HIDALGO COUNTY
Professional Engineering Services
Contract # C-13-336-12-10
Work Authorization Form

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 1 of the Agreement made by and between **HIDALGO COUNTY**, action herein by and through the **Commissioner's Court**, hereinafter called the "**Owner**," and, **L&G Consulting Engineers, Inc.** *d/b/a* **L&G Engineering**, professional engineers of Mercedes, Texas hereinafter called "**Engineer**".

PART 1. SCOPE OF WORK

The purpose of this Work Authorization is for the **Engineer** to **provide Engineering Services required for the preparation of Environmental Assessment with TxDOT, Public Involvement, Schematic and Hydrologic Design for the FM 1925 Project from FM 907 (Alamo Road) to East of SH 68 (Uresti Street).**

The scope of services to be provided by the **Owner** is identified in ***EXHIBIT "A" – Scope of Services to be provided by the Owner*** attached hereto.

The scope of services to be provided by the **Engineer** is identified in ***EXHIBIT "B" – Scope of Services to be provided by the Engineer*** attached hereto.

PART 2. ESTIMATED COST

The estimated cost for services under this Work Authorization is **$549,575.00**. This amount is based upon the costs outlined in the Estimated **Cost Proposal** attached hereto as ***EXHIBIT "D-1" – Estimated Project Fee Schedule and Man-hour Breakdown.***

PART 3. PAYMENT

Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with **Article 6** of the Agreement.

PART 4. FUNDING

This Work Authorization No. 1 shall be funded through funding source:
Account No. to **be determined by budget department**
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 shall serves as a Notice to Proceed as per Article 3, Period of Service on the Agreement. This Work Authorization shall terminate ***upon completion of scopes of the work authorization,*** as identified on ***EXHIBIT "C" – Work Schedule.***

PART 6. RESPONSIBILITIES AND OBLIGATIONS

This Authorization does not waive the parties' responsibilities and obligations provided under the **Agreement**.

PART 7. ACKNOWLEDGEMENT AND CONFIRMATION

Acknowledgement and confirmation by Hidalgo County Precinct No. 4, Commissioner Joseph Palacios as to the content and detail of this **Work Authorization No. 1.**

HIDALGO COUNTY
COMMISSIONER PRECINCT NO. 4

BY:_____

PART 8. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on December 16, 2013 as indicated below.

THE ENGINEER:
L&G ENGINEERING

By: Jacinto Garza, P.E./President

THE OWNER:
HIDALGO COUNTY

By: Hon. Ramon Garcia, County Judge

ATTEST:

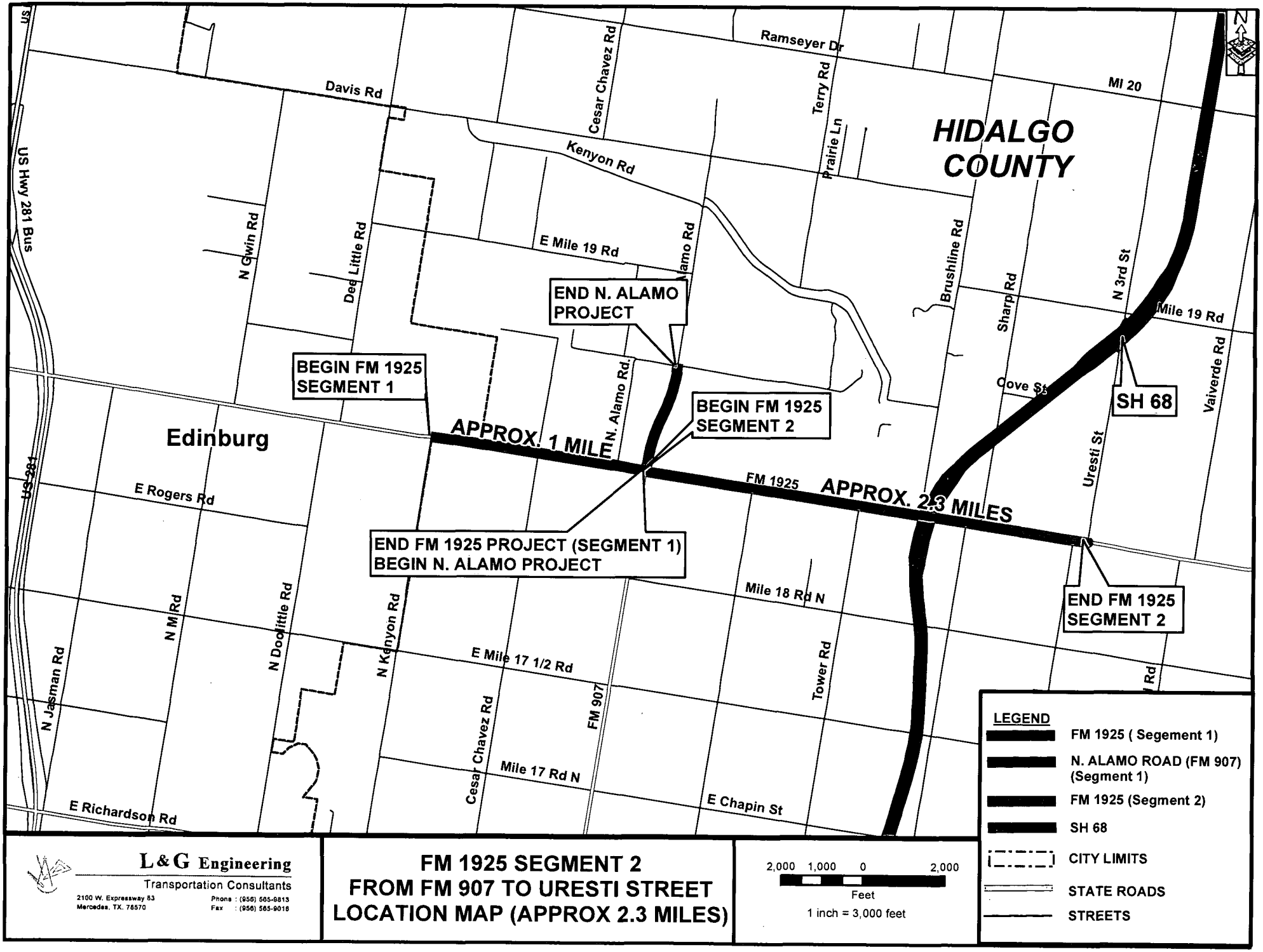
By: Arturo Guajardo, Jr., County Clerk

Approved by Commissioners' Court
on 12-10-13-RO

LIST OF EXHIBITS

Location Map

Exhibit A – Services to be provided by Owner
Exhibit B – Services to be provided by Engineer
Exhibit C – Work Schedule
Exhibit D-1 – Estimated Project Fee Schedule and Man-hour Breakdown



L&G Engineering
Transportation Consultants
2100 W. Expressway 83
Mercedes, TX. 78570
Phone : (956) 565-9813
Fax : (956) 565-9018

FM 1925 SEGMENT 2 FROM FM 907 TO URESTI STREET LOCATION MAP (APPROX 2.3 MILES)

EXHIBIT "A"

Services to be provided by the County

1. The County will issue work authorization to initiate all required services and designate the authorized representative of the coordination of each work authorization.

2. The County will provide copies of all subdivision plats of record and/or in the subdivision process.

3. The County will provide the Engineer with on-going guidance, timely reviews, and decisions necessary to complete services required by the work authorization in order to permit the Engineer to maintain an agreed upon project schedule.

4. The County will provide a Purchase Order and process all acceptable requests for payment in a timely manner.

5. The Work Authorization will identify the Notice to Proceed date.

GENERAL INSTRUCTIONS

ENGINEER shall mean L&G Engineering.

STATE shall mean Texas Department of Transportation.

COUNTY shall mean the Hidalgo County.

PROJECT DESCRIPTION

The services designated herein as "Services provided by the ENGINEER" shall include the performance of all engineering services for the following described facility:

COUNTY/CITY: HIDALGO COUNTY

CONTROL: _____

PROJECT/DESCRIPTION: Professional Engineering Services

LENGTH: 2.3 MILES

HIGHWAY: FM 1925 Project

LIMITS: from FM 907 (Alamo Rd) to East of SH 68 (Uresti St.)

EXISTING FACILITY

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)

NOTES

ROUTE AND DESIGN STUDIES

(Function Code 110)

Services Provided By: ENGINEER	COUNTY		
YES	N/A	1.	Route Location Studies
N/A	N/A	2.	Level of Service Analysis
N/A	N/A	3.	Traffic Evaluations and Projections
YES	N/A	4.	Develop Roadway Design Criteria
YES	N/A	5.	Preliminary Cost Estimates
YES	N/A	6.	Design Schematic (See Section 7, page 7-1 for schematic layout requirements)
YES	N/A	7.	Preliminary Right-of-Way Requirements
YES	N/A	8.	Design Concept Conference
		9.	Soil Core Hole Drilling
N/A	N/A		a. Pavement (See Section 7, pages 7-3 thru 7-4 for requirements)
N/A	N/A		b. Retaining Walls (See Section 10, page 10-1 thru 10-2 for requirements)
N/A	N/A		c. Miscellaneous Structures (See Section 10, page 10-4 for requirements)
N/A	N/A		d. Bridges (See Section 11, page 11-3 for requirements)

NOTES
SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT
(Function Code 120)

Services Provided By: ENGINEER	COUNTY	
		1. Environmental Reports All Environmental Reports shall be in accordance with 43 Texas Administrative Code (TAC) 2.40-2.51, Code of Federal Regulations, Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.
		a. Environmental Assessments
NO	NO	(1) An Environmental Assessment shall be prepared, anticipating a Categorical Exclusion.
YES	NO	(2) An Environmental Assessment shall be prepared, anticipating a Finding of No Significant Impact.
NO	NO	(3) An Environmental Assessment shall be prepared, anticipating the need for a Draft Environmental Impact Statement.
		b. Environmental Impact Statement
NO	NO	(1) A Draft Environmental Impact Statement shall be prepared. After appropriate interagency and public reviews within time limits prescribed by the Code of Federal Regulations, Title 23, Part 771 and 43 Texas Administrative Code 2.40-2.51, a Final Environmental Impact Statement shall be prepared.
NO	NO	(2) A Section 4(f) Statement (Department of Transportation Act) shall be provided by the ENGINEER. The format and content of the statement is found in FHWA Technical Advisory T6640.8A.
		2. Public Involvement All public involvement procedures shall be in accordance with 43 Texas Administrative Code (TAC) 2.40-2.51, Code of Federal Regulations Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.
YES	NO	a. A public involvement meeting(s)/hearing(s) shall be scheduled, coordinated and conducted.*
YES	NO	b. Technical assistance, meeting(s)/hearing(s) preparation, maintenance of contracts lists, minutes of meeting(s), exhibit preparation, and other tasks outlined by the COUNTY, 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 COUNTY.
YES	NO	a. Historic Structure Studies 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
YES	NO	(1) 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.
YES	NO	(2) Archeological reconnaissance will be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.
YES	NO	(3) Archeological survey shall be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.

Services Provided By: ENGINEER	COUNTY	
		Noise and Air Quality Analyses
YES	NO	a. Noise Analysis A noise analysis shall be prepared, including predicted noise levels and the consideration and evaluation of noise mitigation, in accordance with the STATE'S Noise Guidelines. The noise analysis report shall be prepared and submitted to TxDOT for review and results shall be made part of the administratively complete document.
YES	NO	b. Air Quality Analysis 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 included in the administratively complete document for the project.
YES	NO	5. Ecological Investigations A wetland survey and if necessary, a wetland delineation shall be conducted and a "wetland finding" shall be provided if necessary. A determination should be made if there are potential federally listed endangered or threatened species that could be impacted. The District will be notified as soon as possible that Section 7 or 10 consultations may be required. Supporting data will be furnished to the district when consultation with the U.S. Fish and Wildlife Service is undertaken.
YES	NO	6. Hazardous Materials The consultant shall prepare a Hazardous Materials Technical report shall be submitted to TxDOT for review and approval. The results shall be made part of the administratively complete document perform an Environmental Site Assessment for hazardous materials impact in accordance with the American Society for Testing and Materials (ASTM) 1528.93 (Transaction Screen Process).
YES	NO	7. General Guidelines for Preparation of Environmental Documents a. The Biological Impact Evaluation Report shall be prepared 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 administratively complete document shall be color copies and text shall be black and white.

RIGHT-OF-WAY DATA
(Function Code 130)

Services Provided By:
SURVEYOR COUNTY

NOTE: No work involving right-of-way (ROW) data is to be performed until the COUNTY has given the ENGINEER written approval of the final location of the proposed ROW lines as approved by TxDOT.

A. RIGHT-OF-WAY MAPPING:

1. **PURPOSE:**
The purpose of right-of-way mapping is to prepare documents suitable for the acquisition of real property interests and the probable issuance of a title policy.

2. **DEFINITIONS:**
For purposes of this Contract, the following definitions shall apply:

2.1. Abstract Map – A drawing to scale prepared from record documents depicting proposed right-of-way lines, existing right-of-way lines, easement lines, and private property lines with relevant grantee names, recording data, and recording dates.

2.2. Closure/Area Calculation Sheet – A computer generated print-out of the area and the perimeter bearings, distances, curve data, and coordinates of an individual parcel of land to be acquired.

2.3. Access Denial Line – A line which indicates specific location where access to the roadway is denied.

2.4. Property Descriptions – A written metes and bounds description delineating the area and the boundary and describing the location of an individual parcel of land unique to all other parcels of land.

2.5. Owner – The most current title holder of record as determined by a study of the Real Property Records.

2.6. Parcel Plat – An 8½ inch by 11 inch drawing to scale depicting all the information shown on the right-of-way map regarding an individual parcel of land to be acquired.

2.7. Parent Tract – A unit or contiguous units of land under one ownership, comprising a single marketable tract of land consistent with the principle of highest and best use. A parent tract may be described by a single instrument or several instruments. A single parent tract cannot be severed by a public right-of-way, easement, or separate ownership which destroys unity of use.

