



Central Texas Regional
Mobility Authority

AGENDA ITEM #10 SUMMARY

Approve a new work authorization with HNTB Corporation relating to development of the US183/183A Intersection Improvement Project.

Approve a new work authorization with HNTB Corporation relating to the development of the US183/183A Intersection Improvement Project.

Department: Engineering

Associated Costs: \$653,371

Funding Source: General Fund; Reimbursed with TxDOT Pass-Through Financing

Board Action Required: Yes

Description of Matter:

The services to be performed by the GEC will include, but not be limited to, professional services and deliverables for various tasks related to the study, project development, final design and construction phase services for the US183/183A Intersection Improvement Project under TxDOT Pass-Through Financing. The improvements will include the widening of the northbound and southbound lanes of US 183 and 183A to accommodate auxiliary lanes and turning lanes. Improvements will also include turnaround lanes, reconfiguration of US 183 west of US 183 / 183A, reconstruction of the intersection of US 183 and CR 276, and realignment and extension of the existing Access Road. The existing signalization equipment at the US 183 / 183A intersection will also be removed and replaced with new signalization equipment that will accommodate the new intersection configuration and turning movement requirements.

Attached documentation for reference: Draft Work Authorization No. 10

Contact for further information: Wesley M. Burford, P.E., Director of Engineering

**GENERAL MEETING OF THE BOARD OF DIRECTORS
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

RESOLUTION NO. 11-___

**APPROVING A WORK AUTHORIZATION WITH HNTB CORPORATION
RELATING TO DEVELOPMENT OF THE US183 / 183A INTERSECTION
IMPROVEMENT PROJECT.**

WHEREAS, HNTB Corporation (“HNTB”) serves as a general engineering consultant to CTRMA under the Agreement for General Consulting Civil Engineering Services effective January 1, 2010 (the “GEC Agreement”); and

WHEREAS, by Resolution No. 11-014, dated February 23, 2011, the Board of Directors authorized the Executive Director to submit a proposal to the Texas Department of Transportation (“TxDOT”) pursuant to the Texas Transportation Commission’s Minute Order 112526 and the Pass-Through Toll Finance Program Call – 2011 for improvements to the intersection of the 183A Turnpike and US 183; and

WHEREAS, the Executive Director and HNTB have discussed and agreed to a proposed work authorization attached and incorporated into this resolution as Attachment A to begin development of the US183/183A Intersection Improvement Project activities provided by HNTB as a general engineering consultant; and

WHEREAS, the Executive Director recommends approval of the proposed work authorization.

NOW THEREFORE, BE IT RESOLVED that the proposed work authorization is approved; and

BE IT FURTHER RESOLVED that the Executive Director may finalize and execute the proposed work authorization in the form or substantially the same form as shown on Attachment A on behalf of CTRMA.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 7th day of December, 2011.

Submitted and reviewed by:

Approved:

Andrew Martin
General Counsel for the Central
Texas Regional Mobility Authority

Ray A. Wilkerson
Chairman, Board of Directors
Resolution Number: 11-___
Date Passed: 12/7/11

ATTACHMENT "A" TO RESOLUTION 11-
PROPOSED WORK AUTHORIZATION WITH HNTB CORPORATION

[on the following 24 pages]

APPENDIX D

WORK AUTHORIZATION

WORK AUTHORIZATION NO. 10.0

This Work Authorization is made as of this 7th day of December, 2011, under the terms and conditions established in the AGREEMENT FOR GENERAL CONSULTING ENGINEERING SERVICES, dated as of December 23rd, 2009 (the "Agreement"), between the Central Texas Regional Mobility Authority ("AUTHORITY") and **HNTB Corporation** ("GEC"). This Work Authorization is made for the following purpose, consistent with the services defined in the Agreement:

US 183 / 183A Intersection Improvement Project

Upon execution of this work authorization, the GEC will execute a separate subconsultant agreement with Baker-Aicklen & Associates, Inc. ("ENGINEER") to provide field surveying and professional engineering services for the development of preliminary and final construction documents for the project.

Section A. - Scope of Services

GEC:

A.1. GEC shall perform the following Services:

Please reference Attachment A – Scope of Work

A.2. The following Services are not included in this Work Authorization, but shall be provided by the GEC as Additional Services if authorized or confirmed in writing by the AUTHORITY.

Please reference Attachment A – Scope of Work

A.3. In conjunction with the performance of the foregoing Services, GEC shall provide the following submittals/deliverables (Documents) to the AUTHORITY:

Please reference Attachment A – Scope of Work

ENGINEER:

A.1.1. ENGINEER shall perform the following Services:

Please reference Attachment A1 – Services to be Provided by Baker-Aicklen & Associates, Inc.

A.2.1. The following Services are not included in this Work Authorization, but shall be provided by **ENGINEER** as Additional Services if authorized or confirmed in writing by the AUTHORITY.

Please reference Attachment A1 – Services to be Provided by Baker-Aicklen & Associates, Inc.

A.3.1. In conjunction with the performance of the foregoing Services, **ENGINEER** shall provide the following submittals/deliverables (Documents) to the AUTHORITY:

Please reference Attachment A1 – Services to be Provided by Baker-Aicklen & Associates, Inc.

Section B. - Schedule

GEC and **ENGINEER** shall perform the Services and deliver the related Documents (if any) according to the following schedule:

It is anticipated that services defined herein are expected to be substantially complete within eighteen (18) months from the date this Work Authorization 10.0 becomes effective. This Work Authorization 10.0 will not expire until all tasks associated with the Scope of Services are complete.

