HIDALGO COUNTY
Professional Engineering Services
Contract # C- 11-195-08-16
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 ROW Mapping, Surveying, Right-of-Way Acquisition Services and Roadway Design for the Mile 2 North Project from Moorefield Road West to SH 364 (La Homa Road).

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 **$490,606.33**. This amount is based upon the costs outlined in the Estimated **Cost Proposal** attached hereto as ***EXHIBIT "D" – Fee Schedule.***

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. **1-1342-431-00-123-094-0-731**
Requisition Number _____ **(MUST BE INCLUDED AFTER CC APPROVAL)**

PART 5. PERIOD OF SERVICE

This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of 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. 3, Commissioner Joe Flores as to the content and detail of this Work Authorization No. 1.

HIDALGO COUNTY
COMMISSIONER PRECINCT NO. 3

BY:_____

PART 8. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on June 28, 2011 as indicated below.

THE ENGINEER:
L&G ENGINEERING

_____
By: Jacinto Garza, P.E.
President

THE OWNER:
HIDALGO COUNTY

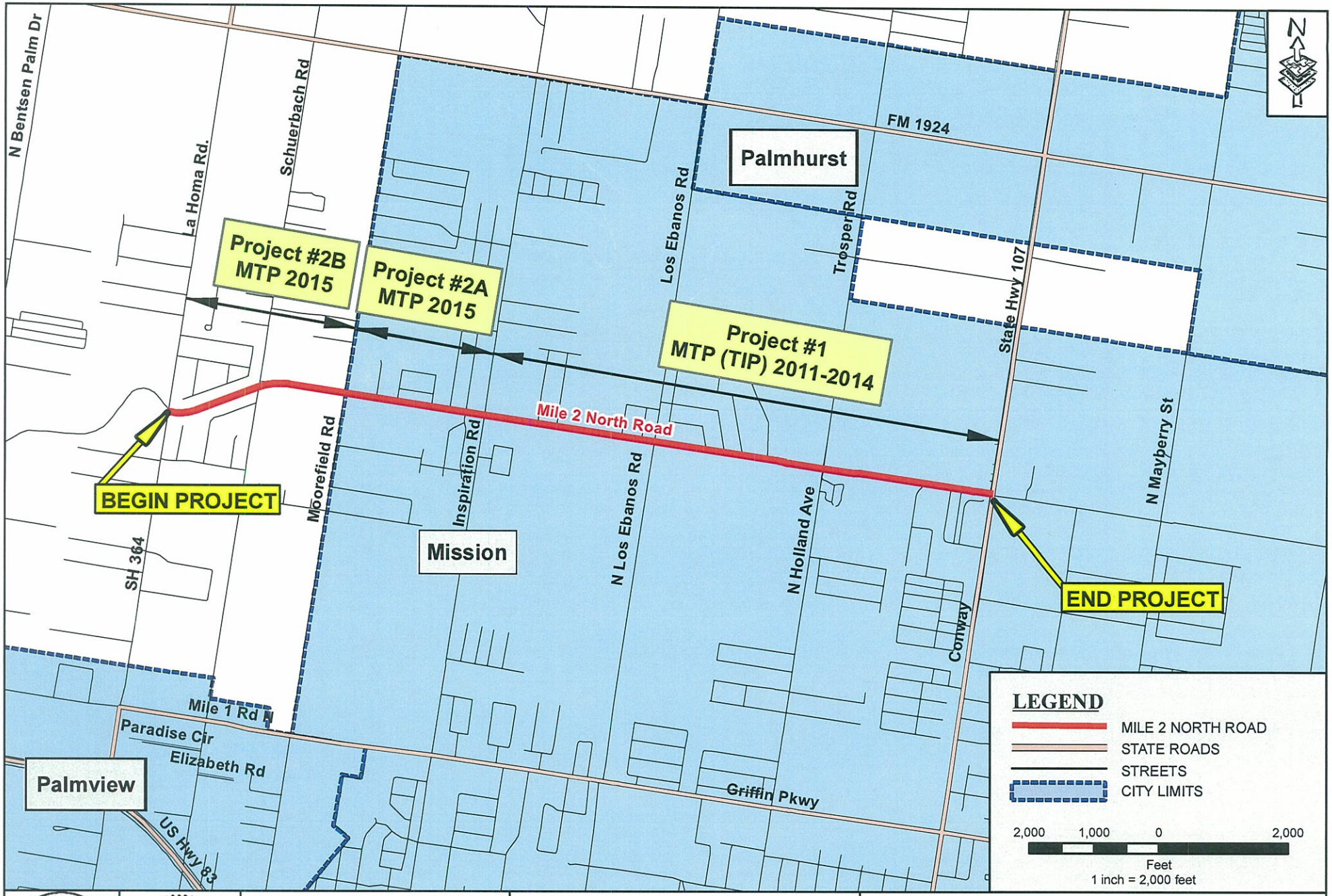
_____
By: Ramon Garcia,
County Judge

ATTEST:

_____
By: Arturo Guajardo, Jr., County Clerk

LIST OF ATTACHMENTS

Location Map
Exhibit A – Services to be provided by Owner
Exhibit B – Services to be provided by Engineer
Exhibit C – Work Schedule
Exhibit D – Fee Schedule



CITY OF MISSION, TEXAS FOUNDED IN 1908

THE COUNTY OF HIDALGO TEXAS

L&G Engineering
Transportation Consulting Engineers

MILE 2 NORTH ROAD
PROJECT LOCATION MAP
APPROX. LENGTH: 2.5 MILES

PROJECT #1: FROM INSPIRATION RD TO SH 107 (CONWAY)
APPROX. LENGTH: 1.5 MILES
PROJECT #2A: FROM MOOREFIELD RD TO INSPIRATION RD
APPROX. LENGTH: 0.40 MILE
PROJECT #2B: FROM LA HOMA RD TO MOOREFIELD RD
APPROX. LENGTH: 0.60 MILE

G:\EA MAPS\Mile 2 Lahoma-Conway\Mile2N LOCATION 5-4-11

EXHIBIT "A"

Services to be provided by the County

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

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

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

4. The County will process all acceptable requests for payment in a timely manner.

GENERAL INSTRUCTIONS

ENGINEER shall mean L&G Engineering.

STATE shall mean Texas Department of Transportation.

COUNTY shall mean Hidalgo County.

CITY shall mean City of Mission.