2.8. Parent Tract Inset – A small line drawing, to an appropriate scale, of the parent tract perimeter placed upon the right-of-way map in the proximity of the respective parcel. Parent tract insets are used in cases where the parent tract cannot be shown to the same scale as the right-of-way map. Since parent tract insets are used to identify the limits and location of parent tracts, they should include public right-of-ways, utility easements and fee strips, and identifiable water courses which bound the parent tract.

2.9. Point of Beginning (P.O.B.) – A corner of the parcel of land to be acquired, located on the proposed right-of-way line and being the beginning terminus of the first course of the property description.

2.10. Point of Commencing (P.O.C.) – A monumented property corner which can be identified in the Real Property Records and is located outside the proposed right-of-way corridor. For title purposes, the point of commencing should be a monumented back corner of the parent tract. In the event a monumented back corner of the parent tract cannot be recovered, the nearest identifiable monumented property corner located outside the proposed right-of-way corridor may be used.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

Services Provided By:
SURVEYOR COUNTY

2.11. Preliminary Right-of-Way Layout/Abstract Map – A drawing to scale depicting proposed right-of-way lines, existing right-of-way lines, proposed pavement, access denial lines, the proposed centerline alignment, private property lines, easement lines, visible improvements, visible utilities, the station and offset from the centerline alignment to each Point of Curvature (PC), Point of Tangency (PT), and angle point in the proposed right-of-way lines and to each PC, PT, and angle point in the existing right-of-way lines in areas of no proposed acquisition. *(Reference Sample on CD Attached)*

2.12. Right-of-Way Maps/Property Description/Parcel Plats – A series of 22 inch by 34 inch and 11 inch by 17 inch drawings to scale depicting the results of relevant elements of records research, field work, analysis, computation, and map making required to determine title, delineate areas and boundaries, locate and describe utilities and improvements to the extent necessary to appraise the value and negotiate the acquisition of individual parcels of private land for a proposed right-of-way project. *(Reference Sample on CD Attached)*

3. WORK TO BE PERFORMED:

N/A N/A 3.1. Preliminary Right-of-Way Layout/Abstract Map:

An abstract map shall be prepared sufficient to determine the following:

3.1.1. Any and all interests of public record held in the land to be acquired.

3.1.2 The total record holdings of an owner contiguous to land to be acquired from that owner.

3.1.3. Any and all interests in land to be acquired held in common (shopping mall parking lots, subdivision reserves, etc.)

3.1.4. Any and all improvements proposed by other agencies which may have a bearing on project development.

3.1.5. All called monuments, bearings, and distances as per recorded information.

N/A N/A 3.2 Right-of-Way Map:

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

The SURVEYOR shall field locate property corners, existing right-of-way markers, improvements, visible utilities, verify and update the planimetric file, if provided, and as directed by the ENGINEER.

A right-of-way map shall be prepared for each proposed right-of-way project. A right-of-way map shall include a title sheet, an index sheet, a survey control index sheet, a horizontal and vertical control data sheet, and sufficient plan sheets to cover the proposed project, or as directed by the ENGINEER. The STATE has developed standard title sheets, index sheets, and plan sheets, copies of which the SURVEYOR shall request and secure for all purposes of this Contract. Plan sheets shall include, but need not be limited to, the following items of information.

By mutual agreement between the Texas Board of Professional Land Surveying and the TxDOT, right-of-way maps need not be signed and sealed by a Registered Professional Land Surveyor.

3.2.1. Proposed right-of-way lines shall be delineated with appropriate bearings, distances, and curve data. Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance.

3.2.2. Existing right-of-way lines shall be delineated with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired. Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance.

Services
Provided By:
SURVEYOR COUNTY

3.2.3. The proposed project baseline alignment shall be delineated with appropriate bearings, distances, and curve data. Curve data shall include the station of the curve Point of Intersection (PI), radius, delta angle, arc length, tangent length, long chord bearing and distance, and the N and E coordinates of the curve PI. All alignment PCs, PTs, and even 500 foot stations shall be labeled as to station.

3.2.4. Proposed paving lines combined with relevant existing paving lines shall be shown to the extent necessary to compile a complete picture of proposed traffic movements. Proposed paving on the final mylars submitted to the ENGINEER shall be shaded with a dot pattern or highlighted by some other means acceptable to the ENGINEER.

3.2.5. Access denial lines shall be shown sufficiently to indicate areas where access is to be denied and where access is to be permitted if required by the ENGINEER.

3.2.6. Private property lines shall be delineated with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired. Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance.

3.2.7. Porción lines, subdivision lines and survey lines shall be shown and identified by name and Porción number.

3.2.8. County lines and city limit lines shall be located and identified by name.

3.2.9. A north arrow shall be shown on each sheet, and, if possible, located in the upper right corner of the sheet.

3.2.10. Monumentation set or found shall be shown and described as to material and size.

3.2.11. A station and offset shall be shown for each PC, PT, and angle point in the proposed right-of-way lines. Stations and offsets shall be with respect to the proposed centerline alignment.

NOT INCLUDED IN

3.2.12. Intersecting and adjoining public right-of-ways shall be shown and identified by name, right-of-way width, and recording data.

WORK AUTHORIZATION NO. 1

3.2.13. Railroads shall be shown and identified by name, right-of-way width, and recording data.

3.2.14. Utility corridors shall be identified as to easement or fee and recording information shall be identified.

3.2.15. Easements and fee strips shall be shown and identified by width, owner, distance of easement to a property corner of the parent track, and recording data.

3.2.16. Building lines or set-back lines shall be shown and identified.

3.2.17. Visible improvements located within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line shall be shown and identified.

3.2.18. Structures shall be identified as commercial or residential, by number of stories, and as to type (brick, wood frame, etc.).

3.2.19. Structures which are severed by a proposed right-of-way line shall be dimensioned to the extent necessary to completely delineate the severed parts.

3.2.20. Parking areas, billboards, and other on-premise signs which are severed by a proposed right-of-way line shall be dimensioned to the extent necessary to delineate that portion of the parking area, billboard, or sign which is located within the proposed right-of-way corridor.

Services
Provided By:
SURVEYOR COUNTY

3.2.21. In cases where structures are located outside the proposed right-of-way corridor and within 25 feet of a proposed right-of-way line, the shortest distance between the structure and the proposed right-of-way line shall be shown and field verified.

3.2.22. Visible utilities located within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line shall be shown and identified.

3.2.23. The location of underground utilities and fuel storage tanks situated within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line shall be determined and shown as required by the ENGINEER. The visible location of stand pipes, vents and filler caps in conjunction with available design and as-built drawings may be used to determine a most probable location and size in the event an actual location is indeterminable.

3.2.24. Points of commencing and points of beginning shall be shown and labeled. Points of beginning shall be shown with their respective N and E surface coordinates. As an exception, a point of commencing will not be required in the case of a total taking without a remainder.

3.2.25. Each parcel of land to be acquired shall be identified by a parcel number which shall appear in the ownership tabulation and on the right-of-way map in the proximity of the respective parcel. If the SURVEYOR is unfamiliar with the criteria used by the STATE to assign parcel numbers, he shall seek the assistance of the ENGINEER at the time the abstract map is complete. THE SURVEYOR SHALL SEEK ASSISTANCE FROM THE ENGINEER IN DEVELOPING AN OWNERSHIP TABULATION TABLE.

3.2.26. An ownership tabulation shall be shown which shall include the parcel number, existing area of the parent tract, lot(s) and block(s) constituting the parent tract when applicable, owner's name, type of conveyance, film code, county clerk's file number, taking area, and remaining area of the parent tract located left and/or right of the centerline alignment. Types of conveyance, film code and file numbers refer to conveyances into the STATE and will be added to the right-of-way map by the STATE at a later date. Several blank lines shall be provided in the tabulation block to facilitate future map additions.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

3.2.27. A parent tract inset shall be shown for each parent tract which cannot be shown to scale on the right-of-way map. The use of broken scale lines should be avoided. When parent tract insets are used, the point of commencing with the appropriate bearing and distance to the point of beginning may be shown on the parent tract inset.

3.2.28. A note shall be included on the title sheet and each map sheet stating the source of bearings, coordinates, and datum used.

3.2.29. Appropriate notes shall be included on the title sheet and each map sheet stating the following:

a. Month(s) and year abstracting upon which the map is based.
b. Month(s) and year field surveys were conducted upon which the map is based.
c. Month and year the map was completed by the SURVEYOR.

3.2.30. The right-of-way CSJ number, if available, shall be shown on each right-of-way map sheet.

Services Provided By:
SURVEYOR COUNTY

3.3. Exhibits:
An Exhibit shall be prepared for each parcel or tract consisting of a property description and a parcel plat.

N/A NO 3.3.1. Property Description:

A property description shall be prepared for each parcel of land to be acquired. Standard formats for property descriptions, copies of which the SURVEYOR shall request to the ENGINEER and secure for all purposes of this Contract. Property descriptions shall include, but need not be limited to, the following items of information.

All property descriptions shall be signed and sealed by a Registered Professional Land Surveyor. The property description shall begin with a general description which shall include as a minimum:

a. State, County, and Survey within which the proposed parcel of land to be acquired is located.
b. A reference to unrecorded and recorded subdivisions by name, lot, block, and recording data to the extent applicable.
c. A reference by name to the grantor and grantee, date and recording data of the most current instrument(s) of conveyance describing the parent tract. Use execution dates in deed references as opposed to recording or filing dates. In any case, the property description shall make clear which date is being used.
The property description shall continue with a metes and bounds description which shall include as a minimum:
d. A point of commencing.
e. A point of beginning with the appropriate N and E surface coordinates.
f. A series of courses, identified by number and proceeding in a clockwise direction, describing the perimeter of the parcel of land to be acquired, and delineated with appropriate bearings, distances, and curve data.
Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance. Each course shall be identified either as a proposed right-of-way line, and existing right-of-way line, or a property line of the parent tract. Each property line of the parent tract shall be described with an appropriate adjoiner call.
g. A description of all monumentation set or found shall include, as a minimum, size and material.
h. A reference to the source of bearings, coordinates, and datum used.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

N/A NO 3.3.2. Parcel Plat:
A parcel plat shall be prepared for each parcel of land to be acquired. The STATE has developed standard formats for parcel plats, copies of which the SURVEYOR shall request from the ENGINEER and secure for all purposes in this Contract. Parcel plats shall include each and every item of information shown on the right-of-way map which concerns the individual parcel. All parcel plats shall be signed and sealed by a Registered Professional Land Surveyor.

Services Provided By: SURVEYOR	COUNTY	
		4. DELIVERABLES: In preparing right-of-way maps, the following is an outline of the work to be submitted (records should be delivered in a binder):
N/A	NO	4.1. An Abstract Map of the current record title holders included in the Preliminary Map showing the proposed schematic and existing right-of-way as per General Specifications.
N/A	NO	4.2. A Right-of-Way map for the project limits under cover of Title Sheet, Index Sheet, Control Data Sheet, and Exhibits of the property descriptions and parcel plats as per General Specifications.
N/A	NO	4.3. Appropriate monuments on the proposed right-of-way lines at intersecting property lines, and at all PCs, PTs, angle points, intersecting right-of-way lines of side streets, and at 1,000 foot stations.
N/A	NO	4.4. Appropriate monuments on the existing right-of-way lines in areas of no acquisition at all PCs, PTs, angle points, and 1,000 foot stations, and as directed by the ENGINEER.
N/A	NO	4.5. A SURVEYOR's report, outlining the approach, reasons or basis for the existing right-of-way determination, and conclusions made.
N/A	NO	4.6. Records used to establish ownership.
N/A	NO	4.7. ROW and parcel filed notes signed and sealed by a RPLS.
N/A	NO	4.8. Computation sheets of survey closures, ground surveys, etc. used to develop plats and meets and bound information.
N/A	NO	4.9. Items indicated under the Automation Requirements Section 6.
N/A	NO	4.10 Completed (Attached) Checklist with submittal of ROW Map etc.

5. GENERAL REQUIREMENTS:

For purposes of this Contract, the following general requirements shall apply:

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

5.1. Copies of instruments of record submitted to the ENGINEER shall be indexed by parcel number.

5.2. Coordinates appearing on right-of-way maps, on parcel plats, and in property descriptions shall be surface coordinates based on the Texas State Plane Coordinate System. The combined adjustment factors (sea level factor x scale factor) which have been developed by the STATE for its use are as follows:

5.2.1. In (List Applicable Counties): Counties (---------- Zone), grid coordinates are multiplied by a combined adjustment factor of 1.xxxxxx to obtain surface coordinates. For work in Counties other than those listed, the ENGINEER will provide the combine adjustment factor.

5.3. Line and curve tables may be used when necessary.

5.4. The number of centerline alignment stations to be shown on a single plan sheet shall be restricted to the extent necessary to allow approximately 4 inches between match lines and sheet borders for future details and notes.

5.5. A minimum 4 inch by 4 inch space shall be reserved at the bottom right corner of each map sheet for future revision notes.

Services
Provided By:
SURVEYOR COUNTY

6. AUTOMATION REQUIREMENTS:

In addition to standard hard copy plots and mylar copies, the following will be required electronically:

6.1. Right-of-way maps and parcel plats shall be prepared using a *Micro Station* software graphics system capable of producing graphics files that can be plotted and viewed without further modification or conversion using the State's *Micro Station V8* graphics system.

6.2. It is the intent of the ENGINEER to secure graphics files which have elements of equal integrity, singularity, and attributes as elements prepared using the State's *Micro Station V8* graphics system.

6.3. For purposes of clarity, consistency, and ease of utilization, the SURVEYOR shall request and secure standards relevant to right-of-way mapping to the extent necessary to ensure that the needs of the ENGINEER are met. This includes, but may not be limited to, TxDOT seed file and corresponding units.def file, TxDOT font resource file, TxDOT GEOPAK SMD file, TxDOT DGNLIB, associated cell libraries and custom line styles, and other files as deemed appropriate for the project.

