EXHIBIT "F"

HIDALGO COUNTY
Professional Engineering Services
Agreement # C-22-0468-08-18

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of the Professional Engineering Services Agreement No. **C-22-0468-08-18**, incorporated herein by reference, for the ***"Professional Engineering Services" for "Trenton Roadway Improvements (From US 281(I-69C) to FM 907 (Alamo Rd.)" in Precinct 4"*** made by and between HIDALGO COUNTY, action herein by and through the Commissioner's Court, hereinafter called the "**Owner**," and **TEDSI Infrastructure Group, Inc**., hereinafter called "**Engineer**".

PART 1. SCOPE OF WORK
The purpose of this Work Authorization is for the **Engineer** to provide: ***Right of Way Map, Schematic, Environmental, Geotechnical and Utility Coordination services needed for the Trenton Roadway Improvements Project from (US 281 (I-69C)) to FM 907 (Alamo Rd.).***

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 **$ 1,556,458.00**.
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-22-0468-08-18** between the **Owner** and the **Engineer**.

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 the scopes of the Work Authorization, within the limits of Agreement No. C-22-0468-08-18, provided in this Work Authorization; or on***

(August 17, 2025). ***If applicable***: Engineer shall conform to the 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-22-0468-08-18**.

PART 7. ACKNOWLEDGEMENT AND CONFIRMATION
Acknowledgement and confirmation by **Hidalgo County Precinct 4, Commissioner Ellie Torres,** as to content and detail of this **Work Authorization No. 1.**

HIDALGO COUNTY PRECINCT No. 4

By: _____
Ellie Torres, Commissioner

PART 8. ACCEPTANCE AND APPROVAL

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

APPROVED BY COMMISSIONERS' COURT ON AUGUST 18, 2022.

Agenda Item No. 87016 **Executive Office: _____**

ENGINEER:
TEDSI Infrastructure Group, Inc.

_____
Jessie Salinas, CEO/President

COUNTY:
COUNTY OF HIDALGO

_____
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)*

EXHIBIT "A"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

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# 0921-02-442

PROJECT/DESCRIPTION: Project Development Phase I (Schematic, Environmental, Surveying, Hydrological Mapping, Geotechnical, Traffic Analysis, Utility Coordination)

LENGTH: 3.32 Miles

HIGHWAY: Trenton Road

LIMITS: From I-69C (US 281) to FM 907 (Alamo 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
_X_ 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 TEDSI Infrastructure Group.

COUNTY shall mean Hidalgo County.

LPA shall mean Hidalgo County.

EXHIBIT "A"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

PRELIMINARY PROJECT DEVELOPMENT

(Function Code 102)

ADVANCED PLANNING MPO COORDINATION:

The ENGINEER will perform any needed preliminary/ongoing project planning which will include:

1. Meetings, Coordination & Support for Project Development
    a. The Engineer will coordinate with the LPA's representatives at the MPO Technical Advisory Committee (TAC) and Policy Committee and serve in an advisory position to assist the LPA in obtaining funding for projects. The Engineer shall serve as representative for the LPA in coordination items. The Engineer shall coordinate with the LPA's staff on all Project related items.

2. Evaluate the LPA's Projects on Regional Planning Documents.

    a. The Engineer will work with the LPA and the MPO to evaluate the status of the LPA's projects in the regional planning documents.

    b. The Engineer will review the local Transportation Improvement Program (TIP) to ensure there are no delays to the letting of projects in an advanced state of project development. This includes coordination with project engineers to ensure estimates and schedules are accurate.

    c. The Engineer will review the Unified Transportation Program (UTP) to ensure the LPA's Projects are properly listed on the TxDOT UTP to ensure there are no delays to project development.

    d. The Engineer will review the Metropolitan Transportation Plan (MTP) to ensure the LPA's long range goals are properly listed on the MTP to advance opportunities for additional funding.

    e. The Engineer will review and assess potential opportunities to advance the construction of the LPA's projects.

    f. The Engineer will coordinate with the LPA to develop project mitigation plans in the event that there is a decrease in available funding for projects.

3. Capital Improvements Program (CIP) Development
    a. The Engineer will assist the LPA with the Development of the CIP as it relates to available opportunities to leverage funding from the MPO.

4. Audit and Periodically Update Regional Planning Documents
    a. The Engineer will review the local Transportation Improvement Program (TIP) to ensure there are no delays to the letting of projects in an advanced state of project development. This includes coordination with project engineers to ensure estimates and schedules are accurate.

    b. The Engineer will review the Unified Transportation Program (UTP) to ensure the LPA's Projects are properly listed on the TxDOT UTP to ensure there are no delays to project development.

c. The Engineer will review the Metropolitan Transportation Plan (MTP) to ensure the LPA's long range goals are properly listed on the MTP to advance opportunities for additional funding.

d. The Engineer will review and assess potential opportunities to advance the construction of the LPA's projects.

e. The Engineer will coordinate with the LPA to develop project mitigation plans if there is a decrease in regional funding for projects.

5. Prepare Exhibits / Preliminary Estimates
   a. The Engineer will assist the LPA with the preparation of preliminary project exhibits, maps, typical sections to allow for the development of preliminary project cost estimates for planning purposes.

6. Draft Correspondence
   a. The Engineer will assist the LPA with the preparation of drat correspondence to be used to advance the development of the LPA's priority projects.

7. Develop Project Agreements
   a. The Engineer will assist the LPA with the development of Interlocal Agreements and project agreements with TxDOT, for example Advanced Funding Agreements (AFA), to ensure the LPA's projects can be reviewed by TxDOT.

8. State and Federal Grants
   a. The Engineer will monitor opportunities for additional funding for the LPA's projects including non-conventional State and Federal funding that may become available.

PRELIMINARY PROJECT DEVELOPMENT:

The ENGINEER will perform any needed preliminary project development which will include:

1. Establish Preliminary Design Values
   a. The Engineer will work with the LPA to establish basic design concepts, project controls and a general scope for the Project.

2. Prepare/Evaluate Preliminary Route Locations on Uncontrolled Mapping*
   a. The Engineer will evaluate various alternatives (route locations, alignment shifts, geometry) for the Project.

3. Uncontrolled Mapping (w/Contours & GIS Data)
   a. The Engineer will investigate the existing routes and coordinate with the LPA on establishing the best-fit alignments and mapping proposed geometry for Projects. A Preliminary Location Exhibit will be developed.

4. Prepare Preliminary Hydrologic Map
   a. The Engineer will develop a Hydrologic Map for the Projects. The Hydrologic Maps will be based on LIDAR and GIS information.

5. Investigate Preliminary ROW Requirements

   a. The Engineer will research and identify affected property owners on the Projects alignment and proposed ROW utilizing the latest appraisal district file information from the Hidalgo County Appraisal District and subdivision plat information from Carson Maps.

6. Prepare Preliminary Cost Estimates
   a. The Engineer will calculate preliminary construction cost estimates for the location and geometry of the Projects.

7. Preliminary Environmental Analysis (for Fatal Flaws)
   a. The Engineer will perform Preliminary Environmental Constraint Mapping to determine if any fatal flaws exist along the proposed alignment.

