|            |     |  | (1) Hidalgo County Drainage District Outfalls  |
|            |     |  | (2) All Irrigation District Outfalls impacted  |
|            |     |  | 3. Layout, Structural Design and Detailing of Drainage Features                                  |
|            |     |  | a. Culverts  |
| <u>YES</u> | ___ |  | (1) New culverts   |
| <u>YES</u> | ___ |  | (2) Culvert widening and/or lengthening  |
| <u>YES</u> | ___ |  | (3) Culvert replacements   |
|            |     |  | b. Storm sewers  |
| ___        | ___ |  | (1) New storm sewers   |
| ___        | ___ |  | (2) Modify existing storm sewers   |
| ___        | ___ |  | (3) Inlets   |
| ___        | ___ |  | (4) Manholes   |
| ___        | ___ |  | (5) Trunk lines  |
| ___        | ___ |  | c. Pump stations   |
| ___        | ___ |  | d. Subsurface drainage at retaining walls  |
| ___        | ___ |  | e. Outfall channel(s) within the ROW   |
| ___        | ___ |  | f. Outfall channel(s) outside the ROW  |
| ___        | ___ |  | g. Detention Pond(s) within the ROW  |
| ___        | ___ |  | h. Detention Pond(s) outside the ROW   |
| ___        | ___ |  | i. Summary of Quantities   |
| ___        | ___ |  | j. Storm Water Management facilities   |
| <u>YES</u> | ___ |  | 4. Storm Water Pollution Prevention Plan (SW3P)  |
| ___        | ___ |  | 5. Scour Evaluation - Waterway Structures only (to be completed by Bridge Engineer under FC 170. |

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

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SECTION 9 - SIGNING, MARKINGS AND SIGNALIZATION  
(Function Code 162)

Services  
Provided By:  
ENGINEER CITY/COUNTY

- YES    \_\_\_    1. Signing and Markings Layout
- a. Requirements (Separate Layout)
    - (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:
    - (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
- YES    \_\_\_    2. Summary of Small Signs Tabulation
- \_\_\_    \_\_\_    3. Summary of Large Signs Tabulation including all Guide Signs
- YES    \_\_\_    4. Sign Detail Sheets
- 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 "D"

South Texas Infrastructure Group, L.L.C.  
Contract Rate 2015

Labor/Staff Classification	Contract Rate
Principal	\$ 187.00
Project Manager	\$ 161.00
Project/Design Engineer	\$ 125.00
EIT	\$ 98.00
Engineer Tech	\$ 85.00
Junior Engineer Tech	\$ 80.00
CADD Operator	\$ 79.00
Admin/Clerical	\$ 50.00

Contract Rates include labor, overhead, and profit.

R.O.W. Surveying Services, L.L.C.  
(Sub-Contractor)  
Contract Rate 2015

Labor/Staff Classification	Contract Rate
Survey PM	\$ 124.00
RPLS	\$ 125.00
Survey Technician	\$ 82.00
4-Man Survey Crew	\$ 174.00
3-Man Survey Crew	\$ 155.00
2-Man Survey Crew	\$ 130.00
Admin/Clerical	\$ 50.00

Contract Rates include labor, overhead, and profit.

Other Direct Expenses:	Cost
8 1/2" X 11" copies	\$1.00/sheet
11" X 17" copies	\$1.50/sheet
11" X 17" Mylar	\$2.00/sheet

Updated 09/25/2015