PROJECT DESCRIPTION

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

County/City: Hidalgo County /Mission, Texas

Control: _____

Project/Description: PS&E Design, Right-of-Way Mapping, and Acquisition Services for Mile 2 North

Length: Variable

Highway: Mile 2 North

Limits: from Moorefield Road West to La Homa Road (SH 364) (0.60 Mile)

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)
Completed by the Mission Economic Development Authority (MEDA)

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

[LEFT INTENTIONALLY BLANK]

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 City has given the engineer written approval of the final location of the proposed ROW lines.

YES NO 1. Ownership Data in a .dgn file
- a. The entire project limits.
- b. Compensable utility ownership who have property rights on ROW shall be researched and provided.
- c. For each drainage outfall property
- d. For each irrigation structure pipe.

YES NO 2. Parcel plats & Right-of-Way Map
- a. A ROW map, parcel plats and field notes shall be prepared and furnished.
- b. All plats and field notes must be signed and sealed by a Registered Professional Land Surveyor (RPLS).
- c. ROW map must depict all improvements affecting ROW.

YES NO 3. Utilities (Compensable)
- a. Property ownership with recording information shall be shown on ROW Map and Parcel Sketches with distance ties to property corners in an effort to locate utility.

YES NO 4. Field Notes
- a. Field notes and plats, signed and sealed by a Registered Professional Land Surveyor, for all parcels on the ROW Map
- b. Computation Sheets for Survey Closure and Area for Each Parcel.
- c. Ground surveys and preparation of parcel maps, legal descriptions, and right of way maps.

YES NO 5. Survey and Stake Right-of-Way

YES NO 6. Records as Required by the City and State
- a. Records used to establish ownership

YES NO 7. General Guidelines for Preparation of Right-of-Way Maps (Sample ROW Maps and Parcel Sketches and field notes attached)

General Specifications

a. All data submitted by the surveyor will be legible, organized and well documented.

b. The surveyor shall provide temporary signs and shall control traffic near surveying operations adequately to comply with provisions of the MUTCD; a copy of which the Surveyor acknowledges has been furnished to him. All signs, flags, and safety equipment are to be provided by the surveyor.

c. Permission to enter private property shall be the sole responsibility of the surveyor.

d. The surveyor will be held responsible for the correctness of his services. The surveyor will be responsible for the completion of his services.

e. The surveyor will be required to complete the attached "Right-of-Way Map Checklist" and submit along with the completed R.O.W. map. All requirements of attached R.O.W. map

checklist must be complete, accurate and also considered to be essential and is a part of this contract.

Project specific scope of services

FC 130 – Right of Way Data – Abstract analysis, development of ROW Map sheets including parcel plats and field notes with Metes & Bounds field descriptions, and Title Commitments.

FC 150 – Field Surveying for Parcel Mapping – Recover horizontal & vertical control, locate and field tie existing ROW and boundary corners. Update topography, and reestablish corners for ROW map revisions.

SURVEYING SCOPE OF SERVICES FOR PARCEL MAPPING

RIGHT-OF-WAY DATA
Right-of-Way Documents - The **Surveyor** will utilize State examples and provide the following:

General
a. Abstracting: The **Surveyor** will determine Ownership Data.
b. Prepare individual parcel maps and field notes as needed to properly describe the right-of-way the **State** is to acquire.
c. All procedures involving right-of-way maps will be in accordance with the **State's** Right-of-Way Book I and Book II, the **State's** local operating procedures and according to the Texas Board of Professional Land Surveying Practices Act.
d. All required documents will be in English units.
e. The **Surveyor** will monument all corners with a 5/8 inch iron rod with a Surveyor's plastic cap on all parcel boundary corners.
f. The **Surveyor** will provide to the State a copy of Instruments of Record.
g. The **Surveyor** will attach graphics files compatible with the latest version of Micro-Station graphics software.
h. The **Surveyor** will attach documents or text files compatible with the latest version of Word software.

Parcel Plats
a. A parcel plat will be prepared for each parcel of land to be acquired. The **State** has developed standard formats for parcel plats, copies of which the **Surveyor** will request and secure for all purposes
b. Parcel boundary lines will be delineated with appropriate bearings, distances, and curve data.
c. Private property lines will be delineated with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired.
d. League lines and survey lines will be shown and identified by name and abstract number.
e. A north arrow will be shown on each sheet and, if possible, in the upper right hand corner.
f. Monumentation set or found will be shown and described as to material and size.
g. A station and offset will be shown for each PC, PT, and angle point in the proposed right-of-way lines and the existing right-of-way lines in areas of no proposed acquisition.
h. Intersecting streets will be shown and identified by name and right-of-way width.
i. A parent tract inset will be shown for each parent tract.
j. A note will be included on each map sheet stating the basis of bearings, coordinates, and datum used.
k. Appropriate notes will be included on the title sheet stating the following:
    a. Month(s) and year abstracting was performed 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 map was completed by the **Surveyor**.
l. The right-of-way account number and R.O.W. CSJ if available will be shown on each parcel map sheet.
m. All parcel maps should be 8-1/2" x 11" signed and sealed by a Registered Professional Land Surveyor and note referencing legal description.
n. The acreage of the part taken should be shown to three decimal places, rounded.

Field Note Descriptions - A field note description will be prepared for each parcel of land to be acquired. Field note descriptions will include, but need not be limited to, the following:

a. The field note description will begin with a general description that will include, as a minimum:
   a. **State**, county, and city 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.

b. The field note description will continue with a metes and bounds description that will include, as a minimum:
   a. A point of commencing (outside property corner).
   b. A point of beginning on proposed R.O.W. line.
   c. 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.
   d. A description (8-1/2" x 11") of all monumentation set or found to include, as a minimum, size and material.
   e. All field note descriptions will be signed and sealed by a Registered Professional Land Surveyor.
   f. Note referencing parcel plat.

PHARR DISTRICT
ROW MAP CHECKLIST

Consultant: _____
Contract/WA# _____
Responsible Office: _____
TXDOT 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. Pharr District ROW will not accept project without this checklist.)