6.4. Graphics files furnished to the ENGINEER by the SURVEYOR shall be submitted on a Compact Disk CD, DVD or USB, in a format compatible with the STATE's computer system. The SURVEYOR shall confer with the ENGINEER regarding acceptable media and formats before making submissions. The SURVEYOR shall request and secure a Consultant File Index form provided by the ENGINEER, to be completed by the SURVEYOR, and to be submitted to the ENGINEER along with the graphics files.

6.5. Property descriptions shall be prepared using a computer word processing system capable of producing data files readable using *Microsoft Office Word Version 2007* word processing software.

6.6. Data files furnished to the ENGINEER by the SURVEYOR shall be submitted in ACSII format on a CD, DVD or USB.

6.7. Provide to the ENGINEER electronic copies of all instruments of record required pursuant to a work authorization.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

7. GENERAL SPECIFICATIONS:

For purposes of this Contract, the following general specifications for right-of-way mapping shall apply:

7.1. Completed right-of-way maps shall be submitted to the ENGINEER on single or double matte mylar, 22 inches by 34 inches in size with a 21 inch by 32 inch printed border positioned ½ inch from the top, bottom, and right edge of the sheet. Two copies on 11 inch by 17 inch paper will also be supplied to the ENGINEER.

7.2. Parcel plats shall be submitted to the ENGINEER on 8 ½ inch by 11 inch bond paper with respective borders of 7 ½ inches by 10 inches, positioned ½ inch from the top, bottom, and right edge of the sheet. Match lines shall be used where more than one sheet is required.

7.3. Right-of-way maps shall be drawn to a scale of 1 inch = 50 feet. An appropriate scale other than 1 inch = 50 feet may be used on some proposed right-of-way projects upon prior approval by the ENGINEER.

Services
Provided By:
SURVEYOR COUNTY

7.4. Since right-of-way maps are reduced in size by one-half for archiving purposes, the smallest size lettering acceptable on a right-of-way map shall be 1/10 of one inch (Leroy #100). A right-of-way map which contains any lettering smaller than 1/10 of one inch will not be accepted by the ENGINEER.

7.5. Parcel plats shall be drawn to a preferred scale of 1 inch = 50 feet. An appropriate scale other than 1 inch = 50 feet may be used on some proposed right-of-way projects upon prior approval by the ENGINEER. In the case of a very large parcel which would be difficult to show with clarity on a single 8 ½ inch by 11 inch sheet, the SURVEYOR shall use multiple 8 ½ inch by 11 inch sheets with matching lines.

7.6. The smallest size lettering acceptable on a parcel plat shall be 0.06 of an inch (Leroy #60).

7.7. Property descriptions shall be submitted on 8 ½ inch by 11 inch bond paper.

7.8. The ENGINEER has encountered a number of mylar products which are considered unacceptable. The SURVEYOR shall confer with the ENGINEER regarding mylar products he intends to use which have not been previously used on State projects.

7.9. Zip-A-Tone or other similar stick-on products shall not be used on right-of-way maps or parcel plats.

8. ADHERENCE TO STANDARDS:

For purposes of clarity, consistency, and ease of understanding, the COUNTY, as an acquiring agency of private property for public use, has adopted the STATE standards and formats for right-of-way mapping which have proven to facilitate the processes of negotiation, appraisal, relocation assistance, and condemnation. It shall be the responsibility of the SURVEYOR to adhere to these standards and formats to every extent possible to ensure that the needs of the acquiring agency are met.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

SAMPLES ATTACHED FC 130:

- PRELIMINARY Right-of-Way Layout Abstract Map
- Right-of-Way Map, Field Notes, Parcel Sketches and Area Computation Sheets

ROW MAP CHECKLIST

Consultant: _____
Contract/WA# _____
Responsible Office: _____
Project Manager: _____
County: _____
Highway: _____
RCSJ: _____
CCSJ: _____

As the responsible consultant project manager, I hereby certify that the attached ROW Map has undergone a QA/QC review, with the following applicable items specifically checked for accuracy, completeness and constructability (as noted by Checkmarks)

_____
Signature Date

_____
Printed Name

(This Checklist must be signed by the RPLS and turned in with all proposed ROW Projects.

MAP:

General
___ All documents have been proofread and are accurate.
___ Title Commitments for each individual parcel.
___ Graphics files compatible with Micro station and Word software are provided.
___ Photos of proposed ROW staking included.
___ Field notes and Parcel Plats are numbered continuous.
___ Scale shall be 1"=50' or 1"=100".

Title Sheet Requirements
___ Title and description of project including county, limits, etc.
___ Vicinity map with beginning and ending station
___ Equations and Exceptions
___ Index
___ Legend
___ Title block completely filled out with Construction and R.O.W. CSJs'
___ List all Major Utilities from Station to Station

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

Individual Map Sheet Requirements
___ Sheet size 34" X 22"
___ Text legible when reduced to half-scale.
___ Title block completely filled out with R.O.W. CSJ
___ Matchlines
___ Project layout sheet
___ Existing utility lines and easements, deed reference, as shown on Schedule "B" of the Title Commitment, and defined on parcel plats

Existing information:
___ R.O.W. lines
___ Whole property or whole property inset
___ Roadways
___ Survey, county, and city limit lines shown and labeled
___ Improvements shown and labeled *(see below)*
___ Monumentation i.e. P.C., P.T., Break Points
___ North arrow
___ Scale
___ Property lines

___ Property descriptions i.e., lot, block, tract, subdivision, etc…
___ Identify existing and proposed access denial locations *(if applicable)*

Proposed information:
___ #5- 2-ft iron road set monumentation i.e. P.C., P.T., Break Points and 1000' stations at proposed ROW lines and where existing ROW line is the proposed ROW.
___ Survey and R.O.W. lines
___ Basis of bearings
___ Parcel bearings and distances correspond with traverse sheet
___ Outside ties (P.O.C.) corresponds with field notes
___ Point of beginning (P.O.B.) established on proposed R.O.W. line
___ Parcel tied to baseline
___ Baseline information shown i.e. Stationing, bearings, curve data, etc…
___ Conveyance information shown in tables i.e. parcel number, grantors name, amount of take, remainder etc.
___ Math checked on remainder

Improvements:
___ Improvements bisected or within 25' of proposed R.O.W. line are shown on map with stationing and distance from proposed R.O.W. line. Buildings are labeled and dimensioned.
___ Off-premise outdoor advertising signs within proposed R.O.W. are shown and labeled.

Utilities:
___ All utilities within or crossing existing and proposed right of way are shown and labeled as to size, easement or fee width, and recording data of instrument.
___ Location of underground storage tanks and/or filler caps are shown and labeled

FIELD NOTES - Heading
___ County
___ Highway
___ Parcel number
___ R.O.W. CSJ
___ Construction CSJ

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

General Description or "preamble"
___ Area of parcent to be acquired is shown in acreage (0.000) for rural land and/or square feet (to nearest whole sq. ft.) for urban land or smaller parcels
Parent tract data is shown:
___ Size of parent tract
___ Survey data or lot, block, and subdivision
___ Name of last recorded seller and buyer
___ Date, volume and page or document number of last recorded conveyance
___ Records and county of last recorded conveyance

Beginning Description
___ Point of commencement is on outside tie and is described accurately by bearings and distances as it leads to the point of beginning.
___ Point of beginning is on proposed R.O.W. line

Particular Description
___ Traverse calls are clockwise sequence
___ Bearings and distances correspond exactly with map, parcel sketch, and traverse sheet
___ Bearings are to nearest whole second and distances are to the nearest one-hundredth of a foot
___ Calls are numbered
___ Denial of access shall be described from beginning to end *(if applicable)*

Closing Description
___ Last call leads back to P.O.B.
___ Restates area of parcel

___ Establishes taking in existing road R.O.W. if applicable
___ Legal description is referenced to Plat
___ Sealed and signed
___ Include an access clause whether access is permitted or denied *(if applicable)*

PARCEL SKETCH:

___ Shows P.O.B. and P.O.C.
___ All data corresponds exactly with Map and Field Notes
___ Sheet size is no larger than 81/2" x 11"
___ Plat closely matches example provided
___ Plat referenced to legal description
___ Sealed and signed
___ Include an access clause whether access is permitted or denied *(if applicable)*
___ Existing utility lines and easements (deed reference, if available);

TRAVERSE SHEET

___ Computations show area to be acquired in sq. ft. or acres, whichever is applicable
___ Computations show area that is existing road R.O.W. if applicable
___ Traverse calls are in clockwise sequence
___ Error of closure meets the following:

Secondary rural	.0003
Primary rural - secondary urban	.0002
Urban or industrial	.00013

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

FIELD SURVEYING AND PHOTOGRAMMETRY

(Function Code 150)

Services Provided By:
ENGINEER COUNTY

B. DESIGN AND CONSTRUCTION SURVEYS:

1. PURPOSE:

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

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

2. DEFINITIONS:

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

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

3. WORK TO BE PERFORMED:

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

3.1. Design Surveys:

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

NO	N/A	3.1.1.	Obtain or collect data to create cross-sections and digital terrain models including any missing voids identified by the ENGINEER.
NO	N/A	3.1.2.	Locate all existing utilities, overhead and underground. Horizontally – the SURVEYOR shall call the 1-800 number for the utilities to be marked on the ground as well as any city water and sewer lines. He shall tie all visible utility crossings with name, address and Phone #'s of utility companies. The ENGINEER will coordinate with the utility companies and jointly the SURVEYOR and the ENGINEER will identify which utilities were missed and need to be tied down. Vertically – The ENGINEER shall identify all utilities that are potential conflicts and that need to be tied vertically and coordinate the exposure. The ENGINEER will advise the SURVEYOR in writing of the needed vertical ties and he will provide the required information to the ENGINEER promptly.
NO	N/A	3.1.3.	Locate topographical features and existing improvements.
NO	N/A	3.1.4.	Provide details of existing bridge structures. The SURVEYOR shall tie the top of deck and/or top of cap elevations at the Profile Grade Line (PGL) and the edges of slab at bent locations.
NO	N/A	3.1.5.	Provide details of existing drainage features, such as culverts, manholes, inlets, etc. The SURVEYOR will tie horizontally and vertically all existing storm drain systems that lie within the existing & proposed ROW including the elevation of the outfall of said recovered existing storm drain systems.
NO	N/A	3.1.6.	Profile and cross section intersecting streets for ties into project (500-ft. beyond the proposed ROW per schematic and 20-ft wider than the existing ROW of intersecting street).

Services Provided By: ENGINEER	COUNTY		
NO	N/A	3.1.7.	Cross section irrigation crossings for a distance of 20-ft beyond the proposed ROW at 100-ft intervals in a DTM file. Provide a complete description of irrigation appurtances as identified by the engineer sample layout. The SURVEYOR will meet with the ENGINEER before he ties down any irrigation lines. The ENGINEER will provide him the existing Irrigation District Maps and the A&M Data of existing irrigation lines that are identified of record. He will follow the sample given to him by the ENGINEER and tie the structures horizontally and vertically and include in the field books to be submitted.
NO	N/A	3.1.8.	Cross section and profile all outfall channels identified on the Hydrologic Map for a distance of 200-ft beyond the proposed ROW upstream and downstream at 100-ft intervals. The SURVEYOR will provide a complete 2D/3D File including utilities of the outfalls identified.
NO	N/A	3.1.9.	Inventory all driveways, commercial entrances, public roads and side streets separately. Obtain centerline station. (Width at ROW, PAV'T and existing radius. Inventory by type (dirt, caliche, gravel or paved). If paved, indicate condition in terms of no patches, has patches or has potholes. Obtain width at R.O.W. line. Obtain elevations at both edges of the driveway or turnout in line with the side drain.
NO	N/A	3.1.10.	Inventory signs, mailboxes, and large trees within the proposed ROW.
NO	N/A	3.1.11.	Locate wetlands.
NO	N/A	3.1.12.	Establish additional control points.
NO	N/A	3.1.13.	Locate existing right-of-ways.
NO	N/A	3.1.14.	Review right-of-way maps.
NO	N/A	3.1.15.	Locate borrow pits.
NO	N/A	3.1.16.	Perform hydrographic surveys.
NO	N/A	3.1.17.	Update existing control data and prepare survey control data sheets, as required by the Design Manual, signed by a Registered Professional Land Surveyor, for inclusion into a construction plan set.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

3.2. Construction Surveys:

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

NO	N/A	3.2.1.	Stake existing and/or proposed right-of-ways.
NO	N/A	3.2.2.	Stake existing and/or proposed baseline/centerline.
NO	N/A	3.2.3.	Stake proposed bridge structures.
NO	N/A	3.2.4.	Stake proposed drainage structures, such as manholes, culverts, etc.
NO	N/A	3.2.5.	Set grade stakes.
NO	N/A	3.2.6.	Recover and check existing control points.
NO	N/A	3.2.7.	Establish additional control points.
NO	N/A	3.2.8.	Check elevations and locations of structures.
NO	N/A	3.2.9.	Determine and resolve conflicts associated with survey data.

4. DELIVERABLES:

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

NO	N/A	4.1.	Digital Terrain Models (DTM) in a format acceptable by the ENGINEER.
NO	N/A	4.2.	Final H&V Field Book Binder with all pertinent information obtained in the field for Design Surveys. Maps, plans, or sketches prepared by the SURVEYOR showing the results of field surveys.