Section C. - Compensation

C.1. In return for the performance of the foregoing obligations, the Authority shall pay to the GEC the amount not to exceed \$ 653,371, based on a Cost Plus fee listed in *Attachment B – Fee Estimate for HNTB Corp. (GEC)*. Compensation shall be in accordance with the Agreement.

The GEC shall, in return for the performance of the foregoing obligations, pay to **ENGINEER** the amount not to exceed \$ 307,450, based on a Cost Plus fee listed in *Attachment B1 – Fee Estimate for Baker-Aicklen & Associates, Inc. (ENGINEER)*. Compensation shall be in accordance with a separate Agreement between the GEC and **ENGINEER**.

The Authority and the GEC agree that the budget amounts contained in *Attachment B-Fee Estimate for HNTB* and *Attachment B1 – Fee Estimate for Baker-Aicklen & Associates, Inc.* are estimates and that these individual figures may be redistributed and/or adjusted as necessary over the duration of this Work Authorization. The GEC and **ENGINEER** may alter the compensation distribution between tasks or work assignments to be consistent with the Services actually rendered within the total Work Authorization amount. Upon written approval by the Authority, GEC may alter the compensation distribution between Work Authorizations. The GEC shall not exceed the maximum amount payable without prior written permission by the Authority.

C.2. Compensation for Additional Services (if any) shall be paid by the Authority to the GEC according to the terms of a future Work Authorization.

Section D. - Authority's Responsibilities

The Authority shall perform and/or provide the following in a timely manner so as not to delay the Services of the GEC or ENGINEER. Unless otherwise provided in this Work Authorization, the Authority shall bear all costs incident to compliance with the following:

N/A

Section E. - Other Provisions

The parties agree to the following provisions with respect to this specific Work Authorization:

N/A

Authority:

**CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY**

By: _____

Name: Mike Heiligenstein

Title: Executive Director

Date: _____

GEC:

HNTB Corporation

By: _____

Name: _____

Title: _____

Date: _____

CENTRAL TEXAS RMA
ATTACHMENT A – SCOPE OF WORK
WORK AUTHORIZATION NO. 10

SERVICES TO BE PROVIDED BY THE GENERAL ENGINEERING CONSULTANT
(GEC)

General

The services to be performed by the GEC will include, but not be limited to, providing administrative oversight, providing engineering design services required to develop traffic signal and illumination plans, assisting with the development of the project specifications and contract documents, and performing the construction engineering & inspection and construction management services necessary to oversee the construction of the US183/183A Intersection Improvement Project. This will entail those professional services and associated deliverables required to complete the inspection and oversight activities associated with the management and administration of the contractor's (hereinafter referred to as the Contractor) activities.

Project Description

The Central Texas Regional Mobility Authority is proposing a pass-through finance project to improve safety and driver expectation issues at the US 183 and 183A intersection in Leander, Texas. The improvements will include the widening of the northbound and southbound lanes of US 183 and 183A to accommodate auxiliary lanes and turning lanes. Improvements will also include turnaround lanes, reconfiguration of US 183 west of US 183 / 183A, reconstruction of the intersection of US 183 and CR 276, and realignment and extension of the existing Access Road on the west side of the intersection. The existing signalization equipment at the US 183 / 183A intersection will also be removed and replaced with new signalization equipment that will fit the new intersection configuration and turning movement requirements.

The project will be constructed under traffic. Capacity for the anticipated daily traffic volumes on US 183, 183A, and CR 276 will be provided for throughout the different phases of construction whenever possible.

1.0 PROJECT MANAGEMENT/ADMINISTRATION

1.1. Project Management and Coordination

The GEC shall manage the administrative activities associated with the project. Assisting the ENGINEER with the establishment of project schedules and channels of communication will be included in this task. The GEC shall secure resources necessary to produce the project deliverables and meet the project schedule. Communications associated with the administration of this project will be directly channeled through the GEC for distribution to the project team as appropriate. The GEC shall designate one Texas Registered Professional Engineer Shawn B. Stover, P.E., as Project Manager to be responsible throughout the project for project management and communications, including billing, with the Authority.

At the Authorities request, the GEC will attend project status/milestone review meetings with the Authority, TxDOT, City of Leander, and others (assumes 10 meetings). These meetings will be facilitated by the ENGINEER to report on progress and to evaluate the project status, verify that the project is proceeding in compliance with the scope of services, determine necessary adjustments to the project work plan and schedule, plan upcoming events and discuss and resolve project technical issues. The ENGINEER will prepare minutes of each meeting and circulate to meeting attendees.

The engineering work on this project may be inspected by the Authority at any time.

1.2. General Administration

Perform general administration duties required to maintain the project. These duties include:

- 1.2.1. Coordination with ENGINEER: The GEC will prepare and execute contracts with ENGINEER and review and recommend approval of ENGINEER's progress reports and invoices. ENGINEER's progress reports and invoices will be incorporated into the monthly progress report and invoices submitted to the Authority.
- 1.2.2. Preparation of monthly progress reports and invoices: Invoices for work completed during the period will be submitted monthly for the GEC and will include all ENGINEER invoices (assumes 15 invoices). The invoice content and format will be in accordance with the specified criteria. Monthly progress reports will be prepared and submitted with monthly invoices for the work tasks completed by the GEC and the ENGINEER, together with evidence of services accomplished during the time period since the previous report (assumes 15 progress reports). Monthly progress reports will include:
 - Activities completed, initiated, or ongoing, during the reporting period for the GEC and ENGINEER.
 - Project action item
 - Overall status of project.
 - Pending issues that need short-term attention.