8. Prepare a Project Fact Sheet for All Anticipated Costs
   a. The Engineer will produce a Project Fact Sheet providing summaries of all pertinent items in the scope of services (as required) and providing estimated local costs vs. total project costs for the Projects.

9. Meetings, Coordination & Support for Project Development
   a. The Engineer shall provide coordination services and shall assist in meetings and workshops with TxDOT, Hidalgo County, Hidalgo County Drainage District No. 1, any Hidalgo County Irrigation Districts, and all other affected parties. The Engineer shall serve as representative for the LPA in coordination items. The Engineer shall coordinate with the LPA's staff on all Project related items.

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

ROUTE AND DESIGN STUDIES
(Function Code 110)

ROUTE AND DESIGN STUDIES:
The ENGINEER will perform any of the following tasks needed for the route and design studies:

1. Analyze Level of Service for Proposed Improvements

2. Provide Traffic Evaluations and Projections

3. Traffic Signal Warrant Studies

4. Develop Roadway Design Criteria

5. Prepare the Design Schematic
   a. Horizontal and Vertical Alignment (Preliminary based on office surveys)
   b. Schematic Layout
      i. Identify the location of interchanges, main lanes, grade separations, frontage roads and ramps, if applicable.
      ii. Develop vertical and horizontal alignment of main lanes, ramps and crossroads at proposed interchanges or grade separations, if applicable. 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.

iii. 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.

iv. Provide a complete explanation of the sequence and methods of stage construction, if proposed, including the initial and ultimate proposed treatment of crossovers and ramps.

v. Identify the tentative ROW limits
    1. Provide a roadway Design System (RDS) or (GEOPAK) computer tape of the preliminary earthwork to verify ROW requirements.
    2. Provide a graphics file containing the approved schematic.

vi. Provide the geometric configuration (pavement cross slopes, lane and shoulder widths, slope rates for fills and cuts) of the typical sections of the proposed highway main lanes, ramps, frontage roads, and crossroads.

vii. Identify the current and projected traffic volumes as provided by TxDOT (if On-System roadway) or by ENGINEER (if Off-System roadway) based on a 20 year traffic projection.

viii. Label the control of access lines if Interstate or designated under House Bill 179.

ix. Label the direction of traffic flow on all roadways.

x. Identify the location and width of any proposed median openings for highways without access control.

xi. Identify the geometrics of any speed change lanes (acceleration, deceleration, climbing, etc.…).

6. Coordinate and Attend a Project Design Concept Conference

7. 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 LPA 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 and in the schematic checklist provided by the STATE.
    d. Handling of traffic during construction shall be a consideration in the development of preliminary designs.
    e. Upon approval of the schematic layout by Design Division (FHWA on Federal-aid projects), it shall be the basis for an exhibit at any required public hearing prior to final development of the project. If there are any changes to the schematic after the Design Division and FHWA approval and before the public hearing, four copies of the revised schematic, as displayed at the hearing, shall be submitted either prior to or accompanying the public hearing data. If there are no changes in the schematic as displayed at the hearing, only photographs of the schematic and other displays shall be submitted with the public hearing data.

f. For all freeway construction projects, these schematics shall show the location and text of the proposed main lane guide signs. A schematic layout shall be submitted through the district to the Traffic Operations Division, Traffic Safety Section for approval and subsequent coordination with the FHWA. All signing shall be in conformance with the Texas MUTCD.
g. On complex projects, informal contact through the district with the Design Division and FHWA personnel is encouraged with regard to development of preliminary design prior to official schematic submission.
h. The engineer shall furnish a project tape that is compatible with the STATE's computer system, a project listing, and a cross section plot showing the original design sections containing the earthwork input and original cross sections for the project. **Accuracy of the earthwork design is of utmost importance since it is the basis for contractor payments and construction staking.**

8. Traffic Analysis and Projections
    a. If the project is Off-System, the ENGINEER will provide traffic analysis and projection data for the project as previously provided by TxDOT's Transportation Planning and Programming division. The analysis will follow the STATE's SOP and the data will be approved by the STATE.

9. Final Hydrologic Map & Report
    a. The ENGINEER will provide a final hydrologic map to be submitted with the Schematic. This map will be considered part of the Schematic Submittal.
    b. A H&H Report will be submitted along with the Hydrologic Map. The report will follow the guidelines set forth in TxDOT's Hydraulic Manual.

GEOTECHNICAL ENGINEERING

(Function Code 110)

A. Geotechnical Explorations and Laboratory Testing.

The ENGINEER will perform the following drilling and testing activities:

- LOCATION 1 - Trenton Rd - Frontage Rd to Veterans Blvd. (8 Proposed 10ft. Boring)
- LOCATION 2 - Trenton Rd – Veterans Blvd. to Raul Longoria (14 Proposed 10ft. Boring) (2 proposed 50 ft. Borings; Bridge)
- LOCATION 3 - Trenton Rd - Raul Longoria Rd. to Cesar Chavez Rd.(14 Proposed 10ft. Boring) (2 proposed 50 ft. Borings; Bridge)
- LOCATION 4 - Trenton Rd - Cesar Chavez Rd. to FM 907 (8 Proposed 10ft. Boring)
- Texas Cone Penetration (Tex-132-E)
- Road Repair/Patch Aspaht Cold Mix
- Mobilization / Demobilization of Drilling Rig & Support Trailer
- Logging
- Utility Locations
- Staking Boring
- Traffic Control
- Sample Preparation (Tex-101-E)
- Moisture Content (Tex-103-E)
- Atterburg Limits (Tex-104, 105 & 106-E)

- Percent Passing No. 200 Sieve (Tex-111-E)
- Sulfate Content in Soils (Tex-145-E)
- Texas Triaxial Compression (Tex 117 E, Part II)
- Consolidated Undrained Triaxial Test
- Unconsolidated Undrained Triaxial Test
- Unconfined Compression Test
- Consolidation Tests
- Unit Weight Tests
- Soil-Lime Testing (Tex-121-E)

B. Geotechnical Engineering Analysis.

The ENGINEER will perform the following tasks and analyses:

- Pavement Design - HMAC for Locations 1, 2, 3, 4,
- Drilled Shaft Foundation Design and Analysis
- Laying out Needed Drilling Scheme & Plan View of Boring Logs
- Structural Evaluation of Borings (Soil Shear Strength Computations)
- Creation of Boring Logs with TCP and Soil Index Testing Data (69 borings Total ~ Estimated at 0.50 hr. each)
- Pavement Cycle Analyses
- Geotechnical Report, Soil Geology, Site Soils, Analyses, Recs.
- Coordination and Meetings
- Pavement Cycle Analyses

SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT

(Function Code 120)

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. An Environmental Assessment shall be prepared anticipating one of the following levels of clearance:
        i. A Categorical Exclusion
        ii. A Finding of No Significant Impact
        iii. A Draft Environmental Impact Statement
    b. If it is determined that an Environmental Assessment is not sufficient, an Environmental Impact Statement shall be prepared
        i. 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.
        ii. 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.)
    a. A public involvement meeting(s)/hearing(s) shall be scheduled, coordinated, and conducted.*

b. Technical assistance, meeting(s)/hearing(s) preparation, maintenance of contracts lists, minutes of meeting(s), exhibit preparation, and other tasks outlined by the LPA, shall be provided.