NO	N/A	4.3.	Computer printouts or other tabulations summarizing the results of field surveys.
NO	N/A	4.4.	Digital files or media acceptable by the ENGINEER containing field survey data.
NO	N/A	4.5.	Maps, plats, plans, sketches, or other documents acquired from utility companies, private corporations, or other public agencies, the contents of which are relevant to the survey.
NO	N/A	4.6.	Field survey notes, as electronic and/or hard copies.
NO	N/A	4.7.	An 8 ½ inch by 11 inch survey control data sheet for each construction control point which shall include, but need not be limited to, a location sketch, a physical description of the point including a minimum of two reference ties, surface coordinates, a surface adjustment factor, elevation, and the horizontal and vertical datums used. Survey control data sheets shall be signed and sealed by the supervising Registered Professional Land Surveyor.
NO	N/A	4.8.	Final mylar set of 11 inch by 17 inch Survey Control data sheets sign and seal by the RPLS per TxDOT guidelines.
NO	N/A	4.9.	A digital and/or hard copy of all computer printouts of horizontal and vertical conventional traverses, GPS analysis and results, data including property descriptions with field notes and plats, right-of-way maps, and survey control data sheets to include in the H&V Field Book Binder.
NO	N/A	4.10.	Survey reports in a format requested by the ENGINEER.
NO	N/A	4.11.	Items indicated under the Automation Requirements Section 6.

5. GENERAL REQUIREMENTS:

5.1. Design surveys and construction surveys shall be performed under the supervision of a Registered Professional Land Surveyor currently registered with the Texas Board of Professional Land Surveying.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

5.2. Horizontal ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the STATE.

Reference may be made to standards of accuracy for horizontal control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

5.3. Vertical ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the ENGINEER.

Reference may be made to standards of accuracy for vertical control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

5.4. Side shots or short traverse procedures used to determine horizontal and vertical locations shall meet the following criteria:

5.4.1. Side shots or short traverses shall begin and end on horizontal and vertical ground control as described above.

5.4.2. Standards, procedures, and equipment used shall be such that horizontal locations relative to the control may be reported within the following limits:

a. Bridges and other roadway structures: less than 0.1 of one foot.
b. Utilities and improvements: less than 0.2 of one foot.
c. Cross-sections and profiles: less than 1 foot.
d. Bore holes: less than 3 feet.

5.4.3. Standards, procedures, and equipment used shall be such that vertical locations relative to the control may be reported within the following limits:

a. Bridges and other roadway structures: less than 0.02 of one foot.
b. Utilities and improvements: less than 0.1 of one foot.
c. Cross-sections and profiles: less than 0.2 of one foot.
d. Bore holes: less than 0.5 of one foot.

6. AUTOMATION REQUIREMENTS:

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

6.2. Electronically collected and processed field survey data files shall be fully compatible with the State's *CADD* systems without further modification or conversion. All files shall incorporate only those feature codes currently being used by the STATE.

6.3. Digital Terrain Models (DTM) shall be fully compatible with the STATE's GEOPAK system without further modification or conversion. All DTM files shall be fully edited and rectified to provide a complete digital terrain model with all necessary break lines.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

ADDITIONAL RESPONSIBILITIES

A. TRAFFIC CONTROL:

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

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

B. INVOICING:

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

C. EASEMENTS, LETTERS OF PERMISSION, ETC.

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

D. MEETINGS:

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

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

E. PROJECT MANAGER/SURVEYOR COMMUNICATION:

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

F. OFFICE LOCATION:

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

ROADWAY DESIGN CONTROLS

(Function Code 160)

Services Provided By: ENGINEER	COUNTY	
		1. Geometric Design
YES	N/A	a. Horizontal and Vertical Alignment (Preliminary based on office surveys)
YES	N/A	b. Schematic Layout
		(1) The location of interchanges, main lanes, grade separations, frontage roads and ramps.
		(2) Develop vertical and horizontal alignment of main lanes, ramps and cross roads at proposed interchanges or grade separations. Frontage road alignment data need not be shown on the schematic; however, it should be developed in sufficient detail to determine ROW needs. The degree of horizontal curves and vertical curve data, including "K" values, shall also be shown for ease of checking.
		(3) For freeways, show the location and text of the proposed main lane guide signs. Lane lines and/or arrows indicating the number of lanes shall also be shown.
		(4) A complete explanation of the sequence and methods of stage construction, if proposed, including the initial and ultimate proposed treatment of crossovers and ramps.
		(5) The tentative ROW limits.
		(a) Provide a roadway Design System (RDS) or (GEOPAK) computer tape of the preliminary earthwork to verify ROW requirements.
		(b) Provide a graphics file containing the approved schematic.
		(6) The geometric (pavement cross slopes, lane and shoulder widths, slope rates for fills and cuts) of the typical sections of proposed highway main lanes, ramps, frontage roads, and cross roads.
		(7) The current and projected traffic volumes as provided by the TxDOT (20 year traffic projection, unless otherwise determined by the District Engineer).
		(8) The control of access lines if Interstate or designated under House Bill 179.
		(9) Direction of traffic flow on all roadways.
		(10) Location and width of median openings for highway without access control.
		(11) The geometric of speed change (acceleration, deceleration, climbing) lanes.
YES	N/A	2. General Guidelines for Project Development
		a. Prior to preparing detailed plans for a proposed project, a preliminary schematic layout shall be prepared which indicates the general geometric features and location requirements peculiar to the project. An uncontrolled aerial mosaic will be provided for this use. Four copies of the schematic layout shall be submitted through the district to the Design Division for approval and subsequent coordination with the Federal Highway Administration (FHWA) where applicable. The layout shall be submitted for two-lane arterial highway projects on new locations and for all multi-lane highway projects. **No geometric design is to be performed until the COUNTY has given the engineer written approval of the preliminary schematic layout.**
		b. All geometric design shall be in conformance with the State's Design Division, Operations and Procedures Manual, except where variances are permitted in writing by the STATE.
		c. The schematic layout shall include basic information which is necessary for the proper review and evaluation including the items listed above in the checklist for schematic layout.
		d. Handling of traffic during construction shall be a consideration in the development of preliminary designs.

Services Provided By: ENGINEER	COUNTY	
YES	N/A	2. General Guidelines for Project Development *(continued)* 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.**
N/A	N/A	3. Exhibit for Airway/Highway Clearance Permits
		4. Grading Design
NO	N/A	a. Refine the horizontal and vertical alignment of main lanes, frontage roads, ramps, cross roads and direct connectors based upon the approved schematic layout. Determine vertical clearances at grade separations and overpasses, taking into account the appropriate super elevation rate.
NO	N/A	b. Typical Sections
NO	N/A	c. Design Cross Sections
NO	N/A	d. Determine Cut and Fill Quantities
N/A	N/A	e. Slope Stability Analysis
N/A	N/A	f. Embankment Foundation Stability Analysis
N/A	N/A	g. Embankment Settlement Analysis
		5. Pavement Design
NO	N/A	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.
NO	N/A	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
		(1) Soil Core Holes (Show cost estimate with Function Code 110)
N/A	N/A	(a) Along center line
N/A	N/A	(b) Along center line of each roadway The location and minimum number of soil core holes required for this project are as follows: (To be determined when schematic is being completed)

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

Services Provided By: ENGINEER	COUNTY	
		5. Pavement Design *(continued)*
		c. Embankment and Subgrade *(continued)*
NO	N/A	(2) Identify,interpret and summarize geologic features that affect engineering design (PI, Sulfate content, % of lime)
NO	N/A	d. Traffic Data for Pavement Design by STATE
NO	N/A	e. Basic Design Criteria
NO	N/A	f. Life Cycle Cost Analysis(es)
NO	N/A	g. Cost Data
NO	N/A	h. Pavement Material Properties
NO	N/A	i. Rehabilitation Investigations
NO	N/A	(1) Core Hole Survey (Show cost estimate with Function Code 110)
		(a) Determine type and depth of existing material, pavement, etc. The Engineer will determine whether to salvage ACP and FLEXBASE as well as their properties and provide this information to TxDOT.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

DRAINAGE
(Function Code 161)

Services Provided By: ENGINEER	COUNTY	
		All hydraulic design shall be in accordance with the TxDOT's Hydraulic Manual, except where variances are permitted in writing by the COUNTY.
		1. Hydrologic Studies, Discharges
YES	N/A	a. Drainage area maps showing existing conditions and proposed improvements of outfalls.
YES	N/A	b. Hydrologic data/discharge determination
		2. Hydraulic Drainage Study and Documentation
		a. Hydraulic computations
NO	N/A	(1) Storm water detention available within the ROW (linear ft. along side drain ditch).
NO	N/A	(2) Storm water detention required outside the ROW (as per HCDD#1)
NO	N/A	(3) Culverts
NO	N/A	(4) Bridge waterways
NO	N/A	(5) Channels
NO	N/A	(6) Storm sewers/inlets
NO	N/A	(7) Pump stations
NO	N/A	(8) Storm Water Management facilities
NO	N/A	(9) Other
		(a) Irrigation Canals/Siphons
NO	N/A	b. Hydraulic report(s)
NO	N/A	c. Federal Emergency Management Agency (FEMA) floodway requirements
NO	N/A	d. Determine impact of proposed drainage plan on the following receiving stream(s)
		(1) Hidalgo County Drainage District Outfalls
		(2) All Irrigation District Outfalls Impacted
		3. Layout, Structural Design and Detailing of Drainage Features
		a. Culverts
NO	N/A	(1) New culverts
NO	N/A	(2) Culvert widening and/or lengthening
NO	N/A	(3) Culvert replacements
		b. Storm sewers
NO	N/A	(1) New storm sewers
NO	N/A	(2) Modify existing storm sewers
NO	N/A	(3) Inlets
NO	N/A	(4) Manholes
NO	N/A	(5) Trunk lines
NO	N/A	c. Pump stations
NO	N/A	d. Subsurface drainage at retaining walls
NO	N/A	e. Outfall channel(s) within the ROW
NO	N/A	f. Outfall channel(s) outside the ROW
NO	N/A	g. Detention Pond(s) within the ROW
NO	N/A	h. Detention Pond(s) outside the ROW
NO	N/A	i. Summary of Quantities
NO	N/A	j. Storm Water Management facilities
NO	N/A	4. Storm Water Pollution Prevention Plan (SW3P)
NO	N/A	5. Scour Evaluation - Waterway Structures only (to be completed by Bridge Engineer under FC 170.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

SIGNING, MARKINGS AND SIGNALIZATION

(Function Code 162)

Services Provided By: ENGINEER	COUNTY		
NO	N/A	1.	Signing and Markings Layout

a. Requirements (Separate Layout)
   (1) Roadway layout
   (2) Center line with station numbering
   (3) ROW lines
   (4) Culverts and other structures that present a hazard to traffic
   (5) Location of utilities, if not shown on plan and profile
   (6) Existing signs to remain, to be removed, to be relocated
   (7) Proposed signs (illustrated and numbered)
   (8) Existing overhead sign bridges to remain, to be revised, removed or relocated
   (9) Proposed overhead sign bridges indicating location by plan layout (electrical details need not be shown on this layout)
   (10) Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation
   (12) Quantities of existing pavement markings to be removed
   (13) Proposed delineators and object markers

b. For projects involving freeway to freeway or other types of directional interchanges, projects including left-hand ramps or connections, the following information must be provided:
   (1) The location of interchanges, main lanes, grade separations, frontage roads and ramps
   (2) complete explanation of the sequence and methods of stage construction, where applicable, which would include the initial and ultimate proposed treatment of crossovers and ramps
   (3) The number of lanes in each section of proposed highway and the location of changes in numbers of lanes
   (4) The projected traffic volumes as provided by the STATE (20 year traffic projection unless otherwise determined by the District Engineer)
   (5) Tentative ROW limits
   (6) Direction of traffic flow on all roadways
   (7) Main lane, ramp, frontage road, and necessary cross road profiles at proposed interchanges or grade separations

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

NO	N/A	2.	Summary of Small Signs Tabulation
NO	N/A	3.	Summary of Large Signs Tabulation including all Guide Signs
NO	N/A	4.	Sign Detail Sheets

a. All signs except route markers
b. Design details for large guide signs
c. Dimensions of letters, shields, borders, corner radii etc.
d. Designation of shields attached to guide signs
e. Designation of arrow used on exit direction signs

Services Provided By: ENGINEER	COUNTY	
		5. Traffic Signals
		a. Development of Justification (Warrant) Data
NO	N/A	(1) Location Map Relationship of proposed installation to other traffic signals, highways, business areas and traffic generators
NO	N/A	(2) Photographs as appropriate
NO	N/A	(3) Accident data as appropriate
		(4) Vehicle volumes (provided by TxDOT)
N/A	N/A	(a) Existing
N/A	N/A	(b) Estimated
N/A	N/A	(c) Projected
N/A	N/A	(d) Pedestrian
N/A	N/A	(5) Traffic Survey - Count Analysis
N/A	N/A	(6) Recommendation based on above data
NO	N/A	b. Layout
		(1) Title Sheet (when applicable)
		(a) Describe the location
		(b) Type of installation
		(c) Area map with project limits for each location
		(d) Index of sheets
		(e) Space for official signatures
		(2) Estimate and quantity sheet (when applicable)
		(a) List of all bid items
		(b) Bid item quantities
		(c) Specification item number
		(d) Paid item description and unit of measure
		(3) Basis of estimate sheet (list of materials)
		(4) General notes and specification data sheet
		(5) Condition diagram
		(a) Highway and intersection design features
		(b) Roadside development
		(c) Traffic control including illumination
		(6) Plan sheet(s)
		(a) Existing traffic control that will remain (signs and markings)
		(b) Existing utilities
		(c) Proposed highway improvements
		(d) Proposed installation
		(e) Proposed additional traffic controls
		(f) When applicable, proposed conduit for Railroad interconnect with standard details for runs under tracks.
		(g) Proposed illumination attached to signal poles.
		(7) Notes for plan layout
		(8) Elevation sheet(s) (span wire design)
		(9) Phase sequence diagram(s)
		(a) Signal locations
		(b) Signal indications
		(c) Phase diagram
		(d) Signal sequence table
		(e) Flashing operation (normal and emergency)
		(f) Preemption operation (when applicable)
		(g) Interval timing, cycle length and offset

