



September 11, 2026

Hon. Norie Gonzalez Garza
Mayor, City of Mission
Attn: Mr. Andy Garcia and Juan Pablo Terrazas, P.E., Co-Interim City Managers
1201 E. 8th Street
Mission, Texas 78572

**RE: City of Mission On-Call Professional Services Contract 4/2009
Supplemental No. 1 to Work Authorization No. 34 – Inspiration Road/Military Loop
Project**

Dear Ms. Garza:

As per the discussion with Mr. Juan “JP” Terrazas on September 9, 2026, L&G Consulting Engineers is submitting Supplemental No. 1 to Work Authorization No. 34 for the Inspiration Road / Military Loop Project (From: US 83 Expressway on Inspiration Road South to Military Road and East on FM 1016).

This Supplemental is needed to Split the Project into two individual projects and to incorporate the City of Mission’s Utility Adjustments into the Plan Set.

This Supplemental is in the amount of **\$206,596.78.00** as identified in the Attached Exhibit D. The following is the funding breakdown for L&G Engineering’s proposed fees associated with this Supplemental.

Attached are the following documents:

- Two Partially Executed Originals of Supplemental No. 1 to Work Authorization No. 34 for the Inspiration Road / Military Loop Project with the following attachments:
 - Form 1295 – Certificate of Interested Parties
 - Exhibit A – Services to be provided by the Owner
 - Exhibit B – Scope of Services to be provided by the Engineer
 - Exhibit C – Work Schedule
 - Exhibit D – Project Fee Schedule

Please sign both originals and return one to our office for our records. Thank you for the opportunity to offer our services to the City of Mission. We appreciate your consideration and look forward to serving your needs.

Sincerely,
L & G ENGINEERING

Armando J. Sandoval, P.E.
Project Manager

Attachments

SUPPLEMENTAL WORK AUTHORIZATION NO. 1 TO WORK AUTHORIZATION NO. 34

THIS SUPPLEMENTAL WORK AUTHORIZATION is made pursuant to the terms and conditions of Contract Agreement, executed on April 27, 2009 hereinafter identified as the "Contract", entered into by and between **City of Mission**, hereinafter called the ("Owner") and **L & G Engineering**, hereinafter called the ("Engineer").

The following terms and conditions of Work Authorization 34, for the Inspiration Road/Military Parkway Project (from: US 83 to FM 1016):

The scope of work for said services is better defined in the following Exhibits:

- Exhibit A "Services to be provided by the Owner"
- Exhibit B "Services to be provided by the Engineer"
- Exhibit C "Work Schedule"
- Exhibit D "Fee Schedule"

Work Authorization No. 34 is hereby amended as identified in Exhibit D, "Fee Schedule". Work Authorization No. 34 has increased from \$3,728,854.00 to \$3,935,450.78 Supplemental No. 1 to Work Authorization No. 34 is in the amount of \$206,596.78.

This Supplemental is needed to Split the Project into two individual projects and to incorporate the City of Mission's Utility Adjustments into the Plan Set.

This Supplemental Work Authorization shall become effective on the date of final execution of the parties hereto. All other terms and conditions of Work Authorization No. 34, not hereby amended, are to remain in full force and effect.

IN WITNESS WHEREOF, this Supplemental Work Authorization is executed in duplicate counterparts and hereby accepted and acknowledged below.

CITY OF MISSION

By: _____

Norie Gonzalez Garza
Typed or Printed Name

Mayor, City of Mission
Title

Date

L&G ENGINEERING

By: _____

Jacinto Garza, P.E.
Typed or Printed Name

CEO/President
Title

Date

LIST OF EXHIBITS:

Exhibit "A" Services to be provided by the Owner
Exhibit "B" Services to be provided by the Engineer
Exhibit "C" Work Schedule
Exhibit "D" Fee Schedule

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

1 of 1

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

OFFICE USE ONLY CERTIFICATION OF FILING

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

L&G Consulting Engineers, Inc.
Mercedes, TX United States

Certificate Number:
2026-1513840

Date Filed:
09/10/2026

Date Acknowledged:

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

City of Mission

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

Contract 4/2009

2009 On-Call Professional Services Contract - Supplemental No. 1 to WA#34 Inspiration Rd/Military Parkway Loop (Sections 1 & 2A) from US 83 S to Military Highway and from E of Schuerbach Rd of FM 1016

4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary
	Sandoval, P.E. , Armando	Mission, TX United States		X
	Garza P.E., Jacinto	Mercedes , TX United States	X	

5 Check only if there is NO Interested Party.

☐

6 UNSWORN DECLARATION

My name is Jacinto Garza, P.E., and my date of birth is 10/23/1961.