3. Cultural Resources (Formal consultation with the State Historic Preservation Office (SHPO) and the Texas Historical Commission (THC) will be conducted by the LPA.)
    a. Historic Structure Studies
        i. A records search 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.
    b. Archeological Studies
        i. Files searches shall be conducted to determine if known archeological sites are present; to identify whether these sites have been listed or determined eligible for the National Register of Historic Places or have been designated State Archeological Landmarks; and to identify the need (if any) to perform additional archeological investigations.
        ii. Archeological reconnaissance will be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.
        iii. Archeological survey shall be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.

4. Noise and Air Quality Analyses
    a. Noise Analysis
        i. 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 or a summary of the noise analysis shall be provided as a Technical Report and results included in the administratively complete document.
    b. Air Quality Analysis
        i. An air quality analysis shall be prepared in accordance with the STATE'S Air Quality Guidelines. The air quality analysis or a summary of the air quality shall be provided as a Technical Report and results included in the administratively complete document for the project.

5. Hazardous Materials
    a. The ENGINEER 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).

6. General Guidelines for Preparation of Environmental Documents
    a. The Biological Impact Evaluation Report will be prepared which will include water resources, threatened and endangered species, etc. and submitted electronically to TxDOT.
    b. All cultural resource reports (i.e. Archeological and Historical Project Coordination Requests (PCRs), background and reconnaissance surveys) will be submitted electronically to TxDOT.
    c. The draft administratively complete document will be submitted to TxDOT electronically through their FTP site.

d. 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.
e. The administratively complete document will be submitted to TxDOT electronically through their FTP site.
f. Upon completion and approval of the administratively and technically complete document, the Engineer will provide one (1) hard copy to the Client, one (1) hardcopy to the district, and (3) hardcopies to TxDOT ENV.
g. Exhibits in the environmental document shall be color copies and text shall be black and white.

UTILITY ENGINEERING INVESTIGATION (CURRENTLY SUBSURFACE UTILITY ENGINEERING), UTILITY ADJUSTMENT COORDINATION, AND UTILITY ENGINEERING ("UTILITY-RELATED SERVICES," COLLECTIVELY)

(Function Code 130, 145, 160)

GENERAL

A. Engineer Designees. Engineer is responsible for designating and providing the services of the following individuals or entities:

1. Utility Coordinator is the individual or entity performing Utility- related Services that are not required to be performed by a licensed engineer under Texas law.

2. Utility Engineer is the individual or entity performing Utility-related Services that are required to be performed by a licensed engineer under Texas law.

B. As used below, "ensure" means to make certain that something has happened or will happen and includes an obligation to deploy the appropriate level of engineering or other technical expertise, consistent with the complexity, cost, and level of risk associated with a task. Ensure does not require or guarantee the completion of any task assigned to a separate entity under any other agreement.

C. Personal Protective Equipment (PPE). The Engineer shall, and shall require its subcontractors to, (1) provide personal protective equipment (PPE) to their personnel, (2) provide business vehicles for their personnel, and (3) require their personnel to use PPE and drive only business vehicles while performing work on or near roadways. The PPE must meet all (1) current standards set by the Occupational Safety and Health Administration (OSHA) and (2) TxDOT requirements (e.g., safety glasses, Type 3 (TY 3) pants for night work). Each business vehicle must be clearly marked with the Engineer's business name, or the name of the appropriate subcontractor, such that the name can be identified from a distance.

EXHIBIT "A"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

FUNCTION CODE 130 (130) – RIGHT-OF-WAY DATA

A. Utility Adjustment Coordination

Utility Adjustment Coordination shall include utility coordination meetings with individual utility companies, communication and coordination with utilities, and preparation of utility agreement assemblies including utility agreements, joint use agreements, and advanced funding agreements.

UTILITY COORDINATION

Engineer and Associates shall perform utility coordination and liaison activities with involved utility owners, their consultants, and the State to achieve timely project notifications, formal coordination meetings, conflict analysis and resolution. Engineer and Associates shall act as the "Responsible Party" as indicated in the State's – Utility Cooperative Management Process (See the State's ROW Utility Manual, chapter 2).

a. Engineer and Associates shall coordinate all activities with the State, or their designee, to facilitate the orderly progress and timely completion of the State design phase. Engineer and Associates shall be responsible for the following:

i. Work Plan. Coordinate a work plan including a list of the proposed meetings and coordination activities, and related tasks to be performed, a schedule and an estimate. The work plan must satisfy the requirements of the project and must be approved by the State prior to commencing work.

ii. Orientation. Prepare and present, in collaboration with State staff, instruction and orientation sessions as required by the State. The instruction shall introduce the subsurface utility engineering process, demonstrate the technology, and facilitate the preparation of work orders, billings, and contract related documentation.

iii. Initial Project Meeting. Attend an initial meeting and an on-site inspection (when appropriate) to ensure familiarity with existing conditions, project requirements and prepare a written report of the meeting.

iv. External Communications. Engineer and Associates shall coordinate all activities with the State and its consultants or other contractors or representatives, as authorized by the State. Also, Engineer and Associates shall provide the State copies of diaries, correspondence and other documentation of work- related communications between Engineer and Associates, utility owners and other outside entities when requested by the State.

v. Permits and rights of entry. Obtain all necessary permits from city, county, municipality, railroad or other jurisdiction to allow the Engineer to work within existing streets, roads or private property for additional designating and/or subsurface utility locating.

vi. Progress Meetings. Engineer and Associates shall implement a schedule of periodic meetings with each utility company and owner or owner's representatives for coordination purposes. Such meetings shall commence as early as possible in the design process and shall continue until completion of the project. Engineer and Associates shall notify the State at least two (2) business days in advance of each meeting to allow the State the opportunity to participate in the meeting. Engineer and Associates shall provide and produce meeting minutes of all meetings with said utility companies, owners or owners' representatives within seven (7) business days. The frequency of such meetings shall be appropriate to the matters under discussion with each utility owner.

b. As required Engineer and Associates shall coordinate with the local utilities committees to present a footprint of the State's projects with represented utility companies and owners. Engineer and Associates shall also coordinate with any other utility committees which may include county, city, or other officials, if needed.

c. Engineer and Associates shall provide initial project notification letters to all affected utility companies, owners, and other concerned parties, if needed.

d. Engineer and Associates shall provide the State and all affected utility companies and owners a Utility Contact List for each project with all information such as: (a) Owner's Name; (b) Contact Person; (c) Telephone Numbers; (d) Emergency Contact Number; (e) E-mail addresses; (f) as well as all pertinent information concerning their respective affected utilities and facilities, including but not limited to: size, number of poles, material, and other information which readily identifies the utilities companies' facilities.

e. Engineer and Associates shall advise utility companies and owners of the general characteristics of the Project and provide an illustration of the project footprint for mark-up of the utility facility locations that occupy the project area.