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

Services Provided By: ENGINEER	COUNTY	
		5. Traffic Signals *(continued)*
NO	N/A	b. Layout *(continued)*
		(10) Construction detail sheets(s)
		(a) Poles (TxDOT standard sheets)
		(b) Detectors
		(c) Pull Box and conduit layout
		(d) Controller Foundation standard sheet
		(11) Marking details (when applicable)
		(12) Barricade and warning sign standard sheet and any special details for work zone traffic control for special conditions
		(13) Aerial or underground interconnect details (when applicable)
		c. General Requirements
		(1) Contact local utility company
NO	N/A	(a) Confirm power source
NO	N/A	(b) Discuss route of aerial or underground interconnect cable (when applicable)
N/A	N/A	(c) Adjustment of overhead utility lines
NO	N/A	(2) Prepare governing specifications and special provisions list
NO	N/A	(3) Prepare project estimate
NO	N/A	d. Summary of Quantities

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

MISCELLANEOUS (ROADWAY)

(Function Code 163)

Services Provided By: ENGINEER	COUNTY	
		1. Retaining Walls
		a. Structural Details
N/A	N/A	(1) Cast-in-Place Cantilever at _____ locations. (TxDOT Standard Retaining Wall)*
N/A	N/A	(2) Tiedback Retaining Wall at _____ location. (TxDOT standard retaining wall)
N/A	N/A	(3) Specialized Retaining Wall at _____ locations (Unique Design).*
		b. Alternate Patented Retaining Walls at all locations. (Layouts Only)**
N/A	N/A	(1) Mechanically Stabilized Earth
N/A	N/A	(2) Concrete Block Wall Systems
N/A	N/A	c. Retaining Wall Layout (PLAN)
		(1) Designation of reference line
		(2) Beginning and ending retaining wall stations
		(3) Station of each retaining wall joint***
		(4) Offset from reference line
		(5) Horizontal curve data
		(6) Number of retaining wall panels and lengths***
		(7) Total length of wall
		(8) Indicate face of wall
		(9) All wall dimensions and alignment relations (alignment data as necessary)
		(10) Soil core hole locations
N/A	N/A	d. Retaining Wall Layout (ELEVATION)
		(1) Top of wall elevations at each joint or intervals***
		(2) Existing and finished ground line elevations
		(3) Height of stem at each joint***
		(4) Wall panel designations***
		(5) Top of footing elevations***
		(6) Limits of measurement for payment***
		(7) Type, limits and anchorage details of railing (If applicable)
		(8) Top and bottom of wall profiles and soil core hole data plotted at correct station and elevation. The plot shall be at the same scale as the wall profile. Ground water elevations and the observation date shall be shown.
N/A	N/A	e. Foundation Studies (Show cost estimate with Function Code 110)
N/A	N/A	(1) The soil core holes shall be obtained at approximately 200 foot intervals along retaining wall alignments. The core holes shall extend 25 feet below the footing elevation.
N/A	N/A	f. Stability Analysis (the ENGINEER shall estimate this task as part of his bid to complete the work).
N/A	N/A	g. Estimate
N/A	N/A	h. Summary of Quantities
N/A	N/A	i. Typical X-section.
N/A	N/A	j. General Guidelines for Retaining Walls
		(1) The ENGINEER shall make final design calculations and final detail drawings in accordance with standard requirements of the Texas Department of Transportation. **The designer and checker shall check all calculations and initial each page.**
		(2) The ground water level should be observed at the water strike.
		(3) For purposes of uniformity statewide, soil core hole data shall be shown on layouts as illustrated in the Bridges and Structures Foundation Exploration and Design Manual.
		(4) Foundation exploration shall conform to the requirements set forth in Administrative Circular No. 25-84, Administrative Circular 33-87 and Administrative Circular No. 25-92.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

Services Provided By: ENGINEER	COUNTY	
NO	N/A	2. Traffic Control Plan, Detours and Sequence of Construction Traffic Control Plans (TCP) are required for all projects. A detailed TCP shall be developed when traffic handling during construction involves complications for which a feasible solution is not covered by the Texas MUTCD or the current Barricade and Construction (BC) Standards. The following items are required on all Traffic Control Plan Layouts: a. The sequence of construction and method of handling traffic during each phase. b. The existing and proposed traffic control devices that will be used to handle traffic during each construction sequence. Include signals, regulatory signs, warning signs, construction warning signs, guide signs, route markers, construction pavement markings, channelizing devices, portable changeable message signs, flashing arrow boards, barricades, barriers, etc. c. The proposed traffic control devices (stop signs, signals, flag person, etc.) at grade intersections during each construction sequence. d. Where detours are provided, typical cross sections shall be shown. e. Road construction work hours shall be developed after an investigation of the traffic volumes has been performed.
		3. Illumination
N/A	N/A	a. Preliminary Roadway Illumination Layout and Circuit Layout (1) For projects involving freeway to freeway or other types of directional interchanges and projects including left-hand ramps or connections, provide the following: (a) The location of interchanges, main lanes, grade separations, frontage roads and ramps (b) A complete explanation of the sequence and methods of stage construction, where applicable, which would include the initial and ultimate proposed treatment of crossovers and ramps (c) The number of lanes in each section of proposed highway and the location of changes in the number of lanes (d) The projected traffic volumes as provided by the STATE (20 year traffic projection unless otherwise determined by the district engineer) (e) Tentative ROW limits (f) Direction of traffic flow on all roadways (g) Main lane, ramp, frontage road, and necessary cross road profiles at proposed interchanges or grade separations
N/A	N/A	b. Final Roadway Illumination and Electrical Circuit Layouts (1) Roadway layout showing pavement edges, shoulders, curbs, retaining walls, etc. (2) Center line with station numbering. (3) ROW lines. (4) Symbol legend. Use department standard symbols for lighting and electrical. (5) Culverts and other structures that present a hazard to traffic. (6) Location of underground utilities, if not shown on plan profile. (7) Location of overhead electrical lines, both crossing and parallel to ROW. (8) Existing sign lighting circuits and roadway illumination to remain, to be removed, to be relocated. (9) Existing service poles, electrical circuits, ground boxes, etc. (10) Contact electric utility for service pole locations, voltage characteristics. (11) Location of proposed sign lighting circuits and roadway illumination. (12) Proposed electrical circuits. (13) Tabulation of all quantities including proposed, existing to be relocated, existing to be removed. The layout sheet quantities and lighting summary shall be shown. Tabulations to include estimated quantity with a column for final quantities.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

Services Provided By: ENGINEER	COUNTY	
		3. Illumination *(continued)*
N/A	N/A	c. General Guidelines for Illumination (If applicable) The ENGINEER shall submit to the COUNTY, well in advance of PS&E due date, the roadway illumination and electrical circuit layout sheets for review by the STATE. Two copies of the layout sheets are to be submitted. One copy will be returned to the Engineer showing corrections that are to be made by the ENGINEER. When final plan submission is made, the ENGINEER shall provide a written statement regarding completion of the corrections.
		4. Miscellaneous Drafting/Standards
NO	N/A	a. Erosion Control
N/A	N/A	b. Landscape Development
NO	N/A	5. Compute and Tabulate Quantities
NO	N/A	6. Special Utility Details (Irrigation lines)
		7. Miscellaneous Structures
		a. Type of Structure*
		(1) Overhead Sign Bridges (O.S.B.) Modifications or special O.S.B. designs shall be prepared using the same design assumptions that are used for the standard O.S.B structures.
N/A	N/A	(a) New O.S.B. structure(s)
N/A	N/A	(b) Structural evaluation of existing O.S.B. structure(s) that are to remain in place or to be relocated.
N/A	N/A	(2) High Mast Illumination Poles (HMIP)
N/A	N/A	(3) Traffic Signal Supports
N/A	N/A	(4) Conventional Illumination Poles
N/A	N/A	(5) Sound Barrier Walls
N/A	N/A	b. Checklist for Layouts
		(1) Reference appropriate S.B. standard
		(2) Drilled shaft size and length
		(3) Soil strength used for design {indicate basis and boring(s) used}
		(4) Design height
		(5) Tower heights
		(6) Leg spacings
		(7) Design wind speed
N/A	N/A	c. Foundation Studies (Show cost estimate with Function Code 110) The soils exploration requirements for miscellaneous structures on this project are as follows: (To be provided by the Engineer on an as-needed basis)
		8. Agreements
N/A	N/A	a. Utility Agreements
N/A	N/A	b. Exhibits for Utility Agreements
N/A	N/A	c. Railroad Agreements
		d. Railroad Exhibits
N/A	N/A	(1) Railroad Underpasses
N/A	N/A	(2) Railroad Overpasses
N/A	N/A	(3) Railroad Grade Crossing (Replanking)
N/A	N/A	(4) Railroad Grade Crossing Warning Systems (Signals)
N/A	N/A	(5) Other Miscellaneous Sketches for Railroads
N/A	N/A	e. Traffic Signal Agreements
N/A	N/A	f. Exhibits for Traffic Signal Agreements
N/A	N/A	9. Estimate
N/A	N/A	10. Specifications and General Notes

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

BRIDGE DESIGN
(Function Code 170)

Services Provided By: ENGINEER	COUNTY		NUMBER REQUIRED
		1. Preparation of Structural Details	
		a. New Structure(s)	
N/A	N/A	(1) Underpass(es)	
N/A	N/A	(2) Overpass(es)	
N/A	N/A	(3) Main Lanes	____
N/A	N/A	(4) Direct Connector(s)	____
N/A	N/A	(5) Ramp Bridge(s)	____
N/A	N/A	(6) Waterway Structure(s)**	____
N/A	N/A	(7) Pedestrian Structure(s)	____
N/A	N/A	(8) Utility Structure(s)	____
N/A	N/A	(9) Railroad Underpass(es)	____
N/A	N/A	(10) Railroad Overpass(es)	____
N/A	N/A	(11) Bridge Classification Culvert(s)**	____
N/A	N/A	(11) Alternate Structural Designs	____
N/A	N/A	(12) Alternate Foundation Design	____
		Total New Structures =	
		b. Existing Structure(s)	____
N/A	N/A	(1) Bridge Widening, Rehabilitation and/or Modification of Existing Structure(s)	
N/A	N/A	(2) Bridge Replacement	____
N/A	N/A	(3) Raising Bridge Elevation	____
N/A	N/A	(4) Bridge Classification Culvert(s)	
		Widening and/or Modification of Existing Structures(s)	____
N/A	N/A	(5) Railroad Overpass(es)	____
N/A	N/A	(6) Railroad Underpass(es)	____
		Total Existing Structures =	____

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

* Contour plots of bridge gores are required for projects involving ramps within the main bridge in order to ensure project transition. The Template data and vertical alignment necessary to generate the contour plots are also required.

** In the early stages of a project, it sometimes cannot be determined whether a Waterway Bridge Structure or a Bridge Classification Culvert (20' minimum length) will be required. Therefore, the ENGINEER should be aware that either of these two types of bridges may be reclassified later in the project for the other type when more information is known that would dictate a change in structure classification.

Services Provided By: ENGINEER	COUNTY	
N/A	N/A	2. Preparation of Bridge Layouts (each bridge)

a. Bridge Layouts (PLAN)
   (1) Horizontal curve information or bearing of centerline.
   (2) Including horizontal, vertical, and template information of all roadways or railroads crossed.
   (3) Bearing of center line or reference line.
   (4) Skew angle(s).
   (5) Slope for header banks and approach fills.
   (6) Control stations at beginning and ending of bridge (with deck elevation), intersections, etc.
   (7) Approach pavement and crown width.
   (8) Bridge roadway width and curbs, face of rail, shoulders, or sidewalks.
   (9) Approach slab and curb returns.
   (10) Limits and type of riprap.
   (11) Proposed features under structure.
   (12) Location of profile grade line.
   (13) North arrow.
   (14) Typical bridge roadway section including preliminary proposed beam types and spacings.
   (15) Cross slope and super elevation data.
   (16) Minimum horizontal clearances when applicable.
      (a) Dimensions to features that control clearances. (Calculate and indicate points of minimum vertical and horizontal clearances.
   (17) Location of soil core holes (station and offset), shown on layout.
   (18) Bent stations and bearings.
   (19) Retaining wall locations.
   (20) Traffic flow directional arrows.
   (21) Railing types shown.
   (22) Joint types and seal size, if used.
   (23) Beam line numbers consistent with span details.
   (24) Critical horizontal clearances (location of railroad tracks, nearby structures and utilities).
   (25) Bearings of utilities.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

b. Bridge Layouts (ELEVATION)
   (1) Type of foundation.
   (2) Finished grade elevations at beginning and end of bridge.
   (3) Overall length of structure.
   (4) Length, type of spans and units.
   (5) Type of railing.
   (6) Minimum calculated vertical clearance(s).
   (7) Existing and proposed ground lines clearly marked.
   (8) Grid elevations and stations.
   (9) Bent numbers encircled.
   (10) Stationing of bridge compatible with grid stations.
   (11) Standard title.
   (12) Profile grade data.
   (13) Type of riprap.
   (14) Soil Core Hole information with penetrometer test data shall be shown on the bridge layout at correct station, elevation and scale.
   (15) Fixed/expansion condition of all bents.
   (16) Column "H" heights.
   (17) Number, size and length of foundations.