My address is 2100 W Expressway 83, Mercedes, TX, 78570, USA
(city) (state) (zip code) (country)

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

Executed in Hidalgo County, State of Texas, on the 10th day of September, 20 26.
(month) (year)


Signature of authorized agent of contracting business entity
(Declarant)

City of Mission
Madero International Bridge Connecting Roadways Project
(from US83 Expressway on Inspiration Road South to Military Road and East on FM 1016)
Supplemental No. 1 to Work Authorization No. 34

EXHIBIT "A"
Services to be provided by the City

1. The City will issue work authorization to initiate all required services and designate the authorized representative of the coordination of each work authorization.
2. The City will provide copies of all subdivision plats of record and/or in the subdivision process.
3. The City 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 City will process all acceptable requests for payment in a timely manner.

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

SECTION 1-PROJECT DESCRIPTION

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

COUNTY/CITY: HIDALGO COUNTY / MISSION TEXAS

CONTROL: _____

PROJECT/DESCRIPTION: _____

LENGTH: 4.46 MILES

HIGHWAY: Inspiration Road/Military Parkway Loop (Section 1 & 2A)

LIMITS: From US 83 South to Military Highway &
From East of Schuerback Rd to FM 1016

PROJECT CLASSIFICATION

(Place an "X" in only one Project Classification)

- ☐ Surface Treatment
- ☐ Overlay
- ☐ Rehabilitation Existing Road (Scarify & Reshape)
- ☐ Convert Non-Freeway to Freeway
- ☐ Widen Freeway
- ☒ Widen Non-Freeway
- ☐ New Location Toll Freeway
- ☐ New Location Non-Freeway
- ☐ Interchange (New or Reconstruct)
- ☐ Bridge Widening or Rehabilitation
- ☐ Bridge Replacement
- ☐ Upgrade to Standards - Freeway
- ☐ Upgrade to Standards - Non-Freeway
- ☐ Miscellaneous Studies (Use Function Code 110 for All Tasks)

ENGINEER shall mean L&G Engineering.

STATE shall mean Texas Department of Transportation.

LPA shall mean Local Public Agency City of Mission.

COUNTY shall mean Hidalgo County

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

SECTION 7 - ROADWAY DESIGN CONTROLS

(Function Code 160)

Services
Provided By:
ENGINEER LPA

Y
N

N
N

1. Geometric Design
 - a. Horizontal and Vertical Alignment
 - b. Schematic Layout
 - (1) The location of interchanges, main lanes, grade separations, frontage roads and ramps.
 - (2) Develop vertical and horizontal alignment of main lanes, ramps and cross roads at proposed interchanges or grade separations. Frontage road alignment data need not be shown on the schematic; however, it should be developed in sufficient detail to determine ROW needs. The degree of horizontal curves and vertical curve data, including "K" values, shall also be shown for ease of checking.
 - (3) For freeways, show the location and text of the proposed main lane guide signs. Lane lines and/or arrows indicating the number of lanes shall also be shown.
 - (4) A complete explanation of the sequence and methods of stage construction, if proposed, including the initial and ultimate proposed treatment of crossovers and ramps.
 - (5) The tentative ROW limits.
 - (a) Provide a roadway Design System (RDS) or (GEOPAK) computer tape of the preliminary earthwork to verify ROW requirements.
 - (b) Provide a graphics file containing the approved schematic.
 - (6) The geometric (pavement cross slopes, lane and shoulder widths, slope rates for fills and cuts) of the typical sections of proposed highway main lanes, ramps, frontage roads, and cross roads.
 - (7) The current and projected traffic volumes as provided by the TxDOT (20 year traffic projection, unless otherwise determined by the District Engineer).
 - (8) The control of access lines if Interstate or designated under House Bill 179.
 - (9) Direction of traffic flow on all roadways.
 - (10) Location and width of median openings for highway without access control.
 - (11) The geometric of speed change (acceleration, deceleration, climbing) lanes.