MAP

General
___ All documents have been proofread and are accurate.
___ Title Commitments for each individual parcel.
___ Graphics files compatible with Microstation 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

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:
___ Type II Monumentation i.e. P.C., P.T., Break Points and 1500' intervals
___ 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

* *DO NOT SEAL MAP*

FIELD NOTES

Heading

___ County
___ Highway
___ Parcel number
___ R.O.W. CSJ
___ Construction CSJ

General Description or "preamble"
___ Area of parcel 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

FIELD SURVEYING AND PHOTOGRAMMETRY
(Function Code 150)

Services Provided By:
Engineer County

1. Field Surveying

YES NO a. Primary Project Control - 3 to 5 miles spacing
Precision shall be 1 part in 20,000 or better, unless otherwise directed by the district engineer.
(1) Establish horizontal control points
(2) Establish vertical control points

NOTE: ALL BEARING AND DISTANCE SHALL BE BASED ON THE STATE PLANE COORDINATE SYSTEM NAD 1983, SOUTH ZONE.

ALL DISTANCES AND COORDINATES SHALL BE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999960

This project shall be tied to the same H&V on La Homa and Mile 2. The Engineer shall provide the control points to tie into.

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

(1) Project control base lines

NO (2) Photogrammetric ground control
NO (a) Establish horizontal control
NO (b) Establish vertical control points
NO (c) Place and maintain control point targets

YES NO c. Other Field Surveying

(1) **The limit of the Design surveys shall be 500-ft before and after the limits of the project as identified by the Project Engineer on the schematic. Establish horizontal and vertical control.** Set benchmarks at 1000-ft intervals along the project proposed right-of-way. Provide x,y,z for each Benchmak. Provide a BM along each outfall identified on the Hydrologic Map. The BM's shall be #5 I.R. 2-ft in depth set in concrete. **The surveyor shall provide A H&V Book (a Sample shall be provided by the Engineer to the Surveyor).** The Surveyor will provide a 3-pt reference sketch with ties to the BMs for inclusion the the existing H&V Control Book. Establish benchmark circuit throughout the project with a tolerance of 0.03'/ft per mile error vertically.
(2) Complete topographic and cross section survey, data processing, and CADD mapping (2D 3D) for the limits of the project.
(3) Locate all visible utilities, data processing and CADD mapping (2D & 3D) including irrigation lines. Follow sample provided by the Engineer.
(4) Field locate cross culverts, driveway culverts, inverts, irrigation lines, within the project limits, data processing and CADD mapping (2D & 3D).
(5) Right of Entry, Right of Way Research, and Appraisal District Records is the responsibility of the Surveyor.
(6) The Surveyor shall also paint the proposed centerline on the existing pavement as approved by Engineer. (500-ft stations and a tick mark at 100-ft. stations –12

inches long with approved paint by Engineer) before construction for the purpose of utility adjustments and project location.

(7) Profile and cross section intersecting streets for ties into project (500-ft. beyond the proposed ROW per schematic and 20-ft wider than the existing ROW of intersecting street). Reference missing voids as per CD provided by the Engineer.

(8) 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.

(9) Tie Horizontally and Vertically the existing storm drain system that lies within the existing proposed ROW including the elevation of the outfall of said recovered existing storm drain systems.

YES NO (10) Tie to existing underground and overhead utilities (location, elevation and direction)
Horizontally – the surveyor shall call the 1-800 number for the utilities to be marked on the ground as well as any city water and sewer lines. He shall tie all visible utility crossings with name, address and Phone #'s of utility companies. The engineer will coordinate with the utility companies and jointly the Surveyor and the Engineer will identify which utilities were missed and need to be tied down.
Vertically – The engineer shall identify all utilities that are potential conflicts and that need to be tied vertically. The engineer will advise the surveyor in writing of the needed vertical ties and the surveyor will tie the lines vertically once the surveyor has coordinated the exposure and provide the information to the engineer.

YES NO (11) Additional Field Surveying as shown below:

(A) IRRIGATION LINES – 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 provide Field Books to the engineer.

(B) OUTFALLS – The surveyor will provide a complete 2D & 3D File including utilities of the outfall identified on the Hydrologic Map.

Driveways and Turnouts

(a) Inventory commercial entrances, public roads and side streets separately.
(b) Obtain centerline station. (Width at ROW, PAV'T and existing radius.
(c) Inventory by type (dirt, caliche, gravel or paved). If paved, indicate condition in terms of no patches, has patches or has potholes. Obtain width at R.O.W. line.
(e) Obtain elevations at both edges of the driveway or turnout in line with the side drain.

YES NO (13) ROW staking (Existing and Proposed @ 1,000 ft. stations PC's PT's and Angle points as per ROW Map)

NO NO (14) Soil core hole staking -

YES NO (15) Determine changes in topography from voids and outdated maps due to development, erosion, etc.

YES NO (16) Profiles of existing drainage facilities

NO NO (17) Measurement of hydraulic opening under existing bridges

YES NO (18) Obtain elevations of manholes and valves of utilities

YES NO (19) Provide temporary signs, traffic control, flags, safety equipment, etc.

YES NO (20) Ties to existing bridges or culverts that may conflict with new construction.

N/A N/A (21) Bridge widening top of deck and/or top of cap elevations at the Profile Grade Line (PGL) and the edges of slab at bent locations.

YES N/A (22) Inventory signs, mailboxes, and driveways

YES N/A (23) Survey controlled data sheets per TxDOT guidelines.

Services Provided By: Engineer	County	
N/A	N/A	2. Photogrammetric Products
		a. Uncontrolled Photography
		(1) Contact Prints
		(2) Mosaics
		(3) Digital ortho plots
		b. Mapping
		(1) Planimetric Maps
		(2) Contour Maps
		(3) Cross Sections
		(4) Profiles
		(5) Digital Terrain Models (DTM)

ROADWAY DESIGN CONTROLS
(Function Code 160)

Services Provided By: Engineer	County	
		1. Geometric Design
NO	NO	a. Horizontal and Vertical Alignment
NO	NO	b. Schematic Layout (Completed)
		(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.

Services Provided By: Engineer	County		
NO	NO	2.	General Guidelines for Project Development (Completed)

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.