Services Provided By: ENGINEER	COUNTY	
N/A	N/A	2. Preparation of Bridge Layouts (each bridge) *(continued)* c. Additional layout requirements for waterway structures and bridge classification culverts. (1) Design and 100-year peak discharges. (2) Design and 100-year high water (HW) (Recorded HW and date if available) (3) Natural and through-bridge velocities for design and 100-year floods. (4) Calculated backwater for design and 100-year floods. (5) Direction of flow for waterway crossings. (6) Contours for water crossing.
N/A	N/A	3. Bridge Classification Culvert, Estimate, Quantities, and Specifications (each bridge)
N/A	N/A	4. Foundation Studies (Show cost estimate with Function Code 110) The minimum number of soil core holes shall be obtained in accordance with Section 1-301 of the Bridges and Structures Foundation Exploration and Design Manual. Soil core holes shall be obtained at approximately (300 foot) intervals along bridge alignments. Texas cone penetrometer (TCP) tests shall be conducted in all soil types encountered at a maximum of (10 foot) intervals. If single column bents with single drilled shafts are planned, TCP values should be taken at close intervals in the upper (15 feet).
N/A	N/A	5. Bridge Total Quantities and Cost Estimates (each bridge)
N/A	N/A	6. Bridge Special Provisions and Specifications (each bridge)
N/A	N/A	7. Bearing seat elevations for each beam or girder. Top of cap elevations for non-beam type structures.
N/A	N/A	8. General Guidelines for Bridge Design a. The ENGINEER shall prepare a bridge layout of each bridge structure for Company's review and approval. The bridge layout shall be in conformance with the Bridges and Structures, Operation and Planning Manual and the Bridges and Structures, Detailing Manual. Soil core hole data is not required for submission of the preliminary bridge layout. **No bridge design work is to be performed until the COUNTY has given the engineer written approval of the preliminary bridge layout.**

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

Several months may be required, after the preliminary bridge layout is submitted, for the district to obtain approval and/or permits from the following:

- TxDOT Design Division, when applicable:
  - Railroad Companies
  - FHWA
  - U.S. Army Corps of Engineers
  - U.S. Coast Guard
  - Bureau of Reclamation
  - Texas Parks and Wildlife
  - Others

Therefore, the bridge layout should be submitted at the earliest possible date and the ENGINEER's design schedule should reflect this.

b. All bridge superstructure and substructure design will be reviewed by the Design Division for purposes of verifying structural integrity and optimization of design.

c. The final bridge layout shall be in conformance with the Bridges and Structures, Operation and Planning Manual and the Bridges and Structures Detailing Manual.

Services
Provided By:
ENGINEER COUNTY

8. General Guidelines for Bridge Design *(continued)*

d. The ENGINEER shall make final design calculations and final detail drawings in accordance with standard requirements of the Texas Department of Transportation. All bridge design shall be in conformance with the Texas Department of Transportation Bridges and Structures Operation and Planning Manual, the current American Association of State Highway and Transportation Officials or American Railway Engineers Association Specifications for railway structures, Standard Specifications for Highway Bridges, including applicable interim specifications, and the Bridges and Structures, Foundation Exploration and Design Manual. The ENGINEER shall furnish design calculations to the Design Division. **The designer and checker shall check all calculations and initial each page.**

e. Structural steel or prestressed concrete shop drawings, form work drawings and false work drawings are not part of the design requirements. However, contract plans shall be in sufficient detail to permit the preparation of complete shop details for fabrication and erection.

f. Elements of the bridge (abutments, bents, slabs, etc.) shall be detailed to a metric scale of 1:20 (1/2 inch equals one foot architect scale) or 1:50 (1/4 inch equals one foot architect scale) to provide clear legible drawings when the drawings are reduced. Lettering shall be a minimum size of 4 millimeters (5/32 inch) height for hand lettering and 140 for lettering by computer-aided design and drafting (CADD).

g. Standard drawings for beams, diaframs, railings, armor joints, riprap, etc., shall be furnished to the ENGINEER upon request. These standards shall not be redrawn by the ENGINEER nor shall his title block be transferred to the standard drawings. Modifications to the standards, if necessary, shall be clearly identified and designated by "MOD" in the standard title. Specific special drawings prepared by the ENGINEER shall not be identified as standards.

h. Bridge layout sheets shall have the same vertical and horizontal scale. Usually a metric scale of 1:100 (1 inch = 10 feet) or 1:200 (1 inch = 20 feet) is used. Sections of existing and proposed structures usually have a metric scale of 1:50 (1 inch = 5 feet). Soil core holes shall be positioned and labeled on the bridge layout plan view. The core hole data shall be plotted at the correct station, at the same vertical scale, and at the proper elevation unless otherwise approved by the Design Division.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

i. APPENDIX C, "GENERAL PLAN CHECKLIST", on pages C-1 thru C-5, more specifically relates various sheet types, details, summaries, standards, etc.

j. For purposes of uniformity statewide, soil core hole data shall be shown on layouts as illustrated in the Bridges and Structures Foundation Exploration and Design Manual.

k. Geometry and structural design errors found after acceptance of bridge plans shall be promptly corrected by the consultant at no cost to the Company.

CONSTRUCTION PHASE SERVICES
(Function Code 320)

Services Provided By: ENGINEER	COUNTY	
N/A	N/A	**CONSTRUCTION MANAGEMENT SERVICES:**

The ENGINEER will provide engineering, geotechnical testing and support services for and during the construction of the Project or portions of the Project approved by the COUNTY. Specific (basic and special) services for CONSTRUCTION MANAGEMENT AND SUPPORT by the ENGINEER will include the following:

Construction Bidding:

1) The ENGINEER will furnish the COUNTY the necessary copies of approved plans, specifications, notices to bidders, and proposals as prepared under PS&E.

2) The ENGINEER will assist the COUNTY on the tabulation of bids, recommendations to the Owner as to the proper action on all bid proposals received, and the preparation of formal contract documents for the award of each construction contract.

Construction Contract Administration and Inspection:

3) In general, the ENGINEER will provide the management and engineering support/data required for consultation and advisement to the COUNTY and act as the COUNTY's representative as provided in the General Condition of the Construction Contract.

4) The ENGINEER will coordinate and conduct a pre-construction conference (if required).

5) Defects and Deficiencies. The ENGINEER will use his best efforts to protect the COUNTY against defects and deficiencies in the work of the Contractor. The ENGINEER will promptly notify the COUNTY of any such defect or deficiency, and take all steps possible to require the Contractor to correct the defect or deficiency.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

6) Contractor Payment. The ENGINEER will review quantities as submitted by the Contractor and will coordinate with the COUNTY for the preparation of the monthly and final estimates for payment to the Contractor.

7) The ENGINEER will provide Project site inspection of the authorized construction contract as follows:

   a) Project Engineer. The ENGINEER will provide visits by the Project Engineer or a competent representative of the ENGINEER to the site of construction for the purpose of monitoring the Contractor's progress and conformance to the construction contract plans and specifications.

   b) Resident Engineer and/or Construction Inspector(s). The ENGINEER will furnish the services of a Resident Engineer and/or Construction Inspector(s) for on the site inspection construction to monitor/inspect the Contractor's daily progress and conformance to TxDOT's PS&E specifications.

Miscellaneous Technical Activities:

8) Shop Drawings. The ENGINEER will review and check all shop or working drawings furnished by the Contractor.

9) Control of Materials & Equipment. The ENGINEER will provide inspection of all materials and equipment furnished/used by the Contractor as follows:

   a) Review and record all laboratory, shop and mill tests of materials and equipment for compliance with the construction contract specifications.

   b) Observe and/or perform Project record testing and/or independent assurance testing as outlined in the construction contract specifications.

10) Change Orders. When applicable the ENGINEER will prepare the engineering data, including plan sheet drawings, specifications, and estimates, for the preparation of construction contract change orders, which may be required due to actual field conditions encountered or new requirements directed by the COUNTY.

11) As Built Drawings. The ENGINEER will develop as built drawings to depict the work as actually constructed. The COUNTY will be furnished five (5) set of prints.

N/A N/A **CONSTRUCTION MATERIAL TESTING:**

The ENGINEER will provide the COUNTY with construction material testing services for the Project. The services to be provided include sampling and testing of all construction materials as required by the project plans and specifications. All sampling frequencies and test procedures will be performed in general accordance with the Texas Department of Transportation TEX methods (or ASTM methods as required) as outlined in the Guide Schedule for Sampling and Testing (11/07). The construction material testing includes, but is not limited to the following:

(a) Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.
(b) Field density testing of soils and base materials to ensure proper compaction as required by project plans and specifications.
(c) Field sampling and testing of fresh concrete and laboratory testing of hardened concrete to determine compliance with project plans and specifications.
(d) Field compaction testing of asphalt to ensure proper compaction during lay down operations.
(e) Field inspection, sampling and laboratory testing of asphalt materials to determine their material properties and their compliance with project plans and specifications.
(f) The ENGINEER will be responsible for concrete batching as well as the asphalt testing at the plants to insure delivery of acceptable material to the job site.
(g) Any additional laboratory testing as required/requested by the COUNTY and the project plans and specifications.
(h) Providing accurate and timely reports to the COUNTY and all/other recipients as designated by the COUNTY.
(i) The ENGINEER will verify the concrete and asphalt designs to assure it is in accordance with TxDOT specifications to be developed by the contractor.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

FC 600 – ACQUISITION PROVIDER SERVICES
(for EST. 0 PARCELS, 0 EASEMENTS AND 0 RELOCATIONS/DISPLACEMENTS)

(Services to be provided by L&G Engineering)

Services Provided By: ENGINEER	COUNTY	
		1) PROJECT ADMINISTRATION
N/A	N/A	a) Negotiation of Scope of Services for Work Authorization i) Acquisition Provider will visit project site with COUNTY personnel if necessary.
N/A	N/A	b) Project Presence at L&G Consultant Office Headquarters i) Full Project Office (1) No Joint Use of COUNTY or TxDOT facilities (2) Open during normal COUNTY and State work hours (3) Personnel available to answer questions (4) Availability of Project Files (5) At least one office staff member is required to be a current commissioned notary public.
N/A	N/A	c) Overhead Costs i) Administrative costs
N/A	N/A	d) Communication i) Provide monthly progress reports with invoice. ii) Participate in project review meetings as determined by the COUNTY. iii) Prepare initial property owner contact list for use by the COUNTY in distribution of Acquisition Provider introduction letters.
N/A	N/A	e) File Management i) Project and parcel files will be kept in the COUNTY's Office, if necessary. Working files will be kept in the Acquisition Provider's project administrative office, but documents generated or received by the Acquisition Provider will be forwarded to the COUNTY office as they are generated or received by the Acquisition Provider, if necessary. ii) Prepare payment transmittal request utilizing standard payment submissions forms with supporting documentation. iii) Maintain records of all payments including check number, amount, and date paid, etc. iv) Provide copies of all incoming and outgoing correspondence as generated if requested by COUNTY at provider conference. v) Maintain copies of all correspondence and contacts with property owners.
		2) TITLE SERVICES
N/A	N/A	a) Secure preliminary title commitments from the Title Company that will be providing title insurance. Cost of preliminary title commitments will be paid by the Acquisition Provider (if requested by the title company) and will be included in the Acquisition Provider's scope of work for payment and paid as a separate item.
N/A	N/A	b) Secure title commitment updates in accordance with insurance rules and requirements for parcel payment submissions. Cost of title commitment updates will be paid by the Acquisition Provider (if requested by the title company) and will be included in the Acquisition Provider's scope of work and paid as a separate item.
N/A	N/A	c) Secure title insurance for all parcels acquired, insuring acceptable title to COUNTY OF HIDALGO. Written approval by the COUNTY required for any exception.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

Services Provided By: ENGINEER	COUNTY	
		3) APPRAISAL
N/A	N/A	a) Appraiser may be selected from TxDOT's list of state approved fee appraisers. This list will be available for review at all District offices or at the Right of Way Division Office at 118 E. Riverside Drive, Austin, Texas, upon request.
N/A	N/A	b) Secure written permission (if necessary) from the owner to enter the property from which land is to be acquired. If the Acquisition Provider and/or the fee appraiser, after diligent effort, is unable to secure the necessary letter of permission from the property owner, a waiver must be obtained, in writing from the COUNTY/TxDOT. Maintain permission letters with appraisal reports.
N/A	N/A	c) Prepare (if necessary) pre-appraisal contact with interest owner(s) for each parcel using acceptable COUNTY/TxDOT forms.
N/A	N/A	d) Contact property owners or their designated representative to offer opportunity to accompany the appraiser on the appraiser's inspection of subject property. Maintain record of contact in file.
N/A	N/A	e) Prepare complete appraisal report for each parcel to be acquired utilizing TxDOT Forms No. ROW-A-5 and ROW-A-6 as applicable. These reports shall conform to TxDOT/COUNTY policies and procedures along with the Uniform Standards of Professional Appraisal Practices.
N/A	N/A	f) As necessary, prepare written notification to COUNTY/TxDOT of any environmental concerns associated with the right of way to be acquired which could require environmental remediation.
N/A	N/A	g) All completed appraisals will be administratively reviewed by L&G Engineering ROW Office and recommended for approval by TxDOT.
N/A	N/A	h) As necessary, the appraiser will appear and or testify as an Expert Witness in eminent domain proceedings and be available for pre-hearing/pre-trial meetings as directed by L&G Engineering and/or TxDOT.
N/A	N/A	i) As necessary, the appraiser will coordinate with review appraiser regarding revisions, comments, or additional information that may be required.
N/A	N/A	j) The cost of the appraiser appearing as an expert witness for testimony at special commissioners hearing must be included in the proposed fee schedule for the appraiser. The cost of the appraiser's expert witness testimony for trial is not part of this contract, and shall be paid by the COUNTY.
		4) APPRAISAL REVIEW
N/A	N/A	a) Review Appraiser may be selected from TxDOT's list of state approved fee appraisers. This list is available for viewing at all District offices or the Right of Way Division office at 118 E. Riverside Drive, Austin, Texas upon request.
N/A	N/A	b) Review all appraisal reports for each parcel to determine consistency of values, supporting documentation related to the conclusion reached and compliance with TxDOT/COUNTY policies and procedures and the Uniform Standards of Professional Appraisal Practices.
N/A	N/A	c) Prepare and submit to TxDOT the Form ROW-RTA-10 "Tabulation of Values", for each appraisal.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

