CONTRACT NO. C-12-119-07-31
DICKER ROAD
EXHIBIT "E"
Work Authorization Form

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 7 of the **Agreement** made by and between the **HIDALGO COUNTY**, acting herein by and through the **Commissioner's Court**, hereinafter called the "**Owner**", and **TEDSI Infrastructure Group**, professional engineers of Mission, Texas, hereinafter called the "**Engineer**".

PART 1.Scope of Work. The purpose of this Work Authorization is to provide services as indicated below:

The scope of services to be provided by the **Owner** is identified in **ATTACHMENT "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 **ATTACHMENT "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 **$ 397,469.00.** This amount is based upon the costs outlined in the ***Fee Proposal*** attached hereto as **ATTACHMENT "D"**.

PART 3. Payment. Compensation and payment to the **Engineer** for the services established under this Work Authorization shall be made in accordance with Articles 5, 6, and 7 of the **Agreement**.

PART 4. Funding. Work Authorization No. 1 shall be funded through funding source:
Account No. 2-1200-431-00-122-062-731
Requisition No. 220229

PART 5. Period of Service. This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and all work associated with this Work Authorization shall be performed within the time period identified in the ***Work Schedule*** attached hereto as **ATTACHMENT "C"**.

PART 6. Responsibilities and Obligations. This Work Authorization does not waive the parties' responsibilities and obligations provided under the **Agreement**.

PART 7. Acceptance and Acknowledgement. Acknowledgement and confirmation by Hidalgo County Precinct No. 2, Commissioner Hector "Tito" Palacios, as to the content and detail of this Work Authorization No. 1.

Hidalgo County Precinct No. 2

By:_____
Hector "Tito" Palacios, Commissioner Precinct No. 2

PART 8 Acceptance and Approval. Work Authorization is hereby accepted, and approved by Hidalgo Commissioners' Court on _____ as indicated below and effective as of ____ day of _____, 2012.

A purchase order will be issued by the Hidalgo County Purchasing Department after the execution of this document. Issuance of the purchase order will serve as the written Notice to Proceed on Work Authorization No. 1.

THE ENGINEER:
TEDSI INFRASTRUCTURE GROUP

BY:_____
Craig F. Stong, (Vice President)

ATTEST:

By:_____
Arturo Guajardo Jr., Hidalgo County Clerk

THE OWNER:
HIDALGO COUNTY

_____
Ramon Garcia (County Judge)

LIST OF ATTACHMENTS

ATTACHMENT "A"	-	Services to be Provided by the Owner
ATTACHMENT "B"	-	Services to be Provided by the Engineer
ATTACHMENT "C"	-	Work Schedule
ATTACHMENT "D"	-	Fee Proposal

CONTRACT NO. C-12-119-00-00
DICKER ROAD
WORK AUTHORIZATION NO. 1
ATTACHMENT "A"

Services to be Provided by the Owner

The following provides an outline of the services to be provided by the **Owner** in the development of the **Work Authorizations**.

The **Owner** will provide to the **Engineer** the following:

1) Prepare and execute a Purchase Order with Hidalgo County Purchasing Department
2) Authorization to the **Engineer** to begin work.
3) Payment for work performed by the **Engineer**.
4) Assistance to the **Engineer**, as necessary, to obtain required data and information from other local, regional, and state agencies that the **Engineer** cannot easily obtain.
5) Secure required Environmental permits from regulatory agencies
6) Acquire additional Right of Way identified by the **Engineer**
7) Provide any available relevant data that may on file concerning the Project.
8) Provide timely review and decisions in response to the **Engineers** request for information and/or submittals and deliverables.
9) Attend and participate in progress meetings as required and as coordinated and conducted by the **Engineer**.
10) Advertise and award, as assisted and recommended by the **Engineer**, construction contracts for the PS&E developed by the Engineer.
11) Attend pre-bid and pre-construction conferences coordinated and conducted by the **Engineer**.
12) Review and approve monthly and final estimates, developed by the **Engineer**, for payment to the Contractor. Compensate and pay the Contractor for work performed as identified in the approved monthly and final estimates.
13) Provide assistance to **Engineer** where necessary and possible with **Owner** information/resources to ensure project is completed within timely/efficient basis.
14) Disseminate, mail or deliver mail-out flyer, public meeting agendas and handouts, maps, and other related project information to the public.
15) Providing professional court transcribing and translation service as and when required for the public meeting and/or public hearing.
16) Provide a hard copy and digital copy of court transcript from meetings.
17) Provide hard copy of all public input received from meetings.
18) Publish the notices in the local newspaper, arrange for, pay and provide a location for the public meeting and hearing to be held,
19) Provide a mailing list and copy, collate and mail letters to adjacent property owners, local governmental officials and others as necessary.