- 1.2.3. Record Keeping and File Management: Maintain and retain pertinent Project documentation. At the completion of the Project, submit documentation to the Authority for their archives, which may include document integration with the Authority's EDMS. Maintain a tracking database for correspondence, transmittals, requests for information, meeting minutes, action items, submittals, Inspector daily reports, project diary, project schedule, change orders, pay estimates, lien waivers, shop drawings, working drawings, erection drawings, catalog cut sheets, mix designs, non-conformance reports, payment certifications, Insurance and Bonds, material test data, schedules, audits, related technical data, and issues associated with the Project.
- 1.2.4. Correspondence: Prepare written materials, letters, survey forms, etc. used to solicit information or collect data for the Project and submit them to the Authority for review and approval prior to use or distribution. Copies of relevant incoming and outgoing correspondence will be provided to the Authority on a continuing basis.
- 1.2.5. Work Authorization Schedule: Monitor the ENGINEER's detailed work authorization schedule and alert ENGINEER of when critical dates, milestones, or deliverable dates are in jeopardy of being missed.

1.3. Project Development Support

The GEC will provide support to the Authority as required during the Project Development process. Specific efforts will include:

- 1.3.1. Engineering and Technical Support: Provide various engineering and technical tasks as requested by the Authority including but not limited to: general engineering assistance, general technology assistance, general environmental coordination, reports, research, presentations and meetings.
- 1.3.2. TxDOT, Williamson County, City of Leander, and Authority Coordination: Provide appropriate staff as part of coordination efforts between the Authority, TxDOT, Williamson County and the City of Leander. GEC will provide coordination efforts on the Authority's behalf at the direction of the Authority.
- 1.3.3. Assist with and/or develop Interlocal Agreements (ILAs) as necessary for development of the project, as directed by the Authority.
- 1.3.4. Project Development Agreement (PDA): Assist in the development of the PDA, which includes PDA exhibits, review of PDA drafts, and TxDOT coordination support, as directed by the Authority.
- 1.3.5. CAMPO Coordination: Provide appropriate assistance to update the CAMPO TIP/STIP, as directed by the Authority.
- 1.3.6. Provide DBE Outreach and Public Involvement support as requested by the Authority.

1.4. Financial Planning Support

- 1.4.1. Prepare comprehensive project budget in coordination with the Authority, as directed by the Authority.

2.0 DESIGN SERVICES

This scope of services includes professional services and deliverables in support of the Authority's development of the US 183/183A Intersection Improvement Project.

2.1. Design Services

This task involves assisting the Authority with professional consulting services that include preliminary and final engineering design services.

- 2.1.1. Design Standards: This project shall be designed in accordance with the following:

- *TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges.*
- *AASHTO Guidelines for the Design of Bicycle and Pedestrian Facilities.*
- *Texas Department of Licensing and Regulation (TDLR) and American's With Disabilities Act (ADA) requirements.*

- 2.1.2. Owner Reviews: Prior to ENGINEER's design milestone submittals, provide a cursory review of the ENGINEER's design work to identify major design related issues that may not meet current civil or structural design practices. Reviews will be completed at the 30%, 90%, and final plan stages.

- 2.1.3. Design and Survey:

- ENGINEER Design - (**see Attachment A1 ENGINEER scope**)
- ENGINEER Survey - (**see Attachment A1 ENGINEER scope**)
- Develop design plan sheets for the traffic signals and illumination to be included in this project. GEC will provide required plan sheets to ENGINEER for inclusion into the construction documentation.
 - Develop existing conditions, proposed signal and lighting layouts, wiring diagrams, and details (1" = 100').
 - Identify and provide applicable standards. Modify standards as needed.
 - Calculate and tabulate final quantities for traffic signal and illumination items for the project at the 90% submittal.
 - Provide necessary technical specifications and special provisions related to the signal and illumination design.

3.0 ENVIRONMENTAL SERVICES

3.1. Agency Coordination

Support the Authority and ENGINEER in coordination activities with TxDOT Austin District, TxDOT's Environmental Affairs Division, TCEQ, and the FHWA, as directed by the Authority.

3.2. Permitting Coordination

GEC will not be responsible for the preparation, submittal, and/or monitoring of any required permit applications; including TCEQ, City of Leander, Corps of Engineers, and Williamson County. This activity will be included in the ENGINEER's scope of services.

4.0 PROCUREMENT

4.1. Contract Document Preparation

Provide support as needed for the preparation of the contract documents for bidding; including bid form, bonding requirements, Local Government Project Procedure requirements, contract specifications; and requirements for construction Quality Control Testing.

4.2. Letting

Advertise, prepare for and conduct prebid meeting (if necessary), prepare for and conduct bid opening, review bids and prepare recommendation of award, coordinate approval of selected Contractor with the Authority and TxDOT, and prepare Notice of Award and Notice to Proceed.

5.0 LOCAL GOVERNMENT PROJECT PROCEDURES (LGPP)

5.1. Local Government Project Procedures (LGPP)

5.1.1. Bid Document Preparation/Award/Execution

- Ensure all requirements, specifications and forms are included in the bid documents.
- Ensure the bid documents are in conformance with TDLR regulations.
- Ensure that all letting and award requirements are met.