Services Provided By: ENGINEER	COUNTY	
N/A	N/A	d) The cost of the review appraiser appearing as an expert witness for testimony at special commissioners hearing must be included in the proposed fee schedule for the review appraiser. The cost of the appraiser's expert witness testimony for trial is not part of this contract, and shall be paid by the COUNTY.
		5) APPRAISAL UPDATES
N/A	N/A	a) Prepare complete appraisal update for the parcel to be acquired utilizing TxDOT Form No. ROW-A-5, which will be furnished to the provider by TxDOT. These reports shall conform to COUNTY/TxDOT policies and procedures along with the Uniform Standards of Professional Appraisal Practices.
N/A	N/A	b) As necessary, prepare written notification to COUNTY/TxDOT of any environmental concerns associated with the right of way to be acquired which could require environmental remediation. All completed appraisals will be administratively reviewed by L&G Engineering Right of Way Office and recommended for approval by TxDOT.
N/A	N/A	c) As necessary, the appraiser will appear or testify as an Expert Witness in eminent domain proceedings and be available for pre-hearing or pre-trial meetings as directed by the TxDOT/COUNTY.
N/A	N/A	d) The cost of the appraiser appearing as an expert witness for testimony at special commissioners hearing must be included in the proposed fee schedule for the appraiser. The cost of the appraiser's expert witness testimony for trial is not part of this contract, and shall be paid by the COUNTY.
N/A	N/A	e) As necessary, the appraiser will coordinate with the review appraiser regarding corrections and/or additional information that may be required.
		6) NEGOTIATION TASKS AND FEES
N/A	N/A	a) Analyze appraisal and appraisal review reports and confirm the TxDOT's approved value prior to making offer for each parcel.
N/A	N/A	b) Analyze preliminary title report to determine potential title problems, propose methods to cure title deficiencies.
N/A	N/A	c) Prepare the initial offer letter, instruments of conveyance, and any other documents required or requested by COUNTY /TxDOT on applicable COUNTY /TxDOT forms.
N/A	N/A	d) Mail (Certified Mail Return Receipt Requested) initial offer letter, draft deed, Bill of Rights Brochures and Appraisal Reports to address confirmed with the Appraisal District of Hidalgo County. Maintain follow-up contacts and secure the necessary instruments upon acceptance o f the offer for the closing.
N/A	N/A	e) Provide a copy of the appraisal report for the subject property exclusively to the property owner or authorized representative at mailing of initial offer. Maintain original signed Receipt of Appraisal. (unless property owner refuses to sign it).
N/A	N/A	f) Respond to property owner inquiries verbally and in writing within two business days.
N/A	N/A	g) Prepare a separate negotiator contact report for each parcel per contact.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

Services Provided By: ENGINEER	COUNTY	
N/A	N/A	h) Maintain parcel files of original documentation related to the purchase of the real property or property interests.
N/A	N/A	i) Advise property owner on the Administrative Settlement process. Transmit to TxDOT any written counter offer from property owners including supporting documentation, and provider recommendation with regard to Administrative Settlements in accordance with COUNTY /TxDOT policy and procedures.
N/A	N/A	j) Prepare final offer letter, documents of conveyance as necessary.
N/A	N/A	k) Appear and provide Expert Witness testimony as an Acquisition Provider when requested.
N/A	N/A	l) Meet at the L&G Engineering ROW office in Mission once per week as agreed-upon with the Right of Way Acquisition Manager/Administrator.
N/A	N/A	m) Provide a monthly progress report per parcel by the 25th of the month with invoice.
N/A	N/A	n) The consultant shall, as part of this proposal, estimates 10% of the parcels identified on Page 37 may end up in condemnation. The consultant shall be available for any meeting/hearings as requested by the COUNTY Attorney.
		7) CLOSING SERVICE FEES
N/A	N/A	a) Coordinate with COUNTY and Title Company to obtain an updated title commitment along with other Forms and certified copy of the instrument of conveyance necessary when requesting the Parcel Payment from the COUNTY.
N/A	N/A	b) Acquisition Provider shall attend closings and provide closing services in conjunction with Title Company.
N/A	N/A	c) Acquisition Provider shall record all original instruments immediately after closing at the respective County Clerk's Office, except for donations which must be forwarded to TxDOT for acceptance by the Texas Transportation Commission.
		8) RELOCATION ASSISTANCE SERVICES (separate Work Authorization will be issued once relocations have been identified, unless noted otherwise).
N/A	N/A	a) The amount of relocations or displacements as identified. L&G will provide relocation advisory services. L&G will compute replacement housing supplements (owner occupant and/or tenants)
N/A	N/A	b) L&G will provide advisory services to business displacements and relocate them effectively.
N/A	N/A	c) TxDOT will review, approve and pay for all relocation costs as per the Agreement.
		9) CONDEMNATION SUPPORT
N/A	N/A	a) Pre-Hearing Support i) Upon receipt of a copy of the final offer, request an updated title commitment for Eminent Domain from the Title Company. ii) Prepare a Bisection Clause for the original set of Legal Descriptions supplied by Surveyor if applicable iii) Use the information from the Title Commitment to join all interested parties on the necessary forms. Spouses of owners must also be joined.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

Services Provided By:
ENGINEER COUNTY

iv) Upon completion of the necessary forms, prepare a packet containing 2 copies each of the following documents: Title Commitment, Negotiator's Reports, Appraisal Acknowledgment, Preappraisal Contact Sheet, signed and sealed property description, and plat, Final Offer Letter, any correspondence from the land owner or representatives, along with one copy of the appraisal report. Submit packet to the COUNTY Office for submission to the COUNTY Attorney's office.

v) Upon receipt of concurrence for the Appraisal Witness, request the update of appraisal.

vi) Upon receipt of packet prepared by the COUNTY Attorney which will include Petition for Condemnation, Lis Pendens, Order Appointing Special Commissioners, Order Setting Hearing, Oath of Special Commissioner, and Notice of Hearings, developed by the COUNTY Attorney; the attorney shall file the original petition with the COUNTY Court at Law or other appropriate Court for a cause number to be assigned.

vii) The COUNTY attorney shall file the Lis Pendens including the cause number with the COUNTY Clerk's Office.

viii) Upon assignment of a court, the COUNTY Attorney shall file the Order Appointing Commissioners with the judge retaining a copy of the Order for the files.

ix) Following appointment of Special Commissioners by the judge, the COUNTY shall secure the following documents: Oath of Commissioners signed by the Commissioners, Order Setting Hearing, 2 copies of the Notice of Hearing signed by the Commissioners.

x) The COUNTY shall file all originals with the court and send copies marked "copy" to L & G Engineering.

xi) The COUNTY Attorney shall send a copy of the petition to the Title Company so that the Title Company can make sure the appropriate parties were joined and that no changes in title have occurred.

xii) The COUNTY Attorney shall set the Special Commissioners Hearing after the updated appraisal has been submitted, if there is no change in value. If there is an increase in value, COUNTY will approve the new value and the COUNTY's provider will present a revised offer and a final offer letter and submit a copy of the final offer letter.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

xiii) The COUNTY Attorney shall coordinate a pre-hearing conference prior to the hearing (the day before or earlier) to discuss facts of the case with the COUNTY, Appraiser, and Negotiator.

xiv) After the hearing is set, the COUNTY Attorney shall serve Notices of Hearing to the indicated parties at least 11 days prior to the Commissioner's hearing. If it is necessary to join the Federal Government, be advised that they have an additional 60 days to prepare for the Hearing.

xv) Once the notices have been served, the COUNTY Attorney shall file the original notices with the court and send copies stamped "copy" to L&G Engineering ROW Office.

xvi) The COUNTY's Attorney shall send a reminder letter 2-3 weeks in advance to the COUNTY Administration offices, Acquisition Provider, the three special commissioners and court reporter concerning Hearing dates.

N/A N/A

b) Post Hearing Support (by COUNTY Attorney)

i) For the hearing, prepare the necessary forms and Special Commissioners time sheets and submit forms to Hidalgo COUNTY clerk's office.

ii) Obtain the signatures of Special Commissioners on the Award of Commissioners and file with the court for the judge's signatures within 48 hours of the Hearing.

iii) Give timesheets to Judge. The amount paid to the Special Commissioners is determined by the Judge.

iv) Obtain and distribute 3 certified copies of the award as follows: 1 certified copy to the title company with a request for a commitment, 1 certified copy to the COUNTY, 1 certified copy to L&G Engineering with the Commitment to request the warrant in the amount of the Special Commissioners Award.

v) Send the Commitment and the Award to COUNTY, along with individual special commissioner's billing requesting the payment for their fees.
vi) File COUNTY warrant in the registry of the court. File a Notice of Deposit with the court and send certified copies to each defendant notifying them of the date of the deposit. The Date of Deposit is the Date of Take.
vii) Take photograph of the interest to be acquired (if necessary) on the day of deposit for relocation verification.
viii) Send written notices of the date of deposit to the COUNTY Administration office and all interested parties.
ix) Appear as Expert Witness as requested. Sub-contractors must also appear as Expert Witnesses as requested.
x) All acquisition negotiations file indicating all "due diligence" provided by the Acquisition Provider will be directed to the COUNTY Attorney's office for his further handling in accordance to the Eminent Domain process by the COUNTY.

10) COMPENSABLE UTILITIES

Utility Accommodation is an integral factor in road construction and design. Coordination of utility adjustments is a necessary function within planning, design, acquisition and construction and requires the administration of property rights issues, utility policy, and reimbursement of eligible utility adjustments. It includes the following tasks:

N/A N/A a) Preliminary Design Consultations
i) Conduct Field Investigation and review Certificate of Convenience and Necessity boundaries to identify utility providers within the project area. Communications through letter, phone calls and email to establish a contact list. Coordinate data gathering by surveyors and design team. Introduce project to utility providers.

N/A N/A b) Field Observations and Verifications
i) Provide maps to Utility providers to "redline" and identify conflicts. Coordinate exposures and data collection by surveyor. Provide and confirm utility data on project maps. Order Utility Location Service.

NOT INCLUDED IN WORK AUTHORIZATION NO. 1

N/A N/A c) Exchange of Information with Utility Providers
i) Provide project schedule.
ii) Request schedules for utility adjustments.
iii) Identify who is responsible for utility process.

N/A N/A d) Confirmation of Property Interests
i) Request Documents.
ii) Coordination of data on maps and citation of property interest documents.
iii) Confirm utilities are within easements.

N/A N/A e) Coordination of Agreements
i) Identify utilities that are compensable.
ii) Determine parties and agreements necessary to complete compensable process.
iii) Coordinate execution and processing of Standard Utility Agreements.

N/A N/A f) Utility Meetings throughout project development
i) Set up and coordinate utility meetings during planning, design, acquisition and construction phases.
ii) Attend and participate in meetings by other parties.

11) PAYMENT SCHEDULE

N/A N/A a) Project Administration
i) Payment and Milestones
(a) Full Project Office
(1) Lump Sum Basis (assume 1 year project presence)

(2) Initial payment of 25% upon establishment of a project office with functional phone and utility services.
(3) Remainder paid out in equal monthly installments of 15% starting the following month.
(4) Monthly billing to COUNTY OF HIDALGO will be required.

b) Title Services
ii) Payment
(a) Per Parcel basis.
iii) Milestones
(a) 100% upon securing initial title commitment.

c) Appraisal Services
i) Payment
(a) Per Parcel Basis
ii) Milestones
(a) 100% paid upon delivery of complete and acceptable appraisal report

d) Appraisal Review
i) Payment
(a) Per Parcel Basis
ii) Milestones
(a) 100% upon submission of ROW-A-10

e) Appraisal Update
i) Payment
(a) Per Parcel Basis
ii) Milestones
(a) 100% upon delivery of complete and acceptable appraisal update.

f) Negotiation, Task, and Fees
i) Payment
(a) Per Parcel Basis
ii) Milestones
(a) 80% upon presentation of initial offer.
(b) 20% upon successful negotiation and all instruments are recorded.

g) Closing Service Fees
i) Payment
(a) Per Parcel Basis
ii) Milestones
(a) 100% upon recordation of instrument of conveyance.

NOT INCLUDED IN
WORK AUTHORIZATION NO. 1

h) Relocation Assistance
i) Payment
(a) Per Relocation
ii) Milestones
(a) 100% upon issuance of 90-day vacancy letter.

i) Compensable Utilities
i) Payment
(a) By percent complete

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.

Coordination of Utilities

The ENGINEER shall furnish the COUNTY prints of a project layout which will be distributed by ENGINEER to various utility companies to determine which utilities are in the limits of the project. These shall be preliminary layouts. Upon completion of the preliminary drainage plans and U&D sheets, the ENGINEER shall distribute to the various utility companies and request return. Upon return of these prints, the ENGINEER will schedule a meeting with the various utility companies to discuss potential conflicts and conformance with the State's Utility Accommodation Policy. The ENGINEER is responsible for coordination with the various utility companies for exposing potential conflicts and field ties to uncover utilities in potential conflict areas.

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 COUNTY. The ENGINEER shall coordinate through the COUNTY 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 COUNTY's Director. Any replacements to the ENGINEER's designated Project Manager/Engineer must be approved by the COUNTY.

NOT INCLUDED IN

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.

WORK AUTHORIZATION NO. 1

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 COUNTY 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 COUNTY 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 COUNTY 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 COUNTY.

If required, the ENGINEER shall provide to the COUNTY, a CD that contains all the plan sheets for the project. The graphics tape shall be compatible with the COUNTY's computer system.

CD Tape Required (YES or NO): YES

Proposal Time

The time indicated in the proposal and the contract shall include time necessary for reviews, approval, etc.

Office Location

The ENGINEER will perform the services to be provided under this agreement out of their office or offices listed below:

Service	Office Location
PS&E	Mission Office
Schematic	Mission Office
Environmental Document	Mercedes Office

The work effort will be managed out of the Mercedes (City) office located at 2100 West Expressway 83 (Address), Mercedes (City), Texas (State).