2. UTILITY AGREEMENTS FOR UTILITY ADJUSTMENTS

Engineer and Associates shall coordinate with utilities that conflict with highway construction or the "Utility Accommodation Rules" (UAR), and make the utility company aware of these conflicts. Engineer and Associates shall assist the utility companies in the preparation of required agreements associated with the funding of adjustments and the occupation of State right of way.

a. Utility Agreement Assemblies: A packaged agreement consisting of a Utility Joint Use Acknowledgement, Standard Utility Agreements, Plans on 11x17 sheets, Statement of contract work form, Affidavit form and copy of recorded easement, schedule of work and various attachments as detailed in the UAR and the State's Utility Manual.

i. Utility Agreements: If a utility is located within an easement, the utility company may have a compensable interest. The utility company must

furnish a copy of their easement to Engineer and Associates. Engineer and Associates shall determine whether or not a compensable interest exists and the owner's degree of eligibility. Engineer and Associates shall assist the utility company with adjustment plans and cost estimate for these adjustments. Engineer and Associates shall review plans to ensure compliance with UAR and ensure the proposal will not conflict with highway construction. Engineer and Associates shall submit a copy of the easement, plans, and estimate to the State by letter recommending approval (6 copies of each). The utility should be reimbursed all cost incurred within their easement limits for replacement in kind.

ii. Utility Acknowledgement: For this project, all Non- Reimbursable Utility Adjustments shall be submitted with the form 1082. The term permit refers to form 1082. Engineer and Associates shall furnish the appropriate form to the utility company and assist them with adjustment plan preparation. The utility company should submit Form 1082 and adjustment plans to Engineer and Associates for review. Engineer and Associates shall review plans to ensure compliance with UAR and ensure the proposal will not conflict with highway construction. Engineer and Associates shall submit Form 1082 to the State by letter recommending approval (six copies).

iii. Escrow Agreements: If it is determined that the utility will be adjusted as part of the highway contract; the State's project manager must be notified immediately. Engineer and Associates shall determine what funding amount is required based upon the applicable betterment or eligibility ratio. The State shall be notified immediately of the need for an Advanced Funding Agreement (AFA) by Engineer and Associates. The Engineer shall coordinate the development of the required AFA with the utility owner and the State in accordance with established procedures of the State's Contracts Services Section. Procure or verify all AFA payments have been submitted to the State.

iv. Federal Utility Procedures: Where there is Federal-Aid in the right of way, inclusive of utility costs, the Federal Utility Procedures (FUP) Approval is Federal Highway Administration (FHWA) authorization for TxDOT to assume total oversight of the utility adjustment process. Necessary information for the FUP approval shall include the utility name(s), location(s) of existing facilities by station number and estimated cost of adjustment(s) by utility.

v. State Utility Procedures.

vi. Local Utility Procedures.

b. Engineer and Associates shall submit the required number of executed copies of the Utility Agreement assemblies, which include the appropriate Forms as detailed in the UAR and supplied by the State, a copy of the recorded easement Deed, plans, and estimate to the State by letter recommending approval (2 original signature and 2 copies of each). The utility should be reimbursed eligible costs incurred

within their easement limits for replacement in kind." The transmittal should also provide a description of the work being done as well as the estimated cost and schedule of work. Engineer and Associates shall not perform engineering of relocation plans relative to a particular Utility Agreement under this supplemental as this is a cost of Right of Way that is subsidiary to the specific Utility Agreement.

c. Engineer and Associates shall be solely responsible for determining which utilities will be installed by "Agreement". Engineer and Associates shall Process all ROW-U-JUAs, Utility Agreements and determine necessity of any Escrow Agreements and forward to the State for final approval.

d. The Engineer with the assistance of Engineer and Associates shall be responsible for the timely coordination, review and submittal of all documentation to be included in all the Utility Agreements with such documents conforming to the requirements of 23 C.F.R. Section 645A. The Engineer with the assistance of Engineer and Associates shall assist in the preparation, compilation, gathering, and collection of all required and supporting documents to be included with the Utility Agreements.

e. For each Utility, the records for all utility owners' costs shall be in accordance with the requirements of 23 C.F.R. Section 645A, in a format that is compatible with the estimate attached to the Utility Adjustment Agreement and sufficient detail for analysis. The totals for labor, overhead, construction costs, travel, transportation, equipment, materials, supplies and other services shall be shown in such a manner as to permit comparison with the approved estimate.

f. The Engineer shall maintain a complete set of records for all Utility Adjustment Costs for each Utility for a period sufficient to complete all final payments to the utility companies or owners

FUNCTION CODE 145 (145,164) – MANAGING CONTRACTED/DONATED PE:

A. Project Management and Administration

The Engineer, in association with the State's Project Manager shall be responsible for directing and coordinating all activities associated with the project to comply with State policies and procedures, and to deliver that work on time.

1. PROJECT COORDINATION

The Engineer shall coordinate all subconsultant activity to include quality and consistency of deliverables and administration of the invoices and monthly progress reports. The Engineer shall coordinate with necessary local entities.

2. PROJECT MANAGEMENT

The Engineer shall manage activities including preparing correspondence, invoicing and progress reports; and reviewing schedules.

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

The Engineer shall:

a. Prepare monthly written progress reports for each project.

b. Develop and maintain a detailed project schedule to track project conformance to Exhibit C, Work Schedule, for each work authorization. The schedule submittals shall be hard copy and electronic format.

c. Meet on a scheduled basis with the State and Schematic Design Consultant to review project progress.

d. Prepare, distribute, and file both written and electronic correspondence.

e. Prepare and distribute meeting minutes.

f. Document phone calls and conference calls as required during the project to coordinate the work for various team members.

FUNCTION CODE 160 (163) – ROADWAY DESIGN

A. Utility Engineering Investigation (currently Subsurface Utility Engineering)

Utility Engineering Investigation (currently Subsurface Utility Engineering) include utility investigations subsurface and above ground prepared in accordance with AASHTO standards [ASCE C-1 38-02 (http://www.fhwa.dot.gov/programadmin/asce.cfm)] and Utility Quality Levels.

1. UTILITY QUALITY LEVELS

Utility Quality Levels are defined in cumulative order (least to greatest) as follows:

a. Quality Level D - Existing Records: Utilities are plotted from review of available existing records.

b. Quality Level C - Surface Visible Feature Survey: Quality level "D" information from existing records is correlated with surveyed surface-visible features. Includes Quality Level D information. If there are variances in the designated work area of Level D, a new schematic or plan layout will be necessary to identify the limits of the proposed project and the limits of the work area required for the work authorization; including highway stations, limits within existing or proposed right of way, additional areas outside the proposed right of way, and distances or areas to be included along existing intersecting roadways.

c. Quality Level B - Designate: Two-dimensional horizontal mapping. This information is obtained through the application and interpretation of appropriate non-destructive surface geophysical methods. Utility indications are referenced to established survey control. Incorporates quality levels C and D information to

produce Quality Level B. If there are variances in the designated work area of Level D, a new schematic or plan layout will be necessary to identify the limits of the proposed project and the limits of the work area required for the work authorization; including highway stations, limits within existing or proposed right of way, additional areas outside the proposed right of way, and distances or areas to be included along existing intersecting roadways.

d. Quality Level A - Locate (Test Hole): Three-dimensional mapping and other characterization data. This information is obtained through exposing utility facilities through test holes and measuring and recording (to appropriate survey control) utility/environment data.