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	NO	3.	Exhibit for Airway/Highway Clearance Permits

Services Provided By: Engineer	County		
		4.	Grading Design
YES	NO	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 superelevation rate.
YES	NO	b.	Typical Sections
YES	NO	c.	Design Cross Sections
YES	NO	d.	Determine Cut and Fill Quantities
N/A	NO	e.	Slope Stability Analysis
N/A	N/A	f.	Embankment Foundation Stability Analysis
N/A	N/A	g.	Embankment Settlement Analysis
		5.	Pavement Design
YES	NO	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.
YES	NO	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)
YES	NO		(a) Along center line
NO	NO		(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)
YES	NO		(2) Identify, interpret and summarize geologic features that affect engineering design (PI, Sulfate content, % of lime)
NO	NO	d.	Traffic Data for Pavement Design by **STATE**
YES	NO	e.	Basic Design Criteria
YES	NO	f.	Life Cycle Cost Analysis (es)
YES	NO	g.	Cost Data
YES	NO	h.	Pavement Material Properties

Services Provided By: Engineer	County	
		5. Pavement Design (Continued)
YES	NO	i. Rehabilitation Investigations
YES	NO	(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.

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
NO	NO	a. Drainage area maps showing existing conditions and proposed improvements.
YES	NO	b. Hydrologic data/discharge determination
		2. Hydraulic Drainage Study and Documentation
		a. Hydraulic computations
N/A	N/A	(1) Storm water detention available within the ROW (linear ft. along side drain ditch).
YES	NO	(2) Storm water detention required outside the ROW (as per HCDD#1)
YES	NO	(3) Culverts
NO	NO	(4) Bridge waterways
NO	NO	(5) Channels
YES	NO	(6) Storm sewers/inlets
NO	NO	(7) Pump stations
YES	NO	(8) Storm Water Management facilities
YES	N/A	(9) Other
		(a) Irrigation Canals/Siphons
NO	NO	b. Hydraulic report(s)
NO	N/A	c. Federal Emergency Management Agency (FEMA) floodway requirements
YES	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

Services Provided By: Engineer	County		
		3.	Layout, Structural Design and Detailing of Drainage Features
		a.	Culverts
YES	NO		(1) New culverts
YES	NO		(2) Culvert widening and/or lengthening
YES	NO		(3) Culvert replacements
		b.	Storm sewers
YES	NO		(1) New storm sewers
YES	NO		(2) Modify existing storm sewers
YES	NO		(3) Inlets
YES	NO		(4) Manholes
YES	NO		(5) Trunk lines
		c.	Pump stations
NO	NO		(1)
NO	NO	d.	Subsurface drainage at retaining walls
YES	N/A	e.	Outfall channel(s) within the ROW
YES	NO	f.	Outfall channel(s) outside the ROW
NO	NO	g.	Detention Pond(s) within the ROW
NO	NO	h.	Detention Pond(s) outside the ROW
YES	NO	i.	Summary of Quantities
NO	NO	j.	Storm Water Management facilities
YES	NO	4.	Storm Water Pollution Prevention Plan (SW3P)
NO	NO	5.	Scour Evaluation - Waterway Structures only (to be completed by Bridge Engineer under FC 170).

SIGNING, MARKINGS AND SIGNALIZATION
(Function Code 162)

Services Provided By:
Engineer County

YES NO 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
   (11) Quantities of existing pavement markings to be removed
   (12) Proposed delineators and object markers

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

YES NO 2. Summary of Small Signs Tabulation

NO NO 3. Summary of Large Signs Tabulation including all Guide Signs

YES NO 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
YES	NO	(1) Location Map Relationship of proposed installation to other traffic signals, highways, business areas and traffic generators
YES	NO	(2) Photographs as appropriate
YES	NO	(3) Accident data as appropriate
		(4) Vehicle volumes (provided by TxDOT)
YES	NO	(a) Existing
YES	NO	(b) Estimated
YES	NO	(c) Projected
YES	NO	(d) Pedestrian
YES	NO	(5) Traffic Survey - Count Analysis
YES	NO	(6) Recommendation based on above data
YES	NO	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)

Services Provided By: Engineer	County	
		5. Traffic Signals (Continued)
		(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
		(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
YES	NO	(a) Confirm power source
YES	NO	(b) Discuss route of aerial or underground interconnect cable (when applicable)
YES	NO	(c) Adjustment of overhead utility lines
YES	NO	(2) Prepare governing specifications and special provisions list
YES	NO	(3) Prepare project estimate
YES	NO	d. Summary of Quantities

MISCELLANEOUS (ROADWAY)
(Function Code 163)

Services Provided By: Engineer	County		
		1.	Retaining Walls
		a.	Structural Details
NO	NO		(1) Cast-in-Place Cantilever at _____ locations. (TxDOT Standard Retaining Wall)*
NO	NO		(2) Tiedback Retaining Wall at _____ location. (TxDOT standard retaining wall)
NO	NO		(3) Specialized Retaining Wall at _____ locations (Unique Design).*
		b.	Alternate Patented Retaining Walls at _all_ locations. (Layouts Only)**
NO	NO		(1) Mechanically Stabilized Earth
NO	NO		(2) Concrete Block Wall Systems
NO	NO		(3)
NO	NO	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
NO	NO	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.
NO	NO	e.	Foundation Studies (Show cost estimate with Function Code 110)
NO	NO		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.
NO	NO	f.	Stability Analysis (the Engineer shall estimate this task as part of his bid to complete the work).
NO	NO	g.	Estimate
NO	NO	h.	Summary of Quantities
NO	NO	i.	Typical X-section.

Services Provided By:
Engineer County

1. Retaining Walls (continued)

NO

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.

YES NO 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, flagperson, 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.

Services Provided By: Engineer	County	
		3. Illumination
NO	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
NO	NO	b. Final Roadway Illumination and Electrical Circuit Layouts
		(1) Roadway layout showing pavement edges and 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.
NO		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.

Services Provided By: Engineer	County		
		4.	Miscellaneous Drafting/Standards
YES	NO		a. Erosion Control
NO	NO		b. Landscape Development
YES	NO	5.	Compute and Tabulate Quantities
NO	NO	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.
NO	NO		(a) New O.S.B. structure(s)
NO	NO		(b) Structural evaluation of existing O.S.B. structure(s) that are to remain in place or to be relocated.
NO	NO		(2) High Mast Illumination Poles (HMIP)
YES	NO		(3) Traffic Signal Supports
NO	NO		(4) Conventional Illumination Poles
NO	NO		(5) Sound Barrier Walls
YES	NO		b. Checklist for Layouts
			(1) Reference appropriate O.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
NO	NO		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
NO	NO		a. Utility Agreements
NO	NO		b. Exhibits for Utility Agreements
N/A	NO		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
NO	NO		e. Traffic Signal Agreements
NO	NO		f. Exhibits for Traffic Signal Agreements
YES	NO	9.	Estimate
YES	NO	10.	Specifications and General Notes

BRIDGE DESIGN
(Function Code 170)

Services Provided By: Engineer	County		NUMBER REQUIRED
		1. Preparation of Structural Details	
		a. New Structure(s)	
NO	NO	(1) Underpass(es)	_____
NO	NO	(2) Overpass(es)	_____
N/A	N/A	(3) Main Lanes	_____
N/A	NA	(4) Direct Connector(s)	_____
N/A	N/A	(5) Ramp Bridge(s)	_____
NO	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)	_____
NO	NO	(1) Bridge Widening, Rehabilitation and/or Modification of Existing Structure(s)	_____
NO	NO	(2) Bridge Replacement	_____
NO	NO	(3) Raising Bridge Elevation	_____
NO	NO	(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)	_____
N/A	N/A	(7)	_____
		Total Existing Structures =	0

* Countour 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	
NO	NO	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 superelevation 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.