5.1.2. Contract Oversight

- Ensure that payments are made in compliance with regulations, which includes certified payrolls, labor interviews and reimbursement requests.
- Ensure that the Project adheres to the approved Quality Assurance Plan.
- Ensure that all reports are being conducted per requirements (ie: Daily Inspection SW3P and traffic control).

- Ensure that all subconsultants, change orders and time extensions are approved by TxDOT.
- Prepare for and participate in audits as deemed necessary by FHWA and TxDOT (assumes 1 audit).
- Ensure that the Contractor builds the Project in accordance to the approved contract documents and plans.
- Comply with the DBE Program requirements: (SMS 4903), CUF checklist, Prompt Payment Certifications.
- Maintain site plan showing location of erosion control devices with date of installation, replacement and removal quantities.

6.0 CONSTRUCTION ENGINEERING & INSPECTION

6.1. Construction Inspection and Review Services

- General contract administration and oversight of construction. It is assumed that the duration of construction is 6 months.
- Quantity verification for payment purposes.
- Recommendation for approval of payment to Contractor.
- Inspection for reasonable construction quality in conformance to plans and specifications.
- Conduct SW3P inspections every 14 days or within 24 hrs after 0.5 inches or more of rainfall.
- Maintain site plan showing location of erosion control devices with date of installation, replacement and removal quantities.
- Conduct day and night traffic control inspections (1 day and 1 night per month).
- Review testing and materials reports for conformance to specifications.
- Verification of horizontal and vertical grades using random 3rd party surveys, as necessary, to verify reasonable conformance to plan line and grade.
- Document construction using daily inspection reports and photos.

6.2. Final Punch List / Final Inspection, and Project Close-out

- Coordinate with the Contractor in the generation of preliminary and final punch lists.
- Monitor the resolution of outstanding construction items.
- Perform a final walk-through with the Contractor to make sure that the Project meets the Authority's satisfaction and reasonably conforms to the contract plans and specifications.
- Verify and certify final inspection reports of the completed construction; issue recommendations and certification of construction completion.

DELIVERABLES

Deliverables will consist of the following:

- Construction Inspection diary (objective and consisting of documented facts and statements only).

- Records generated and related to the construction and construction project management.

7.0 PROJECT OVERSIGHT - CONSTRUCTION

7.1. Change Order Processing & Management

- Prepare change orders as required by the Authority (assumes 4 change orders).
- Review change orders and associated cost estimates prepared by the Contractor, evaluate Contractor claims for extension of time, and provide comments to the Authority.
- Maintain, log, and retain documentation associated with change orders.

7.2. Processing and Management of Request for Information (RFIs) and Shop Drawing Submittals

- Maintain, log and retain documentation associated with RFIs and shop drawings.
- The reviews of and responses to Contractor submitted RFIs on the Project will be provided by ENGINEER – (see **Attachment A1 ENGINEER scope**).
- The review of Contractor submittals and shop drawings for general conformance with contract plans and specifications will be provided by ENGINEER – (see **Attachment A1 ENGINEER scope**).

7.3. Records Management

- Maintain and retain pertinent document on the Project.
- At the completion of the Project, return documentation to the Authority for their storage.
- Coordinate document integration with the Authority's EDMS.

7.4. Record Drawings

- Compile and provide the Authority with Record Plans incorporating construction revisions into the original "as bid" construction plans. The GEC is not responsible for any errors or omissions in the information provided by the Contractor that are incorporated into the record drawings.

DELIVERABLES

Deliverables will consist of the following:

- Change Order files and log
- RFI and shop drawing files and log
- Final Record Drawings

8.0 ITEM NOT INCLUDED IN GEC'S SCOPE OF SERVICE

The following items are not included in the GEC's Scope of Services, but shall be provided by the GEC as Additional Services if authorized and confirmed in writing by the AUTHORITY:

- The services outlined in *Attachment A1 – Services to be Provided by Baker-Aicklen & Associates, Inc.* (“ENGINEER”).
- Detailed owner reviews for the ENGINEER's design work to ensure that appropriate civil and structural design criteria are met.
- Preparation, submittal, and/or monitoring of any agency or environmental permit applications that may be requirements of the project
- Review and respond to Contractor submitted Requests for Information (RFI) during construction.
- Review and respond to Contractor submittals and shop drawings for general conformance with contract plans and specifications.
- Provide Construction Quality Control (QC) Testing, Quality Assurance (QA) Testing, and Independent Assurance of the Quality Assurance Program services.

ATTACHMENT A1

SERVICES TO BE PROVIDED BY BAKER-AICKLEN & ASSOCIATES, INC. (ENGINEER)

The work to be performed under this contract will consist of providing professional engineering and surveying services for the approval of geometric schematics (developed by others) and preliminary and final plans, specifications and estimates (PS&E) for intersection improvements at US183/183A in Williamson County. All preliminary and final PS&E documents will be submitted on 11"x17" sheets. The project will be developed in English units. The work to be performed by the ENGINEER under this work authorization, in general, will consist of:

1. Project Management

This task will include the following activities:

- Coordination with CTRMA (Authority), TxDOT, City of Leander, GEC (HNTB), or other entities as needed.
- Provide overall project management services including budget control, schedule control, project coordination, resource allocation, and preparation of invoices and Monthly Progress Reports. Submit invoices and monthly progress reports directly to GEC.
- Prepare a detailed work authorization schedule linking work authorization tasks, subtasks, critical dates, milestones, deliverables, and the Authority/Texas Department of Transportation (TxDOT)/ Federal Highway Administration (FHWA) scheduled review requirements. The Project schedule will be in a format that depicts the order and inter-dependence of the various tasks, subtasks, milestones and deliverables for each of the tasks identified therein. Progress will be reviewed periodically, and should these reviews indicate a substantial change in progress, a schedule recovery strategy will be developed and implemented and the schedule will be revised accordingly.
- Ensure timely delivery of PS&E and all deliverables including electronic files, and hard copies of all pertinent information, all in American Standard System of Measure format.
- Perform Quality Control/Quality Assurance reviews. Develop a project Design Quality Control Plan (DQCP) to establish and maintain an effective quality control program for accomplishing the engineering and design for this project in a manner that meets current professional engineering quality standards and Authority design criteria, standards and details.
- General Project Meetings. The ENGINEER will schedule and attend monthly project status meetings with the Authority, TxDOT, City of Leander, and others. These meetings will report on progress and evaluate the project status, verify that the project is proceeding in compliance with the scope of services, determine necessary adjustments to the project work plan and schedule, plan upcoming events and discuss and resolve project technical issues. The Engineer will prepare minutes of each meeting and circulate to meeting attendees.
- TxDOT, Williamson County, City of Leander, and Authority Coordination. ENGINEER will provide appropriate staff as part of coordination efforts between Authority, TxDOT, Williamson County and the City of Leander, GEC, and others.
- Submittals and Design Review Meetings - 30%, 90%, and 100% submittals will be required. The ENGINEER will attend 30%, 90% and 100% submittal review meetings. Three (3) copies will be required for each submittal. Comments and revisions requested at the review meetings will be incorporated into the plans for the subsequent submittal.

- a. 30% Submittal & Review - Submittal will include preliminary cross sections, P&P sheets, existing and proposed typical sections, preliminary title and index sheets, preliminary drainage area map and drainage calculations, sequence of work outline, preliminary utility exhibits, summary sheet outline, identify potential utility conflicts, update estimates, and update project schedule.
- b. 90% Submittal & Review – Submittal will include addressing 30% review comments, final typical sections, final drainage calculations, final utility conflict identification and resolution, final P&P sheets, final signing and striping layouts, final miscellaneous roadway details, final traffic control plans, final SW3P, final quantities, updated estimates and project schedule, construction working days schedule, general notes and specifications.
- c. 100% Submittal & Review – Address final review comments.

- **Deliverables** will consist of the following:

- a. One (1) 11"x17" signed and sealed original of each plan sheet and two (2) electronic copies of the Plans, Specifications and Estimates (PS&E) and all related contract documents.
- b. A Contract Time Determination schedule.
- c. Three (3) copies of the PS&E at 30% Submittal & Review for the Authority Plan Review.
- d. Two (2) copies of the PS&E at 30% Submittal & Review for City of Leander Plan Review.
- e. Eight (8) copies of the PS&E at 30% Submittal & Review for TxDOT District Plan Review and Area Office Review.
- f. Three (3) copies of the PS&E at 90% Submittal & Review for the Authority Plan Review.
- g. Two (2) copies of the PS&E at 90% Submittal & Review for City of Leander Plan Review.
- h. Eight (8) copies of the PS&E at 90% Submittal & Review for TxDOT District Plan Review and Area Office Review.
- i. Three (3) copies of the PS&E at 100% Submittal & Review for the Authority Plan Review.
- j. Two (2) copies of the PS&E at 100% Submittal & Review for City of Leander Plan Review.
- k. Eight (8) copies of the PS&E at 100% Submittal & Review for TxDOT District Plan Review and Area Office Review.
- l. Ten (10) copies of the PS&E at 100% Submittal & Review for TxDOT Division Review and Processing.

2. **Geometric Schematic Approval**

This task will include the following activities:

A. **Geometric Schematic Design Review**

- Evaluate and confirm design criteria.
- Review Geometric Schematic: Including plan and profile for US 183, US 183A, CR 276, and local access road. Refine typical sections, design criteria files,

superelevation tables and shapes, if required. Revise profiles, if required, to reduce slopes, ROW requirements, grades, etc.

- Verify driveway alignments and profiles.
- Conduct Constructability Review consisting of a conceptual construction phasing plan. Review potential impacts on existing traffic, requirements for continuous access to all driveways, and access and operation of construction equipment

B. Preliminary Drainage Design Review

- If available, review and confirm drainage design criteria, hydrologic study(ies), and hydraulic analysis/design prepared by others.
- Perform preliminary drainage analysis with vicinity drainage area maps and project discharges calculated, if required
- Analyze roadway profile and determine cross-roadway culvert locations. Determine appropriate drainage easement requirements based on culvert locations and projected discharge rates.