2. DESIGNATE (QUALITY LEVEL B)

Designate means to indicate the horizontal location of underground utilities by the application and interpretation of appropriate non- destructive surface geophysical techniques and reference to established survey control.

The Engineer shall:

a. As requested by the State compile "As Built" information from plans, plats and other location data as provided by the utility owners.

b. Coordinate with utility owner when utility owner's policy is to designate their own facilities at no cost for preliminary survey purposes. The Engineer shall examine utility owner's work to ensure accuracy and completeness.

c. Designate, record, and mark the horizontal location of the existing utility facilities and their service laterals to existing buildings using non-destructive surface geophysical techniques. No storm sewer, culverts or irrigation facilities are to be designated unless authorized by the State. The general layout of overhead utilities will be mapped, but a full inventory of overhead lines and pole attachments is outside this scope. A non-water base paint, utilizing the APWA color code scheme, must be used on all surface markings of underground utilities.

d. If internally accessible (e.g., via a cleanout or drain inlet) nonconductive lines can often be traced out with a fish tape or sonde. Blocked sanitary lines may therefore not be designable. Under ideal circumstances nonconductive buried lines may also be investigated with Ground Penetrating Radar (GPR). Soil conditions in Texas are however generally not suitable for GPR. Engineer has had success using GPR for SUE work, but non-conductive features can remain undetected.

e. 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, shall be prepared, and delivered to the State. It is understood by both the Engineer and the State that the line sizes of designated utility facilities detailed on the deliverable are from the best available records and that an actual line size is normally determined from a test hole vacuum excavation. 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 State. This information shall be provided in the latest version of Micro Station or Geopak used by the State. The electronic file will be delivered on CD or DVD, as required by the State. A hard copy is required and must be signed, sealed, and dated by the Engineer. When requested by the State, the designated utility information must be over laid on the State's design plans.

f. Determine and inform the State of the approximate utility depths at critical locations as determined by the State. This depth indication is understood by both the Engineer and the State to be approximate only and is not intended to be used preparing the right of way and construction plans.

g. Provide a monthly summary of work completed and in process with adequate detail to verify compliance with agreed work schedule.

h. Close-out permits as required.

i. Clearly identify all utilities that were discovered from quality levels C and D investigation but cannot be depicted in quality level B standards. These utilities must have a unique line style and symbology in the designate (Quality Level B) deliverable.

j. Comply with all applicable State policy and procedural manuals.

3. SUBSURFACE UTILIT LOCATE (TEST HOLE) SERVICE (QUALITY LEVEL A)

Locate means 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. It is anticipated that approximately 13 test holes will be required of varying depth. Test holes can be provided on a unit cots basis depending on depth.

The Engineer shall:

a. Review requested test hole locations and advise the State in the development of an appropriate locate (test hole) work plan relative to the existing utility infrastructure and proposed highway design elements.

b. Coordinate with utility owner inspectors as may be required by law or utility owner policy.

c. Neatly cut and remove existing pavement material, such that the cut not to exceed approximately 1 square ft unless unusual circumstances exist.

d. Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:

i. Elevation of top and/or bottom of utility tied to the datum of the furnished plan.

ii. Identify a minimum of two benchmarks utilized. Elevations shall be within an accuracy of 15mm (.591 inches) of utilized benchmarks.

iii. Elevation of existing grade over utility at test hole location.

iv. Horizontal location referenced to project coordinate datum.

v. Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.

vi. Utility facility material(s).

vii. Utility facility condition.

viii. Pavement thickness and type.

ix. Coating/Wrapping information and condition.

x. Unusual circumstances or field conditions.

e. Excavate test holes in such a manner as to prevent any damage to wrappings, coatings, cathodic protection or other protective coverings and features. Engineer does not take possession of excavated material. Engineer does not transport hazardous materials (should they be encountered) from the job site

f. Back fill all excavations with appropriate material (typically excavated spoils), compact backfill by mechanical means, and restore pavement and surface material. If specialist back fill is required (eg: flowable fill). This will be considered an additional cost

g. Furnish and install a permanent above ground marker (as specified by the State) directly above center line of the utility facility.

h. Provide complete restoration of work site and landscape to equal or better condition than before excavation. If a work site and landscape is not appropriately restored, the Engineer shall return to correct the condition at no extra charge to the State.

i. Plot utility location position information to scale and provide a comprehensive utility plan sign and sealed by the responsible Engineer. This information shall 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. When requested by the State, the Locate information must be over laid on the State's design plans.

j. Return plans, profiles, and test hole data sheets to the State. If requested, conduct a review of the findings with the State.

k. Close-out permits as required.

SUE Limitations

Above ground geophysical techniques cannot guarantee to find all buried utility lines. Engineer will perform subsurface utility engineering in accordance with ASCE 38/02 Standard Guidelines for the Collection and Depiction of Subsurface Utility Data. Engineer will exercise all reasonable and customary care in the performance of SUE and Survey services, realizing efficient design and ultimately the safety of all personnel is a prime consideration in the detection and mapping of subsurface utility features which may be in conflict with proposed construction. However, a possibility exists that some utilities may not be detected and/or mapped using standard SUE procedures previously described. While uncommon, utilities possessing these characteristics can be missed while using the standard SUE procedures: utilities buried excessively deep, beyond detection limits of standard locating equipment, abandoned utilities, utilities with no apparent surface features and no records available, non-conductive utilities, and utilities buried in soil unsuitable for geophysical detection. Contractor shall call One Call before excavating as required by Texas Law.

B. Utility Engineering

Utility Engineering includes the identification of utility conflicts, coordination, compliance with the UAR, and resolution of utility conflicts. The Engineer shall coordinate all activities with the State, or the State's designee, to facilitate the orderly progress and timely completion of the State's design phase.

1. COORDINATION OF ENGINEERING ACTIVITIES

a. Utility Layout: The Engineer shall maintain a utility layout in the latest version of Micro Station used by the State. This layout shall include all existing utilities which are to remain in place or be abandoned, and all adjusted utilities. This layout shall be utilized to monitor the necessity and evaluate alternatives. The Utility Engineer shall utilize the layout of existing utilities as prepared, if available, and decide of the following:

i. Facilities in conflict with the proposed project that are to be relocated.

ii. Facilities to be abandoned in place.

iii. Facilities to remain in service and in place as a result roadway design adjustments and meeting the current UAR.

iv. The Utility Engineer shall be responsible for determining if there are additional facilities, not shown in the Subsurface Utility Engineering (SUE) documents, which require relocation. The Engineer shall coordinate this information with the State immediately upon discovery.