Services Provided By: Engineer	County	
		2. Preparation of Bridge Layouts (each bridge) (Continued)
		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.
		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.
NO	NO	3. Bridge Classification Culvert, Estimate, Quantities, and Specifications (each bridge)
NO	NO	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).
NO	NO	5. Bridge Total Quantities and Cost Estimates (each bridge)
NO	NO	6. Bridge Special Provisions and Specifications (each bridge)
NO	NO	7. Bearing seat elevations for each beam or girder. Top of cap elevations for non-beam type structures.

Services Provided By: Engineer	County
NO	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.**

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.
   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.

FC 600 – ACQUISITION PROVIDER SERVICES

(Services to be provided by L&G Engineering)

1) Project Administration

a) Negotiation of Scope of Services for Work Authorization
   i) Acquisition Provider will visit project site with COUNTY personnel if necessary.

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.

c) Overhead Costs
   i) Administrative costs

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.

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

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.

b) Secure title commitments updates in accord 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.

c) Secure title insurance for all parcels acquired, insuring acceptable title to the County of Hidalgo. Written approval by the County required for any exception. Title Insurance shall be paid for by Hidalgo County.

3) Appraisal

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.

b) Secure written permission (if necessary) from the owner to enter the property from which land is to be acquired. If the Acquisition Provider, 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.

c) Prepare (if necessary) pre-appraisal contact with interest owner(s) for each parcel using acceptable County/TxDOT forms.

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.

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 County policies and procedures along with the Uniform Standards of Professional Appraisal Practices.

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.

g) All completed appraisals will be administratively reviewed by L&G Engineering ROW Office and recommended for approval by the County of Hidalgo.

h) As necessary, the appraiser will appear and or testify as an Expert Witness in eminent domain proceedings and be available for pre-hearing or pre-trial meetings as directed by L&G Engineering and/or the County.

i) As necessary, the appraiser will coordinate with review appraiser regarding revisions, comments, or additional information that may be required.

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

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.

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.

c) Prepare and submit to the County the Form ROW-RTA-10 "Tabulation of Values", for each appraisal.

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

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.

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 the County of Hidalgo.

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 County.

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.

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

a) Analyze appraisal and appraisal review reports and confirm the County's approved value prior to making offer for each parcel.

b) Analyze preliminary title report to determine potential title problems, propose methods to cure title deficiencies.

c) Prepare the initial offer letter, instruments of conveyance, and any other documents required or requested by County/TxDOT on applicable County/TxDOT forms.

d) Contact each property owner or owner's designated representative, to present the written offer in person where practical, and deliver appraisal report and required brochures. Maintain follow-up contacts and secure the necessary instruments upon acceptance of the offer for the closing.

e) Provide a copy of the appraisal report for the subject property exclusively to the property owner or authorized representative at the time of the offer. Maintain original signed Receipt of Appraisal, (unless property owner refuses to sign it, it will be so noted) for billing purposes.

f) Respond to property owner inquiries verbally and in writing within two business days.

g) Prepare a separate negotiator contact report for each parcel per contact.

h) Maintain parcel files of original documentation related to the purchase of the real property or property interests.

i) Advise property owner on the Administrative Settlement process. Transmit to County 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.

j) Prepare final offer letter, documents of conveyance as necessary.

k) Appear and provide Expert Witness testimony as an Acquisition Provider when requested.

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.

m) Provide a monthly progress report per parcel by the 25th of the month with invoice.

n) The consultant shall, as part of this proposal, estimate 10% of the 55 parcels may end up in condemnation. The consultant shall be available for any meeting/hearings as requested by the County Attorney.

7) Closing Service Fees

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.

b) Acquisition Provider shall attend closings and provide closing services in conjunction with Title Company.

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 County for acceptance by the County Commissioners.

8) Relocation Assistance Services (N/A)

1) There are an estimated 0 relocations or displacements for this contract and L&G will provide relocation advisory services. L&G will compute replacement housing supplements (owner occupant and/or tenants)

2) L&G will provide advisory services to business displacements and relocate them effectively. (N/A)

3) TxDOT will review, approve and pay for all relocation costs as per ROW Agreement. (N/A)

9) Condemnation Support

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.

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, Pre-appraisal 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 Court 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.

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.

d) 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.

ADDITIONAL RESPONSIBILITIES

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

Whenever possible, 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, to the extent possible, 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**.

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

Design Responsibilities

The **engineer** is responsible for design errors and/or omissions that become evident before, during or after construction of the project. The **Engineer's** responsibility for all questions arising from design errors and/or omissions will be determined by the **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 Company.

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
ROW Acqusition Services	Mission Office

The work effort will be managed out of the Mission (City) office located at 900 South Stewart Rd. (Address), Mission (City), Texas (State).