C. Surveying Tasks

- Control: Locate previously set horizontal control points (traverse points) and bench marks, within the limits of the project, and verify their validity. Establish additional bench marks at intervals not to exceed 1000 feet for the limits of the project and tie to project baseline. Bench marks shall be #6, 3/4 inch diameter iron rods 4 feet in length, or of a shorter length if driven to resistance, and located near the proposed right-of-way line at a measured distance and a given station. Bench marks will be looped in accordance with good surveying practice prior to performing surveying within this scope. All traverse and control leveling work related to the project will be performed in substantial accordance with the current Manual of Practice for Land Surveying in the State of Texas published by the Texas Society of Professional Surveyors.
- Cross Sections: Within the area designated as "Photogrammetric Flight Area", cross sections of existing pavement will be collected at sufficient intervals to verify and reconcile horizontal and vertical datum to existing US 183A project datum. In the areas outside of the area designated as "Photogrammetric Flight Area", cross sections will be collected at 100' intervals, with the easterly limits of cross sections to be the westerly limits "Photogrammetric Flight Area", and westerly limits to be at a width sufficient to cover design limits.
- Survey Information: Utilize photogrammetric survey information that was previously obtained for the 183A roadway extension project. Obtain additional topographic survey information as needed to supplement the photogrammetric survey at proposed roadway tie-in locations and to locate any drainage structures, trees, utility covers and manholes, traffic and light poles, traffic, junction and pull boxes and other topographic features within the previously defined limits. Obtain topographic survey information the area in the northwest quadrant of the US 183 / CR 276 intersection for the proposed re-alignment of the local access road.
- Conduct right-of-way parcel acquisition surveys for what is expected to be four (4) parcels of land that are anticipated to be needed for the proposed new roadway. The parent tract for each of the affected parcels will be surveyed to the extent

necessary to delineate the required section of right-of-way. A separate certified metes and bounds description, with an accompanying sketch, will be generated for each parcel and submitted to the City of Leander for the property acquisition process. An overall right-of-way map will also be provided to the City of Leander. All of these documents will be prepared in a format normally used for recordation and legal transfer of title to properties in Williamson County, Texas. The corners of each right-of-way parcel will be staked in the field.

D. Miscellaneous Design

- Confirm ROW requirements developed by others
- Establish easement requirements.
- Develop ROW and easement metes and bounds descriptions and exhibits.
- Update engineer's estimate of probable construction cost.
- Develop design exceptions, variances, and waiver report, if required.

E. Geometric Schematic Deliverables

- Design exceptions, variances, and waivers, if required; design calculations; and engineer's opinion of probable construction cost.
- ROW and easement maps for City of Leander property acquisition.
- ROW and easement metes and bounds descriptions and exhibits for City of Leander property acquisition.

3. PS&E Development

This task will include the following activities:

A. Roadway Design Controls

- Develop typical section sheets (NTS).
- Develop Project Layout sheet (1" = 500'),
- Develop Horizontal Alignment Data sheet.
- Develop roadway plan and profile sheets (1" = 100'). Coordinates, superelevation data, major earthwork quantities, stations, and elevations of key alignment features and benchmarks will be noted.
- Develop flexible pavement design that is to be used to construct the widened sections of US 183 and 183A will match the existing pavement section used to construct those roadways. Provide flexible pavement designs for the portion of US 183 west of the intersection, CR 276, and the Access Road using TxDOT approved format.
- Develop driveway details, grading details, intersection details, and miscellaneous roadway detail sheets.
- Finalize design cross sections and develop cross section sheets. Cross section sheets will be developed at a scale of 1" = 10'. Determine the quantities of cut and fill for each cross section.
- Determine the location and size of any necessary construction easements.
- Assemble applicable State, County and City roadway standards. Identify and acquire all applicable standards. Modify standards as needed. Incorporate in plans.
- Prepare Summary of Roadway Quantities at the 90% submittal.

B. Drainage Design

- Finalize drainage analysis and design.
- Develop drainage area map (1" = 100'). Delineate drainage area boundaries based on USGS topographic maps, contour maps, and field survey reconnaissance.
- Calculate peak discharges - Determine conveyance paths, channel slopes, time of concentration, and select runoff coefficients/RCN curve numbers, to determine design-year flows.
- Develop hydraulic models of conveyance elements. A model will be developed for proposed drainage structures on US 183, US 183A, CR 276, and local access road. The ENGINEER will verify cross sections at or near the proposed culverts. The sections will be verified by field survey and aerial topographic details outside the field survey limits.
- Analyze the proposed roadway profile and determine the size of all cross culverts. The number and size of openings for the culverts will be based on the hydraulic analyses.
- The roadway profile will be designed to not be overtopped by the peak flow resulting from a storm event with a 100-year design frequency through the culvert openings. The design storm event will be based on the hydrologic study prepared by the ENGINEER. The proposed improvements will be modeled to create the Post Project Condition Model. The ENGINEER will review the Post Project Condition Model to ensure compliance with Federal, State, and Local regulations.
- Generate hydraulic computation sheets for all culverts.
- Determine the size and location of any necessary drainage easements.
- Prepare Drainage Report – Prepare a drainage report summarizing the findings and recommendations developed in the preliminary drainage study. The report will document all relevant calculations, exhibits and supporting documents including the final drainage design with the proposed locations and sizing of the culverts. The ENGINEER will size each culvert to pass the appropriate design-year storm without exceeding allowable headwater elevations. The TxDOT Hydraulic Manual will be used to establish design controls. Applicable FEMA criteria will also be satisfied. Hydraulic data will be summarized on the culvert layout. Any additional culvert sizing will require a supplemental agreement.
- Develop Culvert Layout sheets for drainage structures in accordance with the TxDOT Hydraulic Manual.
- Determine channel and easement grading.
- Prepare drainage plan details necessary to clarify the construction requirements of the drainage facilities.
- Assemble applicable State, County and City drainage standards. Identify and acquire all applicable standards. Modify standards as needed. Incorporate in plans.
- Calculate and tabulate quantities for drainage items for the project at the 90% submittal.

C. Storm Water Pollution Prevention Plans (SW3P)

- Prepare SW3P Index Sheet and develop SW3P layouts at a scale of 1 in = 100 feet showing all necessary erosion control devices such as: sediment control fences,

rock filter dams, soil retention blankets, riprap slope protection and other devices as required.