2. PUBLIC & INDIVIDUAL MEETINGS WITH UTILITY COMPANIES

As required, to facilitate utility conflict identification and resolution, the Engineer shall:

a. Establish contact with all existing utilities within and adjacent to the project limits and set up utility coordination meetings to discuss concepts and options for construction.

b. Schedule all utility coordination meetings and ensure compatibility with the schedule of the State.

c. Set agenda for all coordination meetings as directed by the State.

d. Establish and promote the desired agenda and methodologies for utility construction within the project limits. The agenda and methodologies will consist primarily of promoting the construction of utilities as a part of the Highway Contract.

e. Orientation: Prepare and present, in collaboration with the State, instruction and orientation sessions as required. The instruction shall introduce the SUE Plans, the proposed utility layout, processes, demonstrate the technology and facilitate the preparation of work orders, billings, and contract related documentation as it pertains to utility adjustment work.

f. Initial Project Meeting: Attend an initial meeting and an on- site inspection (when appropriate) to ensure familiarity with existing conditions, project requirements and prepare a written report of the meeting.

g. Work Plan: Develop a work plan including a list of the tasks to be performed, a schedule and an estimate. The work plan must satisfy the requirements of the project and must be approved by the State prior to commencing work.

h. Progress Meetings: Meet with the State periodically to coordinate the work effort and resolve problems and prepare a written report of such meetings. The meetings shall review:

i. Activities completed since the last meeting

ii. Problems encountered.

iii. Late activities.

iv. Activities required by the next progress meeting.

v. Solutions for unresolved and/or anticipated problems.

vi. Information or items required from other agencies/consultants.

3. REVIEW OF UTILITY'S PROPOSED ADJUSTMENTS

a. Evaluate Alternatives: The Utility Engineer shall evaluate alternatives in the adjustment of utilities balancing the needs of both the State and the Utility.
b. Review Estimates and Schedules: The Utility Engineer shall review the utility adjustment estimates for reasonableness of cost and the timely scheduling of the adjustment.

c. Review Plans for compliance with Utility Accommodation Rules and proposed location data. The responsibility for quality and accuracy of Utility adjustment plans will remain with the Utility Company.
d. Inspect Traffic control setup. Ensure necessary traffic control, labor and equipment is utilized where applicable during the utility relocation process. The Utility Engineer shall ensure compliance with the regulations of the most recent edition of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD). The Utility Engineer must obtain approval from the State concerning the proposed method of handling traffic prior to allowing commencement of work.

4. The Engineer shall not provide services for the sole benefit of third parties.

5. Utility Certification/Special Provisions: The Utility Engineer shall submit upon request from the State, a Utility Certification or a Special Provisions report. The Utility Certification or Special Provisions report will certify that all utilities are clear for highway construction. However, if the utility adjustments are not complete prior to highway project letting, a Special Provision shall be required outlining all outstanding utility conflicts and their effects on highway construction.

   Furthermore, a Utility Clearance schedule, signed by the utility owner shall be provided with the certification as noted above. The formats for the Certification and the Clearance schedule will be provided by the State.

FIELD SURVEYING AND PHOTOGRAMMETRY

(Function Code 150)

A. AERIAL LiDAR

Aerial Lidar / imagery Collection & Mapping** 6" Contour Mapping

Aerial lidar data will be collected for a ~300ft wide corridor (150' x 150') centered on Trenton Rd. via a manned helicopter equipped with a Riegl VUX 1LR scanner at approximately 45 pts/m2 (points per square meter), on average to develop 6" contour mapping. Engineer will apply necessary strip adjustment, first-order filtering, and bare-earth classification and calibrate the collected data using ground control points.

Engineer will establish approximately twelve (12) aerial targets prior to the flight and perform the essential ground survey necessary to determine horizontal position and elevation off all ground control points.

All aerial survey data will be tied horizontally to the Texas State Plane Coordinate System of 1983 (NAD83, 2011) and vertically to NAVD88 (realized using Geoid12B).

Engineer will perform visible aboveground feature extraction (excluding trees and obscured areas), break line extraction, and surface data extraction at a grid interval of no more than 25-feet for a ~200ft wide corridor along the provided alignment as seen on the attached Exhibit.

Aerial imagery collection will be performed simultaneously during manned helicopter aerial lidar data collection. Engineer will fly at an altitude sufficient to acquire aerial imagery at 5 cm GSD

(ground sampling distance). The collected imagery will be calibrated and orthorectified to serve as background imagery and support planimetric features extraction within the scope limits shown in the attached Exhibit.

Deliverables will consist of:

- Tiled point cloud with bare classification in .las format
- DTM data and supporting files including TIN, LandXML and Six-inch (6") contours.
- 2D planimetric map data as extracted from aerial lidar and imagery as Microstation DGN.
- Three-inch (3") (0.25') digital ortho-imagery

The fees for aerial mapping are based on both Segment 1 and Segment 2 flown at the same time.

B. Right-of-way Strip Map Category 2 Route Survey

Task 02 — ROW strip map to assist in the Schematic Phase of the project.
CF will retrace the existing right-of-way of Trenton Road in the subject area. CF will create a .DWG or .DGN Cad files as requested.

CF will show ownership names and parcel lines based on the current tax records. This information is publicly available and shall not be relied on as a Boundary Survey or Title Report.

Right of Entry documents will be supplied to the surveyor in a continuous fashion.

C. Supplemental Category 6 Topographic Survey

Task 03 — Additional topographic on the ground Survey.

CF will locate visible improvements that will supplement items that were obscured during the aerial mapping. Ground Survey width to be 100' (50' by 50' based on the centerline of Trenton Rd.
CF will establish additional control and check points to be used as QA/QC for 6" contour mapping. This survey will also include obtaining existing sewer and drainage improvements if accessible.
No other subsurface features or utilities will be surveyed.

The survey will include locating trees within 50' from the centerline (total width 100ft) of Trenton Road.

The survey will also include topographic/hydrographic mapping for drainage ditches and irrigation canals 100' ft wide for 500ft upstream and downstream of the centerline of Trenton Road.

Combining aerial and on the ground surveying to prepare mapping of 6" contours.

Survey will show visible above ground utilities including overhead wires. The deliverable shall be .DGN files with unique line styles by company and type of line. The surveyor will also Call in to 811 for utility locating. Visible 811 markings will be located and incorporated into the survey. It is noted that the surveyor may not get a response from some utilities.
EXCLUSIONS FROM THE SCOPE OF SERVICES

Specific items excluded from this proposal are as follows:

1. Surveying individual parcels.
2. Right-of-Entry documents.
3. Surveyor will not provide opinions as to adequacy, on legal or title issues.
4. The survey will not address compliance or assessment of existing

utilities, wetland determinations, fault lines and/or environmental assessments that are beyond the surveyor's expertise.