APPENDIX A - PLAN SHEET SEQUENCE PROCEDURE

1. Title Sheet
   Detailed Index of Sheets

2. Typical Sections

3. General Notes and Specifications Data

4. Estimate and Quantity Sheets

5. Storm Water Pollution Prevention Plan (SW3P) Sheets

6. Traffic Control Plans
   a. Sequence of Construction Layouts
   b. Detour Plan/Profile/Typical Sections/Quantities

7. Roadway Layouts
   a. Roadway Plan/Profile Sheets
   b. Intersection Plan/Profile Sheets
   c. Intersection Layouts
   d. Alignment Layouts/Data
   e. Ramp Layouts/Profiles
   f. Connection Roads/U-turns Layouts/Profile

8. Roadway Details
   a. Concrete Pavement Details/Standards
   b. Concrete Pavement Terminal Anchorage Details/Standards
   c. Bridge Approach Details/Standards
   d. Bridge Terminal Anchorage Details/Standards
   e. Roadway/Median Barrier Details/Standards
   f. Curb Details
   g. Driveway Details/Typical Sections/Standards

9. Signing Layouts and Marking Layouts

10. Traffic Signal Layouts

11. Lighting Layouts

12. Illumination Detail Standards (HMID, HMIF, HMIP, RID)

13. Utility Layouts/Profiles

14. Drainage Area Maps and Hydraulic Data
    a. General Drainage Area Maps
    b. Stage-Discharge Curves
    c. Main Cross-Drainage Culvert/Bridge Hydraulic Data
    d. Drainage Area Maps/Culverts/Storm Sewer
    e. Hydraulic Data/Culverts/Inlets/Storm Sewer/Pumps

APPENDIX A - PLAN SHEET SEQUENCE PROCEDURE (Continued)

15. Detailed Drainage Plans
    a. Drainage Plan/Profile Sheets (Storm Sewer Plan/Profile Sheets)
    b. Channel Plan/Profiles/Typical Sections
    c. Box Culvert Plan/Profile
    d. Pipe Sewer/Culvert Cross Sections

16. Drainage Structural Details/Standards
    a. Inlet Details/Standards
    b. Manhole Details/Standards
    c. Junction Box Details/Standards
    d. Safety End Treatment Details/Standards
    e. Box Culvert Details/Standards
    f. Culvert Wingwall Details/Standards
    g. Excavation-Backfill Diaphrams
    h. Riprap Details/Standards
    i. Temporary Pollution and Erosion Control Details

17. Pumphouse Layouts

18. Pumphouse Details

19. Pumphouse Standard Details

20. Bridge Layouts/Profile/Typical Sections*

21. Bridge Details*
    a. Summary of Bridge Quantities
    b. Abutments
    c. Interior Bents
    d. Spans
    e. Special details for the specific bridge

22. Bridge Standard Details*

23. Bridge Railing Standards

NOTE: Variations of these plan sheet sequence guidelines may be permitted if approved in writing by the COUNTY.

APPENDIX A - PLAN SHEET SEQUENCE PROCEDURE (Continued)

24. Retaining Wall Layouts/Profiles**

25. Retaining Wall Details**

26. Retaining Wall Standard Details**

27. Guard Fence/Standards and Signal Pole Standards

28. Signal/Electrical Details/Standards and Signal Pole Standards

29. Signing/Markers/Striping Details/Standards

30. Barricade/Construction/Beacon Standards

31. Miscellaneous Standards
    a. Chain Link Fence Standards
    b. Bridge End Detail/Standards
    c. Roadway Clearance Details/Standards
    e. Attenuator Standards

APPENDIX B - PLAN PREPARATION PROCEDURES

1. Title Sheet
   The **ENGINEER** shall be responsible for completing the title sheet as required and formatted by the **STATE** and as discussed in Part V of the Highway Design, Operations and Procedures Manual. Refer to Section K - Plans, 1 - Title Sheets, page 5-24, for the procedure to be used regarding all plans prepared by the **ENGINEER**.

2. Project Layout
   The project layout shall clearly depict the entire project as it is proposed and will usually be drawn at a scale of 1 inch=100 feet or 1 inch=200 feet, depending on the size of the project.

3. Typical Sections
   See Part IV of the Highway Design, Operations and Procedures Manual.

4. Sequence of Work Sheets (Traffic Control Plan)
   Clarity and completeness should be the rule to follow in preparing these sheets, with particular attention given to location of construction signs and barricades, lane widths, protection of drop offs, etc. For a reference guide use the Texas Department of Transportation, Texas Manual on Uniform Traffic Control Devices. Usual scale of 1 inch=100 feet and/or 1 inch=50 feet for special locations. A narrative sequence shall be included in the special provisions for the project. Staging of structural elements shall be considered. Provisions for drainage shall be considered, included and indicated during all stages of construction operations.

5. Removal Item Sheets
   These sheets indicate removal of existing facilities necessary to the proposed construction. (1 inch=40 feet) (use same scale as plan/profile sheets).

6. Summary Sheets
   Summary Sheets are required to indicate type, quantity and/or location of work for individual items of the proposed project.

7. Alignment Layout Sheets
   These sheets indicate the horizontal alignment with curve data and coordinates usually tabulated thereon. On some projects, depending on size, this information may be included on the plan profile sheets. Usual scale (1 inch=100 feet) or (1 inch=40 feet).

8. Plan Profile Sheet
   Clarity and completeness should be the rule to follow in preparation of these sheets. Usual scale (1 inch=40 feet or 1 inch=50 feet) or (1 inch=20 feet), depending on project complexity.

9. Drainage Area Maps
   Usual scale (1 inch=100 feet) and/or (1 inch=200 feet) supplemented by large scale area maps as necessary.

10. Drainage Plan Profile Sheets
    These sheets may be required on some projects to clearly depict location of inlets, storm sewer lines, and profile of storm sewer lines and laterals. Usual scale (1 inch=40 feet or 1 inch=50 feet) or (1 inch=20 feet). Storm sewer design does include redesign of storm sewers imposed by utility constraints developing after initial reviews by the **STATE** and consequential redesign and adjustments.

APPENDIX B - PLAN PREPARATION PROCEDURES (Continued)

11. Runoff, Inlet, Storm Sewer and Culvert Sheets
Use standard sheets.

12. Culvert Cross Sections and Details
District standard reproducible sheets can be furnished (one each) to the **ENGINEER** for modification of special designs.

13. Manhole and Inlet Details
District standard reproducible sheets can be furnished (one each) to the **ENGINEER**.

14. Miscellaneous Detail
Curb, Sidewalk, Driveways, etc.

15. Intersection Details

16. Marking Layouts and/or Details
Layouts of the entire project with markings depicted thereon. Usual scale 1:500 (1 inch=40 feet or 1 inch=50 feet). On some projects typical details might suffice.

17. Structural Details
Bridge layout sheets shall have the same horizontal and vertical scale. Usually (1 inch = 10 feet) (1 inch = 20 feet). Sections of existing and proposed structures usually have a scale of (1 inch = 5 feet). Elements of the bridge (abutments, bents, slabs, etc.) shall be detailed to a (1/2 inch = 1 foot) or (1/4 inch equals 1 foot) architect scale to provide clear legible drawings when reduced. Letters 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).