- The ENGINEER will develop a SW3P plan consistent with the project construction phases that will minimize sediment discharge from the project site through runoff. The plan will identify the SW3P components that will mitigate the impacts of construction activities. The SW3P will be in compliance with TxDOT manual *Storm Water Management Guidelines for Construction Activities* or as directed by the COUNTY.
- Assemble applicable State, County and City SW3P standards. Identify and acquire all applicable standards. Modify standards as needed. Incorporate in plans.
- Calculate and tabulate final quantities for SW3P items for the project at the 90% submittal.

D. Signing and Pavement Markings

- Signing and Pavement Marking Layout - Prepare a signing and marking layout at a scale of 1" = 100'. The signing and marking layout will identify the various types of pavement markings, proposed signing, delineation and location of project features which would present a hazard to traffic.
- Prepare a small sign summary sheet.
- Assemble applicable State, County and City signing and pavement marking standards. Identify and acquire all applicable standards. Modify standards as needed. Incorporate in plans.
- Calculate and tabulate final quantities for signing and pavement marking items for the project at the 90% submittal.

E. Traffic Control Plan (TCP)

- Develop TCP narrative, typical sections, and layouts (1" = 100'). The plan will identify work areas, temporary paving, temporary shoring, signing, detour alignment, barricades, and other TCP related items. A narrative will be prepared incorporated into the plans.
- Assemble applicable State, County and City traffic control and work zone standards. Identify and acquire all applicable standards. Modify standards as needed. Incorporate in plans.
- Calculate and tabulate final quantities for traffic control items for the project at the 90% submittal.

F. Traffic Signals

- The GEC will provide required design tasks, plan sheets, technical specifications, and quantities to ENGINEER for inclusion into the construction documentation.

G. Illumination

- The GEC will provide required design tasks, plan sheets, technical specifications, and quantities to ENGINEER for inclusion into the construction documentation.

H. Miscellaneous Roadway Sheets

- Project Title Sheet

- Supplemental Index Sheet
- Project Estimate - Prepare an engineer's estimate of probable construction cost. The estimate will be prepared for the project at the 30%, 90% and 100% submittals
- General Notes and Specifications - The ENGINEER will prepare the general notes, specification data, and Basis of Estimate.
- Construction Schedule - Prepare a construction working days schedule which will identify major items of work for the construction project.

I. **PS&E Deliverables**

- PS&E for review at 30% submission
 - Preliminary roadway plan/profile sheets developed
 - Preliminary cross sections
 - Existing and proposed typical sections
 - Preliminary title and index Sheets
 - Preliminary drainage area map and drainage calculations
 - Sequence of work outline
 - Preliminary Engineer's Opinion of Probable Construction Cost
 - Preliminary list of bid items
 - Quantity summary sheets will not be included
- PS&E for review at 90% submission
 - Full set of plan sheets with quantities and standards
 - Final cross sections and earthwork calculations
 - Project Construction Manual (Bid Documents, Contract Documents, and Specifications) for bidding purposes.
 - Final Engineer's Opinion of Probable Construction Cost
- PS&E for review at 100% submission – All items of 90% submittal with corrections from 90% review
- Project Data
 - Design criteria and assumptions
 - Design calculations including horizontal and vertical alignments, superelevation transitions, hydraulic calculations
 - QA/QC forms
 - Copies of all permits and approvals
 - CDs containing electronic copies of all design files
 - CDs containing PDFs of all sheet files within the plans

4. **Surface and Subsurface Utility Location (Cobb-Fendley)**

- **Level "D" Survey:** Collect existing utility record information (as-built) from utility purveyors, TxDOT, municipalities, counties and other agency suppliers within the area of investigation.
- **Level "C" Survey:** Field locate and obtain accurate horizontal position of visible utility surface features for all of the utility systems described within Level D service.

- **Level “B” Survey:** Quality Levels D and C are inclusive with Level B services. Designate is to indicate, by marking with paint, the presence and approximate horizontal location of subsurface utilities using geophysical prospecting techniques, including, without limitations, electromagnetic, sonic and acoustical techniques.
- Provide the following designating services to aid in the design of site, right-of-way, construction plans or project development plans, or for other purposes as agreed to by the parties.
 - Provide all equipment, personnel, and supplies required for performing designating services. Determine which equipment; personnel and supplies are required to perform designating services.
 - Conduct appropriate investigation of site conditions.
 - Designate the approximate horizontal location of the existing utilities within the project limits.
 - Mark the utilities to be surveyed on the ground.
 - Markings on the ground are to be used for design purposes and not for construction excavation purposes. The use of information provided does not relieve any contractor from the duty to comply with applicable utility damage prevention laws and regulations, including, but not limited to, giving notification to utility owners or “one-call” centers before excavation.
 - The accuracy of subsurface data can be influenced by factors beyond our control, such as conductivity of materials and their surroundings, soil moisture content, proximity of other underground utilities or structures, depth of utility, etc. Therefore, only the accuracy of data obtained by actual physical verification (through vacuum excavation or otherwise) can be guaranteed to applicable engineering and/or surveying standards.
 - Provide all SUE services to the prevailing standard of care applicable in the subsurface utility engineering profession.
- Collect record utility information for above ground utility systems. This information will be verified by visual inspection in the field. The types of overhead utilities will be shown and labeled on the plan sheets.
- Analyze and correlate all of the field-collected information with the collected record information for ensuring continuity of the information collected. Resolve conflicts with Level D, C, and B information. All information will be correlated to the project’s monumentation.
- Plan sheets will be prepared utilizing MicroStation format and meeting established standards. The utilities will be referenced by the type of utility, color coded to American Public Works Association standards, utility company or agency name, address, telephone number and contact person.
- Provide all services to the standard of care applicable in the subsurface engineering profession. Obtain all information related to the project and determine the significance of same as it relates to the project. Obtain, review and evaluate existing data and appropriate plans provided by TxDOT, Williamson County, the City of Leander, and various utility districts and utility companies to determine the significance and usefulness as it relates to the project.
- **Disclaimer:** ENGINEER will not be responsible for any omission of utility information that is not obtainable via electromagnetic, sonic, or acoustical