N

N

2. General Guidelines for Project Development
 - a. Prior to preparing detailed plans for a proposed project, a preliminary schematic layout shall be prepared which indicates the general geometric features and location requirements peculiar to the project. An uncontrolled aerial mosaic will be provided for this use. Four copies of the schematic layout shall be submitted through the district to the Design Division for approval and subsequent coordination with the Federal Highway Administration (FHWA) where applicable. The layout shall be submitted for two-lane arterial highway projects on new locations and for all multi-lane highway projects. **No geometric design is to be performed until the LPA has given the engineer written approval of the preliminary schematic layout.**
 - b. All geometric design shall be in conformance with the State's Design Division, Operations and Procedures Manual, except where variances are permitted in writing by the STATE.
 - c. The schematic layout shall include basic information which is necessary for the proper review and evaluation including the items listed above in the checklist for schematic layout.
 - d. Handling of traffic during construction shall be a consideration in the development of preliminary designs.

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Services
Provided By:
ENGINEER LPA

N

N

2. General Guidelines for Project Development (*continued*)

- e. Upon approval of the schematic layout by Design Division (FHWA on Federal-aid projects), it shall be the basis for an exhibit at any required public hearing prior to final development of the project. If there are any changes to the schematic after the Design Division and FHWA approval and before the public hearing, four copies of the revised schematic, as displayed at the hearing, shall be submitted either prior to or accompanying the public hearing data. If there are no changes in the schematic as displayed at the hearing, only photographs of the schematic and other displays shall be submitted with the public hearing data.
- f. For all freeway construction projects, these schematics shall show the location and text of the proposed main lane guide signs. A schematic layout shall be submitted through the district to the Traffic Operations Division, Traffic Safety Section for approval and subsequent coordination with the FHWA. All signing shall be in conformance with the Texas MUTCD.
- g. On complex projects, informal contact through the district with the Design Division and FHWA personnel is encouraged with regard to development of preliminary design prior to official schematic submission.
- h. The engineer shall furnish a project tape that is compatible with the STATE's computer system, a project listing, and a cross section plot showing the original design sections containing the earthwork input and original cross sections for the project. **Accuracy of the earthwork design is of utmost importance since it is the basis for contractor payments and construction staking.**

N

N

3. Exhibit for Airway/Highway Clearance Permits

Y

N

4. Grading Design

- a. Refine the horizontal and vertical alignment of main lanes, frontage roads, ramps, cross roads and direct connectors based upon the approved schematic layout. Determine vertical clearances at grade separations and overpasses, taking into account the appropriate super elevation rate.
- b. Typical Sections
- c. Design Cross Sections
- d. Determine Cut and Fill Quantities
- e. Slope Stability Analysis
- f. Embankment Foundation Stability Analysis
- g. Embankment Settlement Analysis

Y

N

Y

N

Y

N

Y

N

N

N

N

N

5. Pavement Design

- a. Prior to initiating detailed plan preparations for a project, a preliminary investigation shall be made to determine the approximate section and pavement type to be used for the pavement structure. The Flexible Pavement Design Manual for flexible pavement, "Appendix F" of the Design Division, Operations and Procedures Manual, and the current AASHTO Guide for the Design of Pavement Structures, may be used for this purpose.
 - b. The typical section shall also reflect proposed geometric including pavement cross slopes, lane and shoulder widths, and slope rates whenever this data have not been previously shown on a schematic submission.
 - c. Embankment and Subgrade
 - (1) Soil Core Holes (Show cost estimate with Function Code 110)
 - (a) Along center line
 - (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)

N

N

N

N

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

Services
Provided By:
ENGINEER LPA

<u>N</u>	<u>N</u>
<u>N</u>	<u>N</u>
<u>N</u>	<u>N</u>
<u>N</u>	<u>N</u>
<u>N</u>	<u>N</u>
<u>N</u>	<u>N</u>
<u>N</u>	<u>N</u>

5. Pavement Design (*continued*)
 - c. Embankment and Subgrade (*continued*)
 - (2) Identify, interpret and summarize geologic features that affect engineering design (PI, Sulfate content, % of lime)
 - d. Traffic Data for Pavement Design
 - e. Basic Design Criteria
 - f. Life Cycle Cost Analysis(es)
 - g. Cost Data
 - h. Pavement Material Properties
 - i. Rehabilitation Investigations
 - (1) Core Hole Survey (Show cost estimate with Function Code 110)
 - (a) Determine type and depth of existing material, pavement, etc. The Engineer will determine whether to salvage ACP and FLEXBASE as well as their properties and provide this information to TxDOT.