5. The survey will not include any references to lease agreements, oil, gas and other mineral rights or matter that are strictly contractual and items which cannot be located upon the subject tract by physical description. Those matters are given constructive notice in a title commitment and must otherwise be addressed by the parties involved and/or addressed by legal counsel.
6. Flood elevation certificates.
7. Excavation of utilities.
8. "Standard traffic control" is performed by Engineer and is included in our standard rates. "Standard traffic control" can be described as short-term lane closure necessary for manhole entry or access to utility features located in the roadway. Should 'non-standard' traffic control be required (lane closures, police officer present, arrow board, etc…) these services will be considered extra.
9. Subdivision platting.
10. Client shall supply title and easement documents to be shown on the survey. No records will be researched other than highway and road right-of-way maps.
11. Any other services not specifically included within the description of the Scope of Services as described above.
12. Researching for easements. CF can assist in locating a Title Researcher for this task.
13. Plotting of easements. CF can plot the easements for an additional fee service provided by others.

ROADWAY DESIGN CONTROLS

(Function Code 160)

ROADWAY DESIGN:

The ENGINEER will perform roadway design services for the needed construction repairs along the project limits. The services will include:

1. Geometric Design
    a. Horizontal and Vertical Alignment
    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 LPA.
    c. Handling of traffic during construction shall be a consideration in the development of preliminary designs.

2. Exhibits for Airway/Highway clearance permits (if within airport vicinity)

3. Grading Design
    a. Refine the horizontal alignment including the following items
        i. Typical Sections
        ii. Design Cross Sections
        iii. Determine Cut and Fill Quantities
        iv. Slope Stability Analysis, if applicable
        v. Embankment Foundation Stability Analysis, if applicable
        vi. Embankment Settlement Analysis, if applicable

4. Pavement Design
    a. Prior to initiating detailed plan preparations for a project, a preliminary investigation shall be made to determine the approximate section and pavement type to be used for the pavement structure. The Flexible Pavement Design Manual for flexible pavement,

"Appendix F" of the Design Division, Operations and Procedures Manual, and the current AASHTO Guide for the Design of Pavement Structures, may be used for this purpose.

b. The typical section shall also reflect proposed geometric including pavement cross slopes, lane and shoulder widths, and slope rates whenever this data have not been previously shown on a schematic submission.
c. Embankment and Subgrade
    i. Provide Soil Core Holes (location and number to be agreed upon with LPA)
        1. Along center line of each roadway
    ii. Identify , interpret, and summarize the geological features that affect engineering design (PI, sulfate content & % of lime)
d. Traffic Data for Pavement Design
e. Basic Design Criteria
f. Life Cycle Cost Analysis(es)
g. Cost Data
h. Pavement Material Properties
i. Rehabilitation Investigations
    i. Soil Core Holes to determine type and depth of existing material, pavement, etc. The ENGINEER, in coordination with LPA, will determine whether to salvage the existing ACP and Flex base.

DRAINAGE

(Function Code 161)

DRAINAGE DESIGN :

The ENGINEER will perform drainage design services for the needed construction repairs along the project limits. All hydraulic design shall be in accordance with TxDOT's Hydraulic Manual, except where variances are permitted in writing by the LPA. The services will include:

1. Hydraulic 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 & Documentation
    a. Hydraulic Computations, if applicable
        i. Storm water detention available within the ROW (linear ft. alongside drain ditch).
        ii. Storm water detention available outside the ROW (as per local Drainage District)
        iii. Culverts
        iv. Bridge Waterways
        v. Channels
        vi. Storm sewers/inlets
        vii. Pump Stations
        viii. Storm Water Management Facilities
        ix. Irrigation Canals/Siphons
    b. Hydraulic Reports
    c. Federal Emergency Management Agency (FEMA) floodway requirements
    d. Determine impact of proposed drainage plan on Drainage District or Irrigation District receiving streams

3. Scour Evaluation – Waterway structures only (to be completed under FC 170)

EXHIBIT "A"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

PROJECT MANAGEMENT

(Function Code 164)

MEETINGS, COORDINATION & SUPPORT FOR PROJECT MANAGEMENT:

The ENGINEER shall meet and coordinate with all relevant entities (i.e., County, Regional Mobility Authority, Texas Department of Transportation, Rio Grande Valley Metropolitan Planning Organization, etc.…) and all other affected parties. The Engineer shall serve as representative for the LPA in coordination items. The Engineer shall coordinate with the LPA's staff on all Project related items.

ADDITIONAL RESONSIBILITIES

EASEMENTS, LETTERS OF PERMISSION, ETC.:

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

MEETINGS:

Meetings will be held with the FHWA, State Officials, local governments, property owners, utility owners, railroad companies, other consulting firms, etc., as needed or required by the LPA. The ENGINEER shall coordinate through the LPA for the development of this project with any local entity having jurisdiction or interest in the project (i.e., city, county, etc.).

SPECIFICATIONS, SPECIAL PROVISIONS, SPECIAL SPECIFICATIONS:

Use the State's standard specifications or previously approved special provisions and/or special specifications. If a special provision and/or special specification is developed for this project, it shall be in the State's format and incorporate references to approved State test procedures.

PROJECT MANAGER/ENGINEER COMMUNICATION:

The ENGINEER shall designate one Texas Registered Professional Engineer to be responsible throughout the project for project management and all communications, including billing, with the LPA**'s** Director. Any replacements to the ENGINEER's designated Project Manager/Engineer must be approved by the LPA.

Engineering documents produced for the department's engineering projects shall be signed, sealed and dated or CADD sealed in accordance with Administrative Order No. 5-89 and Administrative Circular No. 26-91.

DESIGN RESPONSIBILITIES:

The ENGINEER is responsible for design errors and/or omissions that become evident before, during or after construction of the project. The ENGINEER's responsibility for all questions arising from design errors and/or omissions will be determined by the LPA and all decisions shall be final and binding. This would include, but not necessarily be limited to:

1. All design errors and/or omissions resulting in additional design work to correct the errors and/or omissions.
2. Preparation of design documents and detail drawings necessary for a field change due to design errors and/or omissions.
3. Revision of original tracings to the extent required for a field change due to design errors and/or omissions.

The ENGINEER shall promptly make necessary revisions or corrections resulting from the ENGINEER's errors, omissions or negligent acts without additional compensation. Acceptance of the work by the LPA

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

DOCUMENT AND INFORMATION EXCHANGE:

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 all services to be provided under this agreement out of their office located at: 1201 E. interstate Hwy. 2, Mission, TX 78572

EXHIBIT "B"

TEDSI

Fee Estimate
Trenton Road- Project Development Fee Proposal (WA#1)