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DICKER ROAD
WORK AUTHORIZATION NO. 1
ATTACHMENT "B"

Services to be Provided by the Engineer

The engineer shall provide the following engineer services required for the preparation of the plans, specification and estimate, and related documents for the above noted project. The Engineer shall maintain a direct line of communication and coordinate very closely with the Owner.

GENERAL MANAGEMENT/COORDINATION

1) The Engineer shall design, develop and prepare all documents in English units.
2) The Engineer shall develop/submit a work schedule with milestone activities and/or deliverables identified.
3) The Engineer shall utilize Microstation computer graphics system. Roadway design for the route study will be developed in GEOPAK.
4) The Engineer shall be required to meet with designated County's representatives, utility companies, adjacent and affected landowners as required for coordination during the development of the project.
5) The Engineer shall be required to prepare the minutes for any meeting as required for documentation purpose.
6) Right of Entry: It will be the responsibility of the Engineer to secure permission, short of litigation, to enter private property for purposes of survey, environmental and Engineering investigations. The Engineer will, at all times, contact the property owner prior to any entry onto the owner's property.
7) The Engineer shall perform quality control and assurance (QC/QA) on all deliverables associated with this project.
8) The Project Manager will continually review the quality, progress and cost of the various tasks assigned to all firms within the team. Quality review will include technical requirements.

PRELMINARY ENGINEERING REPORT

1) Develop and assemble Preliminary Construction Cost Estimates.
2) Develop Roadway Design Criteria; prepare the Design Summary Report.
3) Attend and participate in the Design Concept Conference.
4) Drainage Report
   a) Develop drainage area map for project site
   b) Determine existing drainage conditions
   c) Evaluate hydraulics for roadside ditches for widening of existing roadway.
   d) Evaluate storm sewer system for potential curb and gutter roadway.
   e) Evaluate potential impacts on existing FEMA Floodplain locations.
   f) Prepare report of findings.
5) Geotechnical Report
   a) Perform a Geotechnical Engineering Study for the two bridge structures and the siphon structure located along Dicker Road (Farm-to-Market [F.M.] Road 3072, between its intersections with . 23rd Street (State Highway [S.H.] 115) and S. Jackson Road (F.M. Road 2061), that will include drilling a total of six, 60-ft deep each borings. Typically, drilling will cease if five consecutive Texas Cone Penetrometer (TCP) test results of 100 blows for less than 4 in. are recorded. If unexpected soil conditions are encountered (i.e. softer than expected soil conditions based upon the TCP results), drilling will be continued past the anticipated maximum drilling depth and ceased at the Engineer's discretion.
   b) Borings will be located in the field utilizing tape and right angle measurements from existing benchmarks.

c) Obtain a grab sample at or near the bottom of the embankment near the two irrigation canals and drainage ditch for a total of three samples. Sieve analyses will be conducted to compute D50 and D95 values for scour analyses by others.
d) Samples from the borings will be collected by split-spoon or Shelby tube sampling techniques in between each TCP sampling interval. Representative portions of the recovered samples will be sealed, identified, packaged, and transported to our laboratory for subsequent testing and classification.
e) Upon completion of drilling activities, water level readings, if applicable, will be recorded in the open boreholes and the boreholes will be backfilled using the auger cuttings generated during the drilling operations.
f) Upon completion of the subsurface exploration, a general testing program will be designed to define the classification and shrink/swell characteristics of the subsurface conditions. Testing program is anticipated to include water content determinations, Atterberg Limits (plasticity) tests, unconfined compressive strength tests, dry unit weight determinations, and grain size analyses. Laboratory testing will be performed in general accordance with applicable American Society for Testing and Materials (ASTM) standards.
g) The results of the field and laboratory analysis will be presented in a written engineering report which will include the results of the field and laboratory testing, as well as pier capacity curves and grain size curves for scour analyses.
h) Our scope of services and cost assumes that the boring locations will be accessible to truck-mounted drilling rigs conducting the drilling operations parked at or near the road shoulder and off of the existing roadway utilizing standard warning signs and cones to alert the traveling public of work ahead. If additional traffic control measures other than standard warning signs and cones are needed, Engineer will notify County and discuss traffic control services. The cost of such additional traffic control services will be an additional charge and will not be done until approved by the County via additional work by supplemental agreement.
i) Reasonable efforts to locate underground utilities prior to performing any underground exploration activities by contacting the local "one call" utility locating service for commercial utility companies (such as natural gas, electric, water, etc.) to locate and mark in the field all utilities within the limits of the subsurface exploration activities. Engineer will not be responsible for any damage to utilities not properly located by the aforementioned method or to any utility not located by the aforementioned method but encountered and damaged during the subsurface exploration process. If during project execution Engineer feels that there exists a possibility of un-located or improperly located utilities, Engineer will notify County and discuss additional utility locating services and processes to reduce the probability of encountering a utility to acceptable levels. The cost of such additional utility locating services will be an additional charge and will not be done until approved by the County via additional work by supplemental agreement.