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 8 - DRAINAGE

(Function Code 161)

Services
Provided By:
ENGINEER LPA

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

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

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

SECTION 9 - SIGNING, MARKINGS AND SIGNALIZATION

(Function Code 162)

Services
Provided By:
ENGINEER LPA

Y

N

1. Signing and Markings Layout
 - a. Requirements (Separate Layout)
 - (1) Roadway layout
 - (2) Center line with station numbering
 - (3) ROW lines
 - (4) Culverts and other structures that present a hazard to traffic
 - (5) Location of utilities, if not shown on plan and profile
 - (6) Existing signs to remain, to be removed, to be relocated
 - (7) Proposed signs (illustrated and numbered)
 - (8) Existing overhead sign bridges to remain, to be revised, removed or relocated
 - (9) Proposed overhead sign bridges indicating location by plan layout (electrical details need not be shown on this layout)
 - (10) Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation
 - (12) Quantities of existing pavement markings to be removed
 - (13) Proposed delineators and object markers
 - b. For projects involving freeway to freeway or other types of directional interchanges, projects including left-hand ramps or connections, the following information must be provided:
 - (1) The location of interchanges, main lanes, grade separations, frontage roads and ramps
 - (2) complete explanation of the sequence and methods of stage construction, where applicable, which would include the initial and ultimate proposed treatment of crossovers and ramps
 - (3) The number of lanes in each section of proposed highway and the location of changes in numbers of lanes
 - (4) The projected traffic volumes as provided by the STATE (20 year traffic projection, unless otherwise determined by the District Engineer)
 - (5) Tentative ROW limits
 - (6) Direction of traffic flow on all roadways
 - (7) Main lane, ramp, frontage road, and necessary cross road profiles at proposed interchanges or grade separations

Y

N

2. Summary of Small Signs Tabulation

N

N

3. Summary of Large Signs Tabulation including all Guide Signs

Y

N

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

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Services
Provided By:
ENGINEER LPA

- | | | |
|----------|----------|---|
| | | 5. Traffic Signals |
| | | a. Development of Justification (Warrant) Data |
| <u>Y</u> | <u>N</u> | (1) Location Map |
| | | Relationship of proposed installation to other traffic signals, highways, business areas and traffic generators |
| <u>Y</u> | <u>N</u> | (2) Photographs as appropriate |
| <u>Y</u> | <u>N</u> | (3) Accident data as appropriate |
| <u>Y</u> | <u>N</u> | (4) Vehicle volumes (provided by TxDOT) |
| <u>Y</u> | <u>N</u> | (a) Existing |
| <u>Y</u> | <u>N</u> | (b) Estimated |
| <u>Y</u> | <u>N</u> | (c) Projected |
| <u>Y</u> | <u>N</u> | (d) Pedestrian |
| <u>Y</u> | <u>N</u> | (5) Traffic Survey - Count Analysis |
| <u>Y</u> | <u>N</u> | (6) Recommendation based on above data |
| <u>Y</u> | <u>N</u> | b. Layout |
| | | (1) Title Sheet (when applicable) |
| | | (a) Describe the location |
| | | (b) Type of installation |
| | | (c) Area map with project limits for each location |
| | | (d) Index of sheets |
| | | (e) Space for official signatures |
| | | (2) Estimate and quantity sheet (when applicable) |
| | | (a) List of all bid items |
| | | (b) Bid item quantities |
| | | (c) Specification item number |
| | | (d) Paid item description and unit of measure |
| | | (3) Basis of estimate sheet (list of materials) |
| | | (4) General notes and specification data sheet |
| | | (5) Condition diagram |
| | | (a) Highway and intersection design features |
| | | (b) Roadside development |
| | | (c) Traffic control including illumination |
| | | (6) Plan sheet(s) |
| | | (a) Existing traffic control that will remain (signs and markings) |
| | | (b) Existing utilities |
| | | (c) Proposed highway improvements |
| | | (d) Proposed installation |
| | | (e) Proposed additional traffic controls |
| | | (f) When applicable, proposed conduit for Railroad interconnect with standard details for runs under tracks. |
| | | (g) Proposed illumination attached to signal poles. |
| | | (7) Notes for plan layout |
| | | (8) Elevation sheet(s) (span wire design) |
| | | (9) Phase sequence diagram(s) |
| | | (a) Signal locations |
| | | (b) Signal indications |
| | | (c) Phase diagram |
| | | (d) Signal sequence table |
| | | (e) Flashing operation (normal and emergency) |
| | | (f) Preemption operation (when applicable) |
| | | (g) Interval timing, cycle length and offset |

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

Services
Provided By:
ENGINEER LPA

- | | |
|---|---|
| <u>Y</u> <u>N</u> | 5. Traffic Signals <i>(continued)</i>
b. Layout <i>(continued)</i>