WA #1 - Project Development, Schematic, Environmental, Geotechnical, Survey, SUE, Public Involvement, Traffic Signal Warrant Studies, LOS Analysis	Principal	Project Manager	Project Engineer	Design Engineer	Engineer-In-Training	Engineering Technician	Sr. CADD Operator	CADD/GIS Technician	Administrative/ Clerical	Total Hours	Total Line Item Cost
TASK											
Project Development (Funding/Entity Coordination, AFA Development, Project Management, etc.)	40	142	81						40	303	$71,450
Geotechnical Engineering Services	SUBCONSULTANT GEOTECHNICAL COST										$239,152
Environmental Document (TxDOT/FHWA Clearance and Archeological & Historical Research)	SUBCONSULTANT ENVIRONMENTAL COST										$235,815
Aerial and Topographic Survey	SUBCONSULTANT SURVEY COST										$231,200
Schematic Development & TxDOT Approval		50	240		337	172	78			877	$149,992
Hydrological Map for Outfall Drain Ditches Outfalls & Capacities		8	102		40					150	$29,990
Bridge Layout (Scour and Submittals)		8	105	20	49			81		263	$44,985
Public Involvement for the Project w/1 Public Meeting	10	40	120	60	25				39	294	$58,368
Utility Coordination (SUE Level D, C, B, A)		120	240	375	350	300	200	228		1813	$299,986
Traffic Signal Warrants (3 Locations) & Traffic LOS Analysis		40	179	125	350		181			875	$148,996
Public Involvement for the Project w/1 Public Hearing	10	40	80	45	20				41	236	$46,524
Total Labor Hours	60	448	1147	625	1171	472	459	309	120	4811	
Contract Rate	$300.06	$264.52	$214.92	$181.86	$148.79	$140.76	$138.87	$115.73	$111.93		
TOTAL LABOR COSTS	$18,003.60	$118,504.96	$246,513.24	$113,662.50	$174,233.09	$66,438.72	$63,741.33	$35,760.57	$13,431.60		**$1,556,458**

EXHIBIT "C"

PROJECT DEVELOPMENT SCHEDULE - PHASE I

TRENTON ROAD

Limits: From I-69C (US 281) to FM 907 (Alamo Road)

TASK AND DESCRIPTION	2022				2023												2024											
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Work Authorization #1 Tasks																												
Project Development																												
Geotechnical Engineering Services	■	■	■																									
Aerial and Topographic Survey	■	■	■	■																								
ROW Strip Map	■	■	■	■	■	■	■	■	■	■																		
Utility Coordination (SUE)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Project Development (Funding/Entity Coordination, AFA Development, Project Management, etc.)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Public Involvment																												
Public Involvement for Public Meeting																		■										
Advertise & conduct Public Meeting																			■									
Environmental Document Preparation																												
Environmental Document Preparation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
Submit Final Draft Document																			■	■	■	■						
Agency Review and Revisions																							■	■	■	■		
Environmental Decision																											■	■
Schematic Development																												
Develop Schematic (Schematic, Bridge Layout, Traffic Signal Warrant Studies, etc.)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
Hydrologic Map	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
Submit Schematic to TxDOT																	■	■	■									
TxDOT Schematic Approval																					■	■						

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY
CERTIFICATION OF FILING

Certificate Number:
2022-919402

Date Filed:
08/08/2022

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.
TEDSI Infrastructure Group, Inc.
MISSION, TX United States

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.
Hidalgo County Precinct No. 4

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.
C-22-0468-08-18
Trenton Road Project

4 Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
		Controlling	Intermediary
Salinas, Jesus	Mission, TX United States	X	
Lupher, Mark W.	Houston, TX United States	X	
Morris, Jr., Jules M.	Houston, TX United States	X	
Stong, Craig F.	Mission , TX United States	X	

5 Check only if there is NO Interested Party. ☐

6 UNSWORN DECLARATION

My name is Jesus Salinas, and my date of birth is 12/24/1957.

My address is 2111 Scout Lane (street), Mission (city), TX (state), 78572 (zip code), USA (country).

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Hidalgo County, State of Texas, on the 8th day of August (month), 20 22 (year).

Signature of authorized agent of contracting business entity
(Declarant)

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/8/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Higginbotham Insurance Agency, Inc. 11700 Katy Freeway Suite 1100 Houston TX 77079	**CONTACT NAME:** Bee Bigtacion **PHONE (A/C, No, Ext):** 713-888-3951 **FAX (A/C, No):** 713-952-9939 **E-MAIL ADDRESS:** bbigtacion@higginbotham.net
INSURED TEDSINF-01 TEDSI Infrastructure Group, Inc. 1201 E. Interstate Highway 2 Mission TX 78572	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Continental Casualty Company — 20443 **INSURER B :** The Continental Insurance Company — 35289 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 1555275209 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY PRO-JECT X LOC OTHER:			1075066054	9/11/2021	9/11/2022	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 1,000,000 $ 1,000,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
A	**AUTOMOBILE LIABILITY** ANY AUTO OWNED AUTOS ONLY SCHEDULED AUTOS X HIRED AUTOS ONLY X NON-OWNED AUTOS ONLY			BUA2097261054	9/11/2021	9/11/2022	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) 	$ 1,000,000 $ $ $ $
A	X **UMBRELLA LIAB** X OCCUR **EXCESS LIAB** CLAIMS-MADE DED X RETENTION $ 10,000			2090503299	9/11/2021	9/11/2022	EACH OCCURRENCE AGGREGATE 	$ 2,000,000 $ 2,000,000 $
B	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		2068980107	9/11/2021	9/11/2022	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
A	PROFESSIONAL LIABILITY			AEH113771047	9/11/2021	9/11/2022	EACH CLAIM AGGREGATE PER CLAIM DEDUCTIBLE	$2,000,000 $2,000,000 $50,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

See Attached...

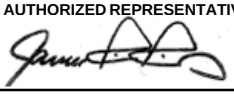
CERTIFICATE HOLDER

Hidalgo County Precinct No. 4
1051 N. Doolittle Ed
Edinburg TX 78542

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



AGENCY CUSTOMER ID: TEDSINF-01

LOC #:

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
Higginbotham Insurance Agency, Inc.	TEDSI Infrastructure Group, Inc. 1201 E. Interstate Highway 2 Mission TX 78572
POLICY NUMBER	
CARRIER / NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 **FORM TITLE:** CERTIFICATE OF LIABILITY INSURANCE

GENERAL LIABILITY:
The General Liability policy includes a blanket additional insured endorsement that provides additional insured status to the certificate holder only when there is a written insured contract between the insured and certificate holder that requires such status.

The General Liability policy includes a blanket waiver of subrogation endorsement that provides this feature only when there is a written contract between the insured and the certificate holder that requires it.

The General Liability policy includes a primary and non-contributory provision only when there is a written contract between the insured and the certificate holder that requires such provision.

HIRED & NON-OWNED AUTOMOBILE:
The Hired & Non-Owned Automobile policy includes a blanket waiver of subrogation endorsement that provides this feature only when there is a written contract between the insured and the certificate holder that requires it.

WORKERS COMPENSATION:
The Workers Compensation policy includes a blanket waiver of subrogation endorsement that provides this feature only when there is a written contract between the insured and the certificate holder that requires it.

The Workers Compensation policy includes a blanket endorsement providing 30 days' notice of cancellation that provides this feature only when there is a written contract between the named insured and the certificate holder that requires it.

UMBRELLA:
The Umbrella Liability policy is follow form on the General Liability and Hired & Non-Owned Automobile Liability and Employers' Liability policies.

Reference: Contract #C-22-0468-08-18_Project # 22-0468_Trenton Roadway Improvements (From I-69C (US 281) to FM 1423 (Valverde Rd) to I-69C (US 281) to FM 907 Alamo Road)