6) Pavement Section Design Services
a) Engineer will perform the pavement section design services for this segment of Dicker Road utilizing the 1993 American Association of State Highway and Transportation Officials (AASHTO) pavement design method based on traffic loading and frequency information developed from the traffic data collected by the Engineer.
b) Engineer will drill 18, 7-ft deep each pavement borings along the subject alignment and conduct California Bearing Ratio testing on subgrade samples for use in pavement design. Collection of falling weight deflectometer data is not included in our scope.
c) Borings will be located in the field utilizing tape and right angle measurements from existing benchmarks.
d) Samples from the borings will be collected by split-spoon or Shelby tube sampling techniques in between each TCP sampling interval. Representative portions of the recovered samples will be sealed, identified, packaged, and transported to our laboratory for subsequent testing and classification.
e) Upon completion of drilling activities, water level readings, if applicable, will be recorded in the open boreholes and the boreholes will be backfilled using the auger cuttings generated during the drilling operations.
f) Upon completion of the subsurface exploration, a general testing program will be designed to define the classification and shrink/swell characteristics of the subsurface conditions. Testing program is anticipated

to include water content determinations, Atterberg Limits (plasticity) tests, lime series determinations, sulfate content determinations, and grain size analyses. Laboratory testing will be performed in general accordance with applicable ASTM standards.

g) The results of the field and laboratory analysis will be presented in a written engineering report which will include the results of the field and laboratory testing, as well as the pavement section design report.
h) Our scope of services and cost assumes that the boring locations will be accessible to truck-mounted drilling rigs conducting the drilling operations parked at or near the road shoulder and off of the existing roadway utilizing standard warning signs and cones to alert the traveling public of work ahead. If additional traffic control measures other than standard warning signs and cones are needed, Engineer will notify County and discuss traffic control services. The cost of such additional traffic control services will be an additional charge and will not be done until approved by the County via additional work by supplemental agreement.
i) Engineer will take reasonable efforts to locate underground utilities prior to performing any underground exploration activities by contacting the local "one call" utility locating service for commercial utility companies (such as natural gas, electric, water, etc.) to locate and mark in the field all utilities within the limits of the subsurface exploration activities. Engineer will not be responsible for any damage to utilities not properly located by the aforementioned method or to any utility not located by the aforementioned method but encountered and damaged during the subsurface exploration process. If during project execution Engineer feels that there exists a possibility of un-located or improperly located utilities, Engineer will notify County and discuss additional utility locating services and processes to reduce the probability of encountering a utility to acceptable levels. The cost of such additional utility locating services will be an additional charge and will not be done until approved by the County via additional work by supplemental agreement.

7) Development of level of service analysis, turning movement counts or traffic counts at 23rd, 10th, McColl Rd and Jackson Road.
   a) Project traffic counts for anticipated completion of construction and 20 years after completion of construction.
   b) Prepare traffic signal warrants for locations based on counts.
   c) Determine lane configuration based on traffic counts.
8) Roadway Design Evaluation
   a) Develop preliminary schematic for the following
      i) Widening of existing roadway with roadside ditches
      ii) Reconstruction of roadway with curb and gutter section.
   b) Develop narrative and typical section for Traffic Control Plan for each roadway sections indicated above.
   c) Develop typical section and preliminary pavement design.
   d) Develop construction cost estimate for the two roadway sections indicated above.
9) Bridge Evaluation
   a) Request current BRINSAP reports from TxDOT
   b) Complete field condition survey of bridges
   c) Develop cost evaluations for replacement versus widening of existing structures
   d) Prepare Report
10) Attend design coordination meetings with County, MPO and TxDOT as appropriate.
11) Prepare Preliminary Engineering Report