(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
(a) Confirm power source
(b) Discuss route of aerial or underground interconnect cable (when applicable)
(c) Adjustment of overhead utility lines
(2) Prepare governing specifications and special provisions list
(3) Prepare project estimate

d. Summary of Quantities |
| <u>Y</u> <u>N</u>
<u>Y</u> <u>N</u>
<u>Y</u> <u>N</u>
<u>Y</u> <u>N</u>
<u>Y</u> <u>N</u> | |

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 10 - MISCELLANEOUS (ROADWAY)

(Function Code 163)

Services
Provided By:
ENGINEER LPA

- | | | |
|----------|----------|---|
| | | 1. Retaining Walls |
| | | a. Structural Details |
| <u>N</u> | <u>N</u> | (1) Cast-in-Place Cantilever at _____ locations. (TxDOT Standard Retaining Wall)* |
| <u>N</u> | <u>N</u> | (2) Tiedback Retaining Wall at _____ location. (TxDOT standard retaining wall) |
| <u>N</u> | <u>N</u> | (3) Specialized Retaining Wall at _____ locations (Unique Design).* |
| <u>Y</u> | <u>N</u> | b. Alternate Patented Retaining Walls at all locations. (Layouts Only)** |
| <u>N</u> | <u>N</u> | (1) Mechanically Stabilized Earth |
| <u>Y</u> | <u>N</u> | (2) Concrete Block Wall Systems |
| | | 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) |
| <u>Y</u> | <u>N</u> | (10) Soil core hole locations |
| | | 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. |
| <u>N</u> | <u>N</u> | e. Foundation Studies (Show cost estimate with Function Code 110) |
| <u>N</u> | <u>N</u> | (1) The soil core holes shall be obtained at approximately 200 foot intervals along retaining wall alignments. The core holes shall extend 25 feet below the footing elevation. |
| <u>N</u> | <u>N</u> | f. Stability Analysis (the ENGINEER shall estimate this task as part of his bid to complete the work). |
| <u>N</u> | <u>N</u> | g. Estimate |
| <u>Y</u> | <u>N</u> | h. Summary of Quantities |
| <u>Y</u> | <u>N</u> | i. Typical X-section. |
| <u>Y</u> | <u>N</u> | 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. |

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

Services
Provided By:
ENGINEER LPA
Y N

2. Traffic Control Plan, Detours and Sequence of Construction

Traffic Control Plans (TCP) are required for all projects. A detailed TCP shall be developed when traffic handling during construction involves complications for which a feasible solution is not covered by the Texas MUTCD or the current Barricade and Construction (BC) Standards. The following items are required on all Traffic Control Plan Layouts:

- a. The sequence of construction and method of handling traffic during each phase.
- b. The existing and proposed traffic control devices that will be used to handle traffic during each construction sequence. Include signals, regulatory signs, warning signs, construction warning signs, guide signs, route markers, construction pavement markings, channelizing devices, portable changeable message signs, flashing arrow boards, barricades, barriers, etc.
- c. The proposed traffic control devices (stop signs, signals, flag person, etc.) at grade intersections during each construction sequence.
- d. Where detours are provided, typical cross sections shall be shown.
- e. Road construction work hours shall be developed after an investigation of the traffic volumes has been performed.

3. Illumination

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

b. Final Roadway Illumination and Electrical Circuit Layouts

- (1) Roadway layout showing pavement edges, shoulders, curbs, retaining walls, etc.
- (2) Center line with station numbering.
- (3) ROW lines.
- (4) Symbol legend. Use department standard symbols for lighting and electrical.
- (5) Culverts and other structures that present a hazard to traffic.
- (6) Location of underground utilities, if not shown on plan profile.
- (7) Location of overhead electrical lines, both crossing and parallel to ROW.
- (8) Existing sign lighting circuits and roadway illumination to remain, to be removed, to be relocated.
- (9) Existing service poles, electrical circuits, ground boxes, etc.
- (10) Contact electric utility for service pole locations, voltage characteristics.
- (11) Location of proposed sign lighting circuits and roadway illumination.
- (12) Proposed electrical circuits.
- (13) Tabulation of all quantities including proposed, existing to be relocated, existing to be removed. The layout sheet quantities and lighting summary shall be shown. Tabulations to include estimated quantity with a column for final quantities.