18. Overhead Sign Bridge Layouts
A maximum of four structures may be shown on each layout sheet. The reference to the appropriate overhead sign bridge (OSB) standard and the following requirements shall be shown on the layout: (1) Drilled shaft size and length (2) Soil strength used for design {indicate basis and boring(s) used} (3) Design height (4) Tower height (5) Leg spacings and (6) Design wind speed. The wind speed design map need not be included in the project plans. Designation of tower member size and anchor bolt size shall not be shown. For OSBs which require special design, the design shall be in accordance with the AASHTO sign specifications (see Item 22 of References on page 49) and to the same loading requirements as for normal standard structures. Structures (special or standard) which will have changeable message signs shall be analyzed by the **ENGINEER**.

APPENDIX C - GENERAL PLAN CHECKLIST

Services Provided By: Engineer	County	
YES	N/A	Title Sheet
YES	N/A	Project Layout
YES	N/A	Sequence of Work
YES	N/A	Detour Layouts & Profiles
YES	N/A	Construction Pavement Markings
YES	N/A	Signing & Barricades
YES	N/A	Construction Sign & Beacons
YES	N/A	Typical Sections
YES	N/A	Shaping & Finishing Sections
YES	N/A	Slopes Adjacent to Shoulders
YES	N/A	Estimate & Quantities
YES	N/A	General Notes & Specification Data
YES	N/A	Grading Summary
YES	N/A	Miscellaneous Summaries (See following "SUMMARIES" heading)
YES	N/A	Horizontal Curve Data & Alignment Layouts
YES	N/A	Drainage Summaries
YES	N/A	Structure Summaries
YES	N/A	Erosion Control Summary & Details
YES	N/A	Plan/Profile Sheets
YES	N/A	Erosion Control Summary & Details
YES	N/A	Pavement Contours
YES	N/A	Superelevation Transition (If Required)
YES	N/A	Grading Contours
YES	N/A	Guard Fence Layouts
YES	N/A	Storm Water Pollution Prevention Plans (SW3P)
YES	N/A	Drainage Area Maps
YES	N/A	Hydraulic Data
YES	N/A	Drainage Sheets
YES	N/A	Bridge Hydrology Sheets
YES	N/A	Inlet & Manhole Details
YES	N/A	Utility Support Details
YES	N/A	Culvert Cross Sections & Details
YES	N/A	Special Culvert Designs
YES	N/A	Special Drainage Details
YES	N/A	Chain Link Fence Locations
YES	NO	Ramp Details Sheet
YES	N/A	Removal Item Sheet - Including detours (Shown in detour summary, No payment for removal; subsidiary to construction detours)
YES	NO	Pavement Details
N/A	N/A	Pavement Standard Modification for Concrete Shoulder
N/A	N/A	Concrete Pavement Continuously Reinforced (CPCR)

APPENDIX C - GENERAL PLAN CHECKLIST (Continued)

Services Provided By: Engineer	County	
N/A	N/A	Concrete Pavement Contraction Design (CPCD)
N/A	N/A	Concrete Pavement Details - Jointed Reinforced (Steel Bars) (CPJR)
YES	N/A	Bridge Approach Slab Details
YES	N/A	Vehicle Attenuator Details
YES	N/A	Miscellaneous Details
YES	N/A	Wheelchair Ramps
YES	N/A	Pavement Marking Details
YES	N/A	Modified Standards
YES	N/A	List of Standards
YES	N/A	Permanent Signing Plans & Quantities
YES	N/A	Permanent Lighting Plans, Quantities & Standards
YES	N/A	Bridge Layout(s)
YES	NO	Bridge Details
YES	N/A	Retaining Wall Layout(s)
YES	N/A	Retaining Wall Details
N/A	N/A	Pumphouse Details
YES	N/A	Underdrain Details (Retaining Walls)
YES	N/A	Culvert Standards
N/A	N/A	Soil Profile
YES	N/A	Temporary Traffic Signals
YES	N/A	Design Cross Sections
YES	NO	Estimate
YES	N/A	List of Standard Specification, Special Provisions & Special Specifications
YES	N/A	Detour Special Provisions (If Required)
YES	N/A	Construction Time Estimate
NO	N/A	Critical Path Method (CPM)
YES	NO	Unit Price Documentation

APPENDIX C - GENERAL PLAN CHECKLIST (Continued)

Services Provided By:
Engineer County

Miscellaneous

YES N/A Conduit Requirements
YES N/A Traffic signal Requirements

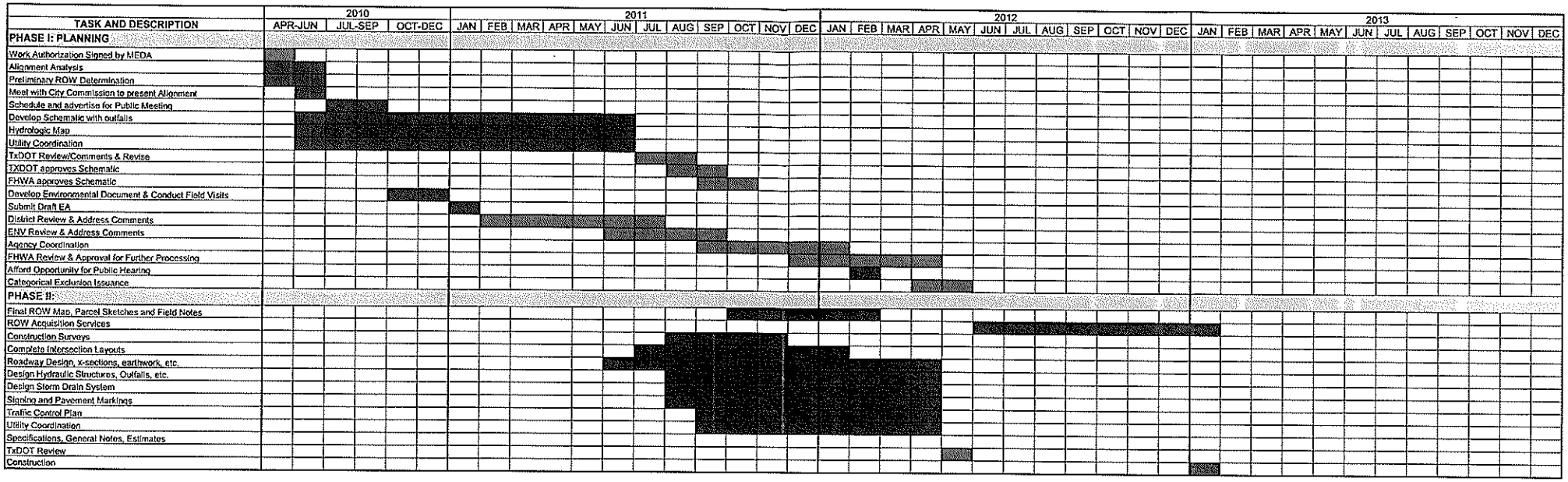
Summaries **(ALL BELOW YES FOR ENGINEER AND NO FOR COUNTY UNLESS NOTED OTHERWISE)**