FIELD SURVEYING

1) Work shall assure compliance and adherence to all rules, regulations and policies as set forth by the Texas Board of Professional Land Surveyors.
2) The Engineer shall provide all traffic control, labor and equipment for the Traffic Control Plan (TCP) while performing services under this work authorization. The Engineer's Surveyor shall comply with the regulations of the most recent edition of the "Texas Manual on Uniform Traffic Control Devices".
3) Project Control and Baseline (Set in location clear of proposed improvements)
   a) Establish Horizontal and Vertical Control Benchmarks by setting permanent benchmarks with an Aluminum disk on a 5/8" iron rod set in concrete, every 1000' throughout the limits of the project. Establish elevations on

set points within the specifications of the TSPS Category 8. If applicable, NGS first order benchmarks shall be incorporated into the level loops utilizing the NAVD88 Datum elevations. Signed and Sealed, RPLS, control data sheets shall be created for the newly establish BMs and included in the deliverables.

b) Stake existing centerline
   i) Set 2' #5 iron rods at every 1000 ft, at all angle points, PC's, PT's and all intersecting roadways. Center points to be set are every 1000 feet.
   ii) Reference all angle points, PC's, PT's, and at 1000 foot interval stations with iron pins on the right of way line (on both sides).
   iii) Stationing shall correspond with the design centerline. Stationing shall be painted at 500-foot stations on the pavement using traffic paint.

4) Obtain cross sections every 100 ft at whole stations. Cross sections to extend 10 ft outside of proposed right of way. Obtain additional survey information as necessary to accurate develop a digital terrain model (DTM).
5) Topographic Survey (All work will be to 10 foot outside of the proposed ROW)
   a) Obtain driveway cross sections. Cross sections to extend 10 ft outside of proposed right of way.
   b) Update Inventory public access, commercial, and private driveways by type (dirt, caliche, gravel, concrete or paved).
   c) Side Drains
      i) Obtain approximate roadway centerline station.
      ii) Obtain size, length, description of structure, and conditions.
      iii) Obtain F.L. elevations at both ends and offsets to driveway or turnout centerline.
      iv) Label descriptions (size and length) on each side drain.
6) Culverts:
   a) Obtain size of drainage structure, type, skewed angle, and material. Label and describe each structures (for example if it's an irrigation or drainage culvert) size and length.
   b) Locate and obtain inlet and outlet flow lines elevations at structures, top of headwall, aprons, edge of pavement, and center line.
   c) Obtain profile and cross sections of upstream and downstream ravines on man-made channels leading from and to the existing or proposed structure. These profiles and cross sections shall extend from inlet and outlet flow lines to distance of 500 ft. beyond the right of way or as directed by the Engineer.
   d) Determine type of wingwall (i.e. flared wingwall, parallel, etc…) and safety end treatments (pipe runners, safety end treatments, barrier rail, etc. For barrier rail include type of end treatments, location, type, length, and height.
   e) Obtain pictures of culverts barrels and outlet and inlet view to right of way line.
7) Fence, Mailboxes, and Sign Inventory:
   a) Locate and obtain mailboxes inventory (type-identify as single, double or multiple) for all mailboxes within R.O.W. and at all intersection locations. Include photographs.
   b) Locate and obtain sign inventory (type) for all signs within R.O.W. and at all intersection locations Include pictures.
8) Miscellaneous
   a) This item requires the surveyor to pick up any items that may be an obstruction for the proposed construction or may require special attention during the development of construction plans (ex: oil and gas on proposed right of way, etc.)
   b) ASCII files shall be provided to the State. These files shall be retrieved from GPS/Data Collector and shall be compatible with Microstation.
   c) Field books, containing all information gathered in the field, this information shall be to the surveyor's best knowledge, accurate and complete.
   d) Survey in miscellaneous items not indicated above that are within the existing and proposed right of way.

RIGHT OF WAY SURVEY

1) Utility
   a) Contact "One Call" to request marking of underground utilities
   b) Request existing utility information from local utility companies
   c) The Engineer will perform any surveying necessary to for horizontal location of located, "Flagged",

underground utilities and visible overhead utilities.

d) The Engineer will obtain measure downs on utilities as follows
   i) Top of key on gas line values
   ii) Top of key on water line values
   iii) Flowline, size of tie-ins and direction of flow for sanitary sewer manholes
   iv) Flowline, size pipe for irrigation systems
   v) Flowline and size of system for inverted siphons.
e) Develop a preliminary list of potential conflicts with existing utilities.
f) Subsurface Utility Engineering is not included in the scope of work.