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Services Provided By:		
ENGINEER	LPA	
<u>N</u>	<u>N</u>	3. Illumination (<i>continued</i>)
		c. General Guidelines for Illumination (If applicable)
		The ENGINEER shall submit to the LPA, 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.
<u>N</u>	<u>N</u>	4. Miscellaneous Drafting/Standards
<u>N</u>	<u>N</u>	a. Erosion Control
		b. Landscape Development
<u>Y</u>	<u>N</u>	5. Compute and Tabulate Quantities
<u>Y</u>	<u>N</u>	6. Special Utility Details (Irrigation lines)
<u>N</u>	<u>N</u>	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.
<u>N</u>	<u>N</u>	(a) New O.S.B. structure(s)
<u>N</u>	<u>N</u>	(b) Structural evaluation of existing O.S.B. structure(s) that are to remain in place or to be relocated.
<u>N</u>	<u>N</u>	(2) High Mast Illumination Poles (HMIP)
<u>Y</u>	<u>N</u>	(3) Traffic Signal Supports
<u>N</u>	<u>N</u>	(4) Conventional Illumination Poles
<u>N</u>	<u>N</u>	(5) Sound Barrier Walls
<u>N</u>	<u>N</u>	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
<u>N</u>	<u>N</u>	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)
<u>N</u>	<u>N</u>	8. Agreements
<u>N</u>	<u>N</u>	a. Utility Agreements
<u>N</u>	<u>N</u>	b. Exhibits for Utility Agreements
<u>N</u>	<u>N</u>	c. Railroad Agreements
		d. Railroad Exhibits
<u>N</u>	<u>N</u>	(1) Railroad Underpasses
<u>N</u>	<u>N</u>	(2) Railroad Overpasses
<u>N</u>	<u>N</u>	(3) Railroad Grade Crossing (Replanking)
<u>N</u>	<u>N</u>	(4) Railroad Grade Crossing Warning Systems (Signals)
<u>N</u>	<u>N</u>	(5) Other Miscellaneous Sketches for Railroads
<u>N</u>	<u>N</u>	e. Traffic Signal Agreements
<u>N</u>	<u>N</u>	f. Exhibits for Traffic Signal Agreements
<u>N</u>	<u>N</u>	9. Estimate
<u>N</u>	<u>N</u>	10. Specifications and General Notes

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SECTION 11 - BRIDGE DESIGN

(Function Code 170)

Services
Provided By:
ENGINEER LPA

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

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

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

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

Services
Provided By:
ENGINEER LPA

Y

N

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

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Services
Provided By:
ENGINEER LPA

Y

N

2. Preparation of Bridge Layouts (each bridge) (*continued*)
 - c. Additional layout requirements for waterway structures and bridge classification culverts.
 - (1) Design and 100-year peak discharges.
 - (2) Design and 100-year high water (HW) (Recorded HW and date if available)
 - (3) Natural and through-bridge velocities for design and 100-year floods.
 - (4) Calculated backwater for design and 100-year floods.
 - (5) Direction of flow for waterway crossings.
 - (6) Contours for water crossing.

Y
N

N
N

3. Bridge Classification Culvert, Estimate, Quantities, and Specifications (each bridge)
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).

Y
Y
Y

N
N
N

5. Bridge Total Quantities and Cost Estimates (each bridge)
6. Bridge Special Provisions and Specifications (each bridge)
7. Bearing seat elevations for each beam or girder. Top of cap elevations for non-beam type structures.

Y

N

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 LPA 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.

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

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.

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

- (d) Field compaction testing of asphalt to ensure proper compaction during lay down operations.
- (e) Field inspection, sampling and laboratory testing of asphalt materials to determine their material properties and their compliance with project plans and specifications.
- (f) The ENGINEER will be responsible for concrete batching as well as the asphalt testing at the plants to insure delivery of acceptable material to the job site.
- (g) Any additional laboratory testing as required/requested by the LPA and the project plans and specifications.
- (h) Providing accurate and timely reports to the LPA and all/other recipients as designated by the LPA.
- (i) The ENGINEER will verify the concrete and asphalt designs to assure it is in accordance with TxDOT specifications to be developed by the contractor.

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

Document and Information Exchange

Data, Plan Sheets, General Notes and/or Specifications provided to the LPA shall be furnished on 8GB USB flash drives. Each 8 GB flash drive shall have a file titled Table of Contents. The Table of Contents shall indicate the locations of files within the directory structure of the documentation.

General Notes and specifications shall be provided in MS Office 2007 format. Plan sheets shall be provided in Microstation DGN or GEOPAK GPK format. PDF copies of plan sheets shall also be provided.

Two copies of the documentation shall be provided to the LPA.