Client: Hidalgo County Precinct #4

EXHIBIT "

PROJECT WORK S
FM 1925 (Monte C
From FM 907 (Alamo Road) to E
Length = 2.3

TASK AND DESCRIPTION	FIRM	2013	2014													
		DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	
Phase I: EA, Public Involvement, Schematic																
Public Involvement																
Develop Alternatives & Matrix	L&G															
Advertise & Conduct Public Meeting	L&G															
Select TPA	L&G															
Schematic																
Develop Schematic	L&G															
Hydrologic Map	L&G															
TxDOT Review & Revisions	TxDOT															
TxDOT Schematic Approval	TxDOT															
Environmental Document																
Draft Environmental Document, Field Visits, etc...	L&G															
Submit Final Draft Document	L&G															
Agency Review & Revisions	TxDOT															
Environmental Decision	TxDOT															
Phase II: PS&E, ROW Map & Acquisition																
PS&E																
Design Survey	L&G															
Compensable Utility Oversight	L&G															
Outfall Coordination with HCDD #1	L&G															
30% PS&E Completion	L&G															
60% PS&E Completion	L&G															
90% PS&E Completion	L&G															
95% PS&E Completion	L&G															
100% Mylars	L&G															
TxDOT Plan Set Approval	TxDOT															
ROW Map																
Prepare ROW Map	L&G															
TXDOT Review & Revisions	TxDOT															
TxDOT ROW Map Approval	TxDOT															
ROW Acquisition (12 Parcels)																
ROW Release (Dependent on Availability of Funds)	TxDOT															
Project Administration	L&G															
Title Commitments	L&G															
Appraisal Reports	L&G															
Appraisal Review Reports	L&G															
Appraisal Update Reports	L&G															
Approved Values by TxDOT	TxDOT															
Acquisition Negotiation Offers	L&G															
Title Curative Process	L&G															
Title Commitment Updates	L&G															
Payments for Parcels	L&G															
L&G Condemnation Support Process	L&G															
Eminent Domain Proceedings by County	COUNTY															
Title Insurance Policies	L&G															
Consumation of Outstanding Cases	L&G															
Phase III: Proposed Letting																
Let Project (Est. Earliest Date: May 2016)	TxDOT															
(Dependent on Availability of Funds)																

L&G ENGNEERING TASK
TxDOT TASK
COUNTY TASK

XHIBIT "C"

T WORK SCHEDULE
(Monte Cristo Rd)
Road) to East of SH 68 (Uresti St.)
gth = 2.3 miles

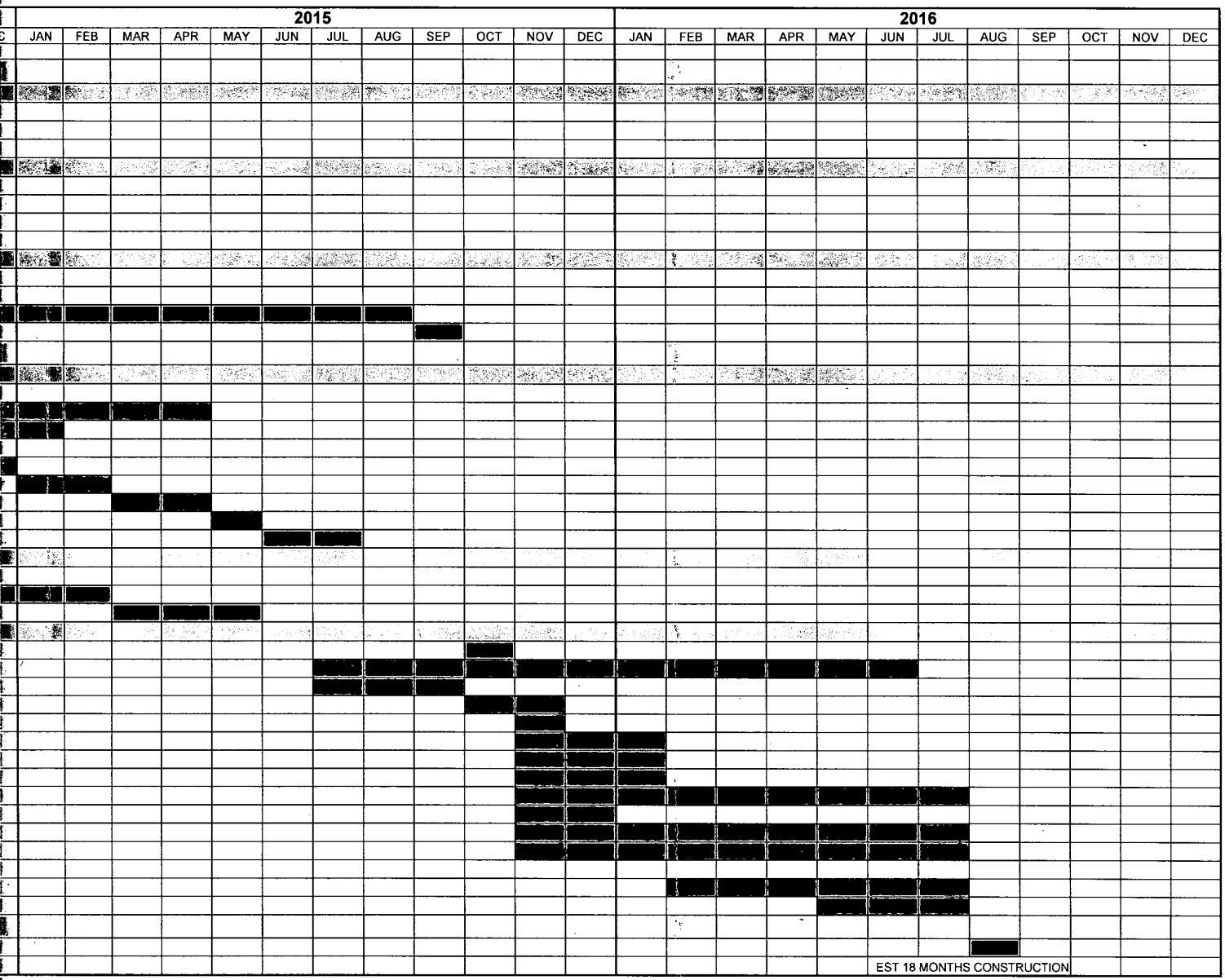


EXHIBIT "D-1"
ESTIMATED PROJECT FEE SCHEDULE
FM 1925 PROJECT (SEGMENT II)
(Limits: from FM 907 (Alamo Road) to East of SH68 (Uresti) Street)

ROADWAY PROJECT:	FM 1925
LIMITS:	from FM 907 (Alamo Road) to East of SH 68 (Uresti Street)
EXISTING ROADWAY SECTION:	40-ft Rural
EXISTING ROW WIDTH:	80-Feet
PROPOSED ROADWAY SECTION:	4-lane divided urban
PROPOSED ROW WIDTH:	120FT
ESTIMATED CONSTRUCTION COST:	**$10,305,000.00**
LENGTH FOR 4-LANE ROADWAY	2.3 Miles

ESTIMATED PROJECT COSTS	*STATE/MPO*	** LPA*
WORK AUTHORIZATION NO. 1		
PHASE I - EA, PUBLIC INVOLVEMENT, SCHEMATIC, DESIGN		
Environmental Assessment with TxDOT	$ -	$ 95,000.00
Public Involvement for the project with stakeholders and 1 Public Meeting	$ -	$ 25,000.00
Archeological and Historical Research	$ -	$ 30,000.00
Engineering Technical Support at Public Mtgs with Layouts etc	$ -	$ 24,000.00
Schematic for FM 1925	$ -	$ 154,575.00
Hydrological Map	$ -	$ 42,000.00
Schematic for intersecting streets (Sharp to 3rd Street)	$ -	$ 40,000.00
Office Surveys for Schematic (Preliminary Ownership Identification and Property Rights)	$ -	$ 21,000.00
Preliminary Compensable Utilities Identification on Schematic for Approval by TxDOT/FHWA	$ -	$ 18,000.00
Update Schematic based on comments as provide by TxDOT/County for schematic and EA update w/ FHWA	$ -	$ 39,000.00
Engineering Technical Support at Public Hearing with Layouts etc	$ -	$ 36,000.00
Public Involvement and 1 Public Hearing	$ -	$ 25,000.00
SUB-TOTAL	$ -	**$ 549,575.00**
WORK AUTHORIZATION NO. 2		
PHASE II- PS&E and CONSTRUCTION OVERSIGHT		
Complete ROW Map (Estimated 12 Parcels)		$ 48,000.00
Outfall Identification Preliminary Property Ownership and Hydraulics	$ -	$ 36,000.00
PS&E Development (7.5% Engineering Fee)		$ 772,875.00
Engineering Fee to Create sets of Plans and Submit through TxDot and Austin Letting		$ 135,000.00
PS&E Development for OUTFALL(S)		$ 162,000.00
Field Surveys for Design and Construction		$ 110,000.00
Permitted Utilities Coordination to adjust	$ -	$ 90,000.00
ROADWAY CONSTRUCTION COST	$ 10,305,000.00	
TxDOT Construction Inspection (11%)	$ 1,133,550.00	
Eng Consultant Construction Management (18 Months)		$ 162,000.00
SUB-TOTAL	$ 11,438,550.00	**$ 1,515,875.00**
WORK AUTHORIZATION NO. 3		
PHASE III - ROW Acquisition		
Right-of-Way Costs - Acq.Services @ (est.12 Parcels @ $13,800/Parcel Avg.)		$ 165,600.00
Estimated County Attorney Costs for Condemnation ($15,000/Parcel based on 20% total of parcels)		$ 36,000.00
Estimated Compensable Utility Mgmt for Acq. of Property Rights and Compensate for Utility Adjust(s) (2) High Pressure Gas lines and One Parrallel Irrigation Line and one Parrallel Gas Line		$ 189,000.00
Estimated Roadway Right-of-Way Costs (422,400 sq/ft @ $4.5/ sq ft) (80/20)	$ 1,881,792.00	$ 19,008.00
COMPENSABLE UTILITY COSTS (Est 2-Pipeline Crossings at $130,000 ea to lower and encase and I Parallel Pipeline and 1 Parralel Irrigation Line both at 150,000 each)	$ 504,000.00	$ 56,000.00
SUB-TOTAL	**$ 2,385,792.00**	**$ 465,608.00**
TOTAL	**$ 13,824,342.00**	**$ 2,531,058.00**

Work Authorization No. 1 Phase I	**FY 13**	**$ 549,575.00**	**PENDING APPROVAL**
Work Authorization No. 2 Phase II	**FY 14**	**$ 1,515,875.00**	**NOT ISSUED**
Work Authorization No. 3 Phase III	**FY 15**	**$ 354,600.00**	**NOT ISSUED**

[ ] State/FED Estimated Costs

[ ] Local Estimated Costs

TOTAL ESTIMATED COUNTY COST:	**$ 2,531,058.00**	15.48%
TOTAL ESTIMATED PROJECT COST:	**$ 16,355,400.00**	
[ ] **COUNTY COSTS NOT INCLUDED IN WORK AUTHORIZATIONS**	**$ 111,008.00**	

* Local Public Agencies (LPA)

11/19/2013

EXHIBIT D

ESTIMATED PROJECT FEE SCHEDULE

FM 1925 (SEGMENT
(from FM 907 (Alamo Road) to E

		Senior Project Manager	Senior Engineer	Senior Environmental Scientist /Specialist	Project Engineer	Design Engineer	ROW Administrator	EI
	CONTRACT RATE	215.40	167.89	136.21	123.54	114.04	107.70	82.
	WORK AUTHORIZATION NO. 1							
	PHASE I - EA, PUBLIC INVOLVEMENT, SCHEMATIC, DESIGN							
1	Environmental Assessment with TxDOT	60		250				
2	Public Involvement for Environmental Assessment and 1 Public Meeting	30		35	39		10	
3	Archeological and Historical Research	14		28	15			
4	Engineering Technical Support at Public Meetings with Layouts, etc.	25		44	31		30	
5	Schematic for FM 1925	28	30		70	120		79
6	Hydrological Map	14	24	8	65	32		37.
7	Schematic for intersecting streets (Sharp to 3rd Street)	9	8		8	8		8
8	Office Surveys for Schematic (Preliminary Ownership Identification and Property Rights)	10	10		30	49		30.
9	Preliminary Compensable Utility Management Identification on Schematic	10	18		16	19	9	18.
10	Update Schematic based on comments as provided by TxDOT/FHWA	24	24		36	60		44
11	Engineering Technical Support at Public Hearing with Layouts, etc.	24	20	24	36		33	45
12	Public Involvement for 1 Public Hearing	21	17	18	18		19	18.
	SUB-TOTAL	**269**	**151**	**407**	**364**	**288**	**101**	**280**

HIBIT D-1
EDULE AND MAN-HOUR BREAKDOWN

GMENT II) PROJECT
oad) to East of SH68 (Uresti St.)

	MANHOURS										
ator	EIT	Senior Engineer Tech	Environmental Scientist /Specialist	Engineer Tech	CADD Operator / GISAnalyst	Admin / Clerical	Biologist	TOTAL HOURS	Sub-Contract Amounts / ROW COST	TOTAL LINE ITEM COST	ROUNDED TOTAL LINE ITEM COST
)	82.36	79.19	79.19	76.02	66.52	57.02	50.68				
			200		245	100	201	1056		$ 95,000.58	$ 95,000.00
			28.25		41.25	17	38	238.5		$ 25,000.66	$ 25,000.00
			124		128	23	33	365		$ 30,000.60	$ 30,000.00
					44.75	24	24	222.75		$ 24,000.55	$ 24,000.00
	79	76.25		100	1496	15	13	2027.25		$ 154,575.24	$ 154,575.00
	37.75		16	81	163.75	8	6	455.5		$ 42,000.66	$ 42,000.00
	8	9		10	479	10	5	554		$ 40,000.83	$ 40,000.00
	30.25			20	49	7	4	209.25		$ 21,000.19	$ 21,000.00
	18.25	20		26	34	5	2	177.25		$ 18,000.25	$ 18,000.00
	44	17		60	101	29	12	407		$ 39,000.33	$ 39,000.00
	45		32	42	47	31	37	371		$ 36,000.32	$ 36,000.00
	18.25		22	29	37	32	23	254.25		$ 25,000.68	$ 25,000.00
	280.5	**122.25**	**422.25**	**368**	**2865.75**	**301**	**398**	**6337.75**	**$ -**	**$ 549,580.89**	**$ 549,575.00**

Subtotal Manhour Fee with Sub-Consultant Costs:	$ 549,580.89
*** Total Project Fee:**	**$ 549,575.00**

*Rounded Figure