2) Right of Way
   a) The Engineer shall obtain the most current existing adjoining right of way information information as follows:
      i) Plats
      ii) Deeds
      iii) Ownership information
   b) The Engineer shall survey in the exiting roadway right of way and adjoining parcel lines in the project coordinate system.
   c) Microstation file shall be provided to show the following:
      i) Existing roadway right of way
      ii) Adjoining parcel property lines
      iii) Legal information
      iv) Ownership information

ENVIRONMENTAL CONTRAINTS ANALYSIS

Engineer's approach will be to take photographs of the corridor, the collection of available and observable desktop environmental data, the identification of potential environmental issues and recommendations. A more detailed outline is as follows:

1) In order to identify potential environmental issues that may impact the design and construction of the Dicker Road added capacity project, Engineer will prepare an environmental constraints map. Environmental-related information will be compiled using publically obtainable data, State of Texas agency data, and field observations. This information will be mapped in relationship to the proposed route using Arc View 10.0 in a Geographic Information Systems (GIS) database and then overlain on an aerial map. The Area of Potential Effects (APE) to be considered for data collection will be 150 feet on either side of the corridor. The corridor will be examined for elements of the environment that are subject to regulation under the National Environmental Policy Act of 1969 (NEPA) and will be as follows:
   a) State and Federally- listed hazardous materials/hazardous wastes regulated sites;
   b) Known historical sites and/or districts and Texas Recorded Historic Landmarks; Texas Historic Sites Atlas; Handbook of Texas Online entries; Irrigation system maps from Texas A&M University's Irrigation Technology Center; TxDOT's South Texas irrigation context ; Available previous historic resources survey reports at TxDOT Environmental Affairs Division; Historical United States Department of Agriculture soil survey maps;
   c) Current and historical United States Geological Survey (USGS) maps;
   d) 1968 aerial photographs, available online from the University of North Texas' Portal to Texas History.(For structures over the age of 45 years [allows for five year construction window];
   e) Biologically-sensitive areas relative to State and Federally-listed threatened and endangered species including rare species communities;
   f) Block groups indicated minority and low-income populations and limited English proficiency;
   g) Soil conditions and geological formations;

   h) Unusually large trees and other unique habitat or vegetation features;
   i) Property Lines;
   j) Water resources including floodplains and waters of the U.S. including wetlands, which may be jurisdictional under Section 404 of the Clean Water Act;
   k) Existing general land use (residential, commercial, public, industrial, agricultural, undeveloped);
   l) Proposed land use (residential, commercial);
   m) Churches, cemeteries, schools, community centers and parks;
   n) Municipal and Hazardous Wastes Landfills;
   o) Prime farmlands;
   p) Utilities (pipelines, transmissions, cell towers, water wells, etc.); and
   q) Drainage ditches, canals, siphons.

2) Each element will be placed in the GIS database as a discrete layer. Layers can be viewed separately or in any combination in order to access potential constraints. All information will be field verified. A local RKEI Biologist will conduct a 100% visual survey of the entire route after the initial data compilation has been completed. Additional information garnered from this task will be added to the constraints map as is appropriate.
3) Deliverables
   a) Provide all data on an aerial map (an overall environmental constraints map) showing locations of features identified in the corridor analyses
   b) Summary report of the literature review/data acquisition process, observations
   c) Results, and recommendations.

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ATTACHMENT "C"
Work Schedule

Description	**Time**
Purchase Order and NTP	Written NTP
Survey	3 months
Reports	3 months
Total	**6 months from NTP**

CONTRACT NO. C-12-119-00-00
DICKER ROAD
WORK AUTHORIZATION NO. 1
ATTACHMENT "D"
Fee Proposal

TEDSI BASIC ENGINEERING SERVICES

Description	**Fee**
Coordination with MPO, TxDOT and County	$ 14,560
Utility Coordination	$ 6,505
Preliminary Engineering Report	$ 120,905
Direct Expenses	$ 12,930
Subtotal TEDSI Basic Engineering Services	**$ 154,900**

TEDSI ADDITIONAL ENGINEERING SERVICES

Description	**Fee**
Drainage Report	$ 29,780
Traffic Engineering Report	$ 46,800
Subtotal TEDSI Additional Engineering Services	**$ 76,580**

SUBCONSULTANT ADDITIONAL ENGINEERING SERVICES

Description	**Fee**
Survey	$ 95,623
Environmental Constraints Analysis	$ 8,840
Geotechnical Testing, Pavement Design and Report	$ 39,875
Subtotal Subconsultant Additional Engineering Services	$ 144,338
TEDSI Management and Coordinate Fee at 15%	$ 21,651
Subtotal	**$ 165,989**

Total Fee Proposal **$ 397,469**