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

CD Tape Required (YES or NO): YES

Proposal Time

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

Office Location

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

Service
PS&E

Office Location
Mission Office

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

EXHIBIT “C”
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

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
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

EXHIBIT “C”
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

APPENDIX A - PLAN SHEET SEQUENCE PROCEDURE (Continued)

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 Diaphragms
 - 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
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

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

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

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

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

APPENDIX B - PLAN PREPARATION PROCEDURES (Continued)

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.

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

APPENDIX C - GENERAL PLAN CHECKLIST

Services

Provided By:

ENGINEER LPA

<u>Y</u>	<u>N</u>	Title Sheet
<u>Y</u>	<u>N</u>	Project Layout
<u>Y</u>	<u>N</u>	Sequence of Work
<u>Y</u>	<u>N</u>	Detour Layouts & Profiles
<u>Y</u>	<u>N</u>	Construction Pavement Markings
<u>Y</u>	<u>N</u>	Signing & Barricades
<u>Y</u>	<u>N</u>	Construction Sign & Beacons
<u>Y</u>	<u>N</u>	Typical Sections
<u>Y</u>	<u>N</u>	Shaping & Finishing Sections
<u>Y</u>	<u>N</u>	Slopes Adjacent to Shoulders
<u>Y</u>	<u>N</u>	Estimate & Quantities
<u>Y</u>	<u>N</u>	General Notes & Specification Data
<u>Y</u>	<u>N</u>	Grading Summary
<u>Y</u>	<u>N</u>	Miscellaneous Summaries (See following "SUMMARIES" heading)
<u>Y</u>	<u>N</u>	Horizontal Curve Data & Alignment Layouts
<u>Y</u>	<u>N</u>	Drainage Summaries
<u>Y</u>	<u>N</u>	Structure Summaries
<u>Y</u>	<u>N</u>	Erosion Control Summary & Details
<u>Y</u>	<u>N</u>	Plan/Profile Sheets
<u>Y</u>	<u>N</u>	Erosion Control Summary & Details
<u>Y</u>	<u>N</u>	Pavement Contours
<u>Y</u>	<u>N</u>	Superelevation Transition (If Required)
<u>Y</u>	<u>N</u>	Grading Contours
<u>Y</u>	<u>N</u>	Guard Fence Layouts
<u>Y</u>	<u>N</u>	Storm Water Pollution Prevention Plans (SW3P)
<u>Y</u>	<u>N</u>	Drainage Area Maps
<u>Y</u>	<u>N</u>	Hydraulic Data
<u>Y</u>	<u>N</u>	Drainage Sheets
<u>Y</u>	<u>N</u>	Bridge Hydrology Sheets
<u>Y</u>	<u>N</u>	Inlet & Manhole Details
<u>N</u>	<u>N</u>	Utility Support Details
<u>Y</u>	<u>N</u>	Culvert Cross Sections & Details
<u>N</u>	<u>N</u>	Special Culvert Designs
<u>N</u>	<u>N</u>	Special Drainage Details
<u>N</u>	<u>N</u>	Chain Link Fence Locations
<u>N</u>	<u>N</u>	Ramp Details Sheet
<u>Y</u>	<u>N</u>	Removal Item Sheet - Including detours
<u>Y</u>	<u>N</u>	(Shown in detour summary, No payment for removal; subsidiary to construction detours)
<u>Y</u>	<u>N</u>	Pavement Details
<u>N</u>	<u>N</u>	Pavement Standard Modification for Concrete Shoulder
<u>N</u>	<u>N</u>	Concrete Pavement Continuously Reinforced (CPCR)
<u>N</u>	<u>N</u>	Concrete Pavement Contraction Design (CPCD)
<u>N</u>	<u>N</u>	Concrete Pavement Details - Jointed Reinforced (Steel Bars) (CPJR)
<u>N</u>	<u>N</u>	Bridge Approach Slab Details
<u>Y</u>	<u>N</u>	Vehicle Attenuator Details
<u>Y</u>	<u>N</u>	Miscellaneous Details
<u>Y</u>	<u>N</u>	Wheelchair Ramps
<u>Y</u>	<u>N</u>	Pavement Marking Details
<u>Y</u>	<u>N</u>	Modified Standards
<u>Y</u>	<u>N</u>	List of Standards
<u>Y</u>	<u>N</u>	Permanent Signing Plans & Quantities