___ ___ Salvaging and Placing Topsoil
___ ___ Prepare ROW
___ ___ Remove Old Structures
___ ___ Scarify Existing Pavement
___ ___ Remove Old Concrete Curb of Curb and Gutter (C&G)
___ ___ Remove Old Concrete Pavement
___ ___ Remove Old Concrete Riprap
___ ___ Remove Metal Beam Guard Fence
___ ___ Galvanized steel Beam Guard Fence (12Ga) (GSBGF)
___ ___ Temporary Guard Fence (TEMPGF)
___ ___ Summary of Concrete Flumes
___ ___ Curbs
___ ___ Adjust Manholes & Inlets
NO ___ Underdrains
___ ___ Base and Pavement
___ ___ Large Structure
___ ___ Concrete Riprap (RR8 & RR9)
___ ___ Temporary Portable Concrete Barrier (PCBR)
___ ___ Concrete Traffic Barrier
___ ___ Vehicle Attenuator
___ ___ Guard Rail Energy Absorbing Terminal (Great System)
___ ___ Pavement Markings & Blast Cleaning (Thermoplastic)
___ ___ Retaining Walls
___ ___ Large Structure Summaries
___ ___ Small Structure Summaries
___ ___ Earthwork (Roadway & Channel) & Channel Details
___ ___ Culverts
___ ___ Detours
___ ___ Seeding or Mulch Sod - Quantity Only
___ ___ Inlet & Manholes
___ ___ Sidewalks
___ ___ Construction Pavement Markings
___ ___ Driveways
___ ___ Concrete Median
___ ___ Storm Sewers
___ ___ Head Walls & Safety End Treatments
___ ___ Curb Openings
___ ___ Manholes
___ ___ Chain Link Fence, Remove & Replace Chain Link Fence
___ ___ Remove & Relay Reinforced Concrete Pipe (RCP) or Pipe Sewer

PROJECT: MILE 2 NORTH
LIMITS: from SH 107 (Conway) West to La Homa Road (SH 364)

EXHIBIT "C"
WORK SCHEDULE

7/29/2011



L&G ENGNEERING TASK
CITY TASK
STATE TASK

EXHIBIT "D"
FEE SCHEDULE

	TOTAL PROJECT ESTIMATE AND ENGINEERING FEE FOR MILE 2 (PROJECT 2B) COUNTY ROADWAY
ROADWAY PROJECT:	**MILE 2 (PROJECT 2B)**
LIMITS:	MOOREFIELD ROAD TO LA HOMA ROAD (SH 364)
EXISTING ROADWAY SECTION:	2-LANE RURAL
EXISTING ROW WIDTH:	VARIES 40-FT TO 70-FT
PROPOSED ROADWAY SECTION:	4-LANE URBAN ROADWAY
PROPOSED ROW WIDTH:	70-FT
AVAILABLE FUNDING AT MPO...(From MPO TIP Program - CAT 7 FUNDING).....	$1,246,000.00
ESTIMATED CONSTRUCTION COST...($2.1 Mil/Mile).....	$1,050,000.00
LENGTH: (MILES).....	0.54

ESTIMATED PROJECT COSTS	*STATE/FED*	*LOCAL*
ROADWAY CONSTRUCTION COST (80/20 minus EDC) Assume (95/5)	$997,500.00	$52,500.00
PHASE I - PLANNING -		
Schematic		PAID
Preliminary Office ROW Mapping		PAID
Hydrologic Map for identification of Proposed Outfalls		PAID
Preliminary utility Research for Schematic Identification and cost		PAID
Public Involvement and Environmental Document		PAID
PHASE II - DESIGN, RIGHT OF WAY COSTS AND CONST. INSPECTION WORK AUTH. NO. 9		
Compensible Utilities (Estimated) (Eligible for 80/20)	$ 103,320.00	$ 25,830.00
Eng work Associated with Coordinating Adjustment of Compensable Utilities		$ 45,878.33
Hydrologic Map for the merging of Drainage Basin from Mile 2 to La Homa		$ 30,000.00
ROW Mapping & ROW Field Recovery		$ 56,500.00
Roadway Right-of-Way Costs (Land, Relocations ..)(Eligible for 80/20)	$ -	$ 93,000.00
Outfall Roadway Right-of-Way Costs (land)(Eligible for 80/20)	$ -	$ -
Roadway Right-of-Way Costs - **Acq.Services**		$ 130,500.00
PS&E Development (7% of construction cost)		$ 73,500.00
Design Surveys		$ 21,600.00
Design of Irrigation Structures and Outfalls		$ 15,000.00
Surveys for Outfalls		$ 15,000.00
Signing		$ 11,329.30
Pav't Markings		$ 6,323.80
Signal Design		$ 12,974.90
TxDOT Construction Inspection (11%) (80/20 minus EDC) Assume 95/5	$ 109,725.00	$ 5,775.00
L&G Construction Management		$ 72,000.00
ESTIMATED SUB-TOTAL	**$1,210,545.00**	**$667,711.33**
ESTIMATED TOTAL PROJECT COST		**$1,878,256.33**
ESTIMATED AVAILABLE FUNDS FOR PROJECT AT MPO		**$1,246,000.00**

Work Auth. No. 1 **$ 490,606.33**

ESTIMATED LOCAL PARTICIPATION ABOVE THE ISSUED WORK AUTHORIZATION **$177,105.00**

State/FED Eligible Estimated Cost for MPO Funding

Estimated Local Participation above the Issued Work Authorization

Total Project Estimated Cost

Items not included in Work Authorization

8/2/2011