EXHIBIT "C"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

APPENDIX C - GENERAL PLAN CHECKLIST *(continued)*

Services
Provided By:
ENGINEER LPA

<u>N</u>	<u>N</u>	Permanent Lighting Plans, Quantities & Standards
<u>Y</u>	<u>N</u>	Bridge Layout(s)
<u>Y</u>	<u>N</u>	Bridge Details
<u>Y</u>	<u>N</u>	Retaining Wall Layout(s)
<u>Y</u>	<u>N</u>	Retaining Wall Details
<u>N</u>	<u>N</u>	Pumphouse Details
<u>N</u>	<u>N</u>	Underdrain Details (Retaining Walls)
<u>Y</u>	<u>N</u>	Culvert Standards
<u>N</u>	<u>N</u>	Soil Profile
<u>Y</u>	<u>N</u>	Temporary Traffic Signals
<u>Y</u>	<u>N</u>	Design Cross Sections
<u>Y</u>	<u>N</u>	Estimate
<u>Y</u>	<u>N</u>	List of Standard Specification, Special Provisions & Special Specifications
<u>Y</u>	<u>N</u>	Detour Special Provisions (If Required)
<u>Y</u>	<u>N</u>	Construction Time Estimate
<u>Y</u>	<u>N</u>	Critical Path Method (CPM)
<u>Y</u>	<u>N</u>	Unit Price Documentation

Miscellaneous

<u>Y</u>	<u>N</u>	Conduit Requirements
<u>Y</u>	<u>N</u>	Traffic signal Requirements

Summaries

(ALL BELOW YES FOR ENGINEER AND NO FOR LPA UNLESS NOTED OTHERWISE)

<u> </u>	<u> </u>	Salvaging and Placing Topsoil
<u> </u>	<u> </u>	Prepare ROW
<u> </u>	<u> </u>	Remove Old Structures
<u> </u>	<u> </u>	Scarify Existing Pavement
<u> </u>	<u> </u>	Remove Old Concrete Curb of Curb and Gutter (C&G)
<u> </u>	<u> </u>	Remove Old Concrete Pavement
<u> </u>	<u> </u>	Remove Old Concrete Riprap
<u> </u>	<u> </u>	Remove Metal Beam Guard Fence
<u> </u>	<u> </u>	Galvanized steel Beam Guard Fence (12Ga) (GSBGF)
<u> </u>	<u> </u>	Temporary Guard Fence (TEMPGF)
<u> </u>	<u> </u>	Summary of Concrete Flumes
<u> </u>	<u> </u>	Curbs
<u> </u>	<u> </u>	Adjust Manholes & Inlets
<u> </u>	<u> </u>	Underdrains
<u> </u>	<u> </u>	Base and Pavement
<u> </u>	<u> </u>	Large Structure
<u> </u>	<u> </u>	Concrete Riprap (RR8 & RR9)
<u> </u>	<u> </u>	Temporary Portable Concrete Barrier (PCBR)
<u> </u>	<u> </u>	Concrete Traffic Barrier
<u> </u>	<u> </u>	Vehicle Attenuator
<u> </u>	<u> </u>	Guard Rail Energy Absorbing Terminal (Great System)
<u> </u>	<u> </u>	Pavement Markings & Blast Cleaning (Thermoplastic)
<u> </u>	<u> </u>	Retaining Walls
<u> </u>	<u> </u>	Large Structure Summaries
<u> </u>	<u> </u>	Small Structure Summaries

EXHIBIT "C" WORK SCHEDULE

Inspiration Rd.

From: IH-2 (US 83) To: Military Parkway

[illegible]

From: East of Schuerbach Rd. To: FM 1016

L&G FUNCTION
 ENVIRONMENTAL ASSESSMENT WORK
 TXDOT FUNCTION
 City of Mission FUNCTION

EXHIBIT D "FEE SCHEDULE" - Inspiration Road/Military Parkway Loop

L&G Consulting Engineers, Inc.

[illegible]

Total Sheets / Labor Hours		122	256	564	0	0	0	0	8	950
Hourly Base Rates		\$ 83.00	\$ 65.00	\$ 56.00	\$ 59.00	\$ 40.00	\$ 29.00	\$ 27.00	\$ 22.00	
Direct Salary Cost		\$ 10,126.00	\$ 16,640.00	\$ 31,584.00	\$ -	\$ -	\$ -	\$ -	\$ 176.00	\$ 58,526.00
Multiplier	3.53	\$ 35,744.78	\$ 58,739.20	\$ 111,491.52	\$ -	\$ -	\$ -	\$ -	\$ 621.28	\$ 206,596.78
Total Labor Costs		\$ 35,744.78	\$ 58,739.20	\$ 111,491.52	\$ -	\$ -	\$ -	\$ -	\$ 621.28	\$ 206,596.78