designating services. Non-metallic piping, inactive electric and/or communication lines may or may not be found by electromagnetic, sonic or acoustical designating practices. ENGINEER does not warrant and/or guarantee that existing utilities will be found.

5. Environmental and Permitting Services

- Agency Coordination: The ENGINEER is responsible for all coordination activities with the Authority, TxDOT Austin District, TxDOT's Environmental Affairs Division, TCEQ, and the FHWA, as required.
- Permitting: The ENGINEER will be responsible for the preparation, submittal, and monitoring of any required environmental and non-environmental permit applications; including, but not limited to TCEQ, City of Leander, Corps of Engineers, and Williamson County.
- Review Water Pollution Abatement Plan (WPAP) prepared by others.
- Meet as required with TCEQ to discuss project scope and the design assumptions used in the approved WPAP for the project area.
- Analyze any differences between the proposed project scopes and the design assumptions in the approved WPAP. Ensure the proposed project design falls within the assumed parameters of the approved WPAP.
- Evaluate whether an exception or modification to the WPAP is necessary to reflect the proposed project improvements
 - Prepare WPAP Exception Request application and process through TCEQ; OR
 - Perform all necessary pollutant generation and removal calculations pertinent to this project, prepare WPAP Modification, and process through TCEQ.

6. Utility Coordination

- Coordinate and assist with the relocation of utilities.
- Develop exhibits that indicate conflicts between identified existing utilities and proposed construction.
- Recommend resolution for each utility conflict.
- Meet with utility company representatives to discuss relocation requirements and take notes as needed.

7. Bidding Phase Services

- Distribute plan sets and answer questions from bidders during the procurement process.
- Develop and issue addenda to interpret, clarify, or expand the bid documents (assumes 1 addenda).
- Maintain a planholder's list and ensure that addenda are issued to all planholders.
- Attend prebid meeting.

8. Miscellaneous Services

- Revise construction plans (roadway and signing/pavement marking sheets at a minimum) to accommodate the addition of a potential development entrance east of US183/183A and update quantities.

- Revise construction plans (or develop plan sheets as appropriate) for potential City of Leander utilities.

9. Construction Phase Services

- Attend preconstruction meeting.
- Review shop drawings submitted by the contractor for compliance with design concepts.
- Respond to up to 20 Requests for Information (RFI).
- Attend on-site meeting to discuss and develop resolution to construction related issue (assumes 1 meeting).

ATTACHMENT B
FEE ESTIMATE FOR HNTB CORP. (GEC)

TASK DESCRIPTION	CLASSIFICATION										TOTAL HOURS
	Group Director / Program Manager	Project Manager II	Project/Sr. Engineer	Engineer II	Engineer I	Sr. Inspector	Sr. ITS Design Engineer	Office Business Manager	Project Analyst	Office Tech Specialist I	
1.0 PROJECT MANAGEMENT/ADMINISTRATION											
1.1. Project Management and Coordination	8	46						4	4		62
1.2. General Administration											
1.2.1. Coordinate, Procure, and Administer Work Authorizations	2	8									10
1.2.2. Progress Reports and Invoices	4	30							45		79
1.2.3. Record Keeping and File Management		8				8				80	96
1.2.4. Correspondence										8	8
1.2.5. Work Authorization Schedule		8									8
1.3. Project Development Support	4	24								4	32
1.4. Financial Planning Support		4									4
SUBTOTAL	18	128	0	0	0	8	0	4	49	92	299
2.0 DESIGN SERVICES											
2.1. Design Services	4	26	16	16	198		77			4	341
SUBTOTAL	4	26	16	16	198	0	77	0	0	4	341
3.0 ENVIRONMENTAL SERVICES											
3.1. Agency Coordination		8								2	10
3.2. Permitting Coordination (TCEQ, Leander, Corps of Engineers, Williamson County)		8								1	9
SUBTOTAL	0	16	0	0	0	0	0	0	0	3	19
4.0 CONSTRUCTION PROCUREMENT											
4.1. Contract Document Preparation	2	12		24						8	46
4.2. Letting	2	18		16						8	44
SUBTOTAL	4	30	0	40	0	0	0	0	0	16	90
5.0 LOCAL GOVERNMENT PROJECT PROCEDURES											
5.1. Local Government Project Procedures	2	16				6				100	124
SUBTOTAL	2	16	0	0	0	6	0	0	0	100	124
6.0 CONSTRUCTION ENGINEERING & INSPECTION											
6.1. Construction Inspection and Review Services		78				1548					1626
6.2. Final Punch List / Final Inspection, and Project Close-out		16				258					274
SUBTOTAL	0	94	0	0	0	1806	0	0	0	0	1900
7.0 PROJECT OVERSIGHT - CONSTRUCTION											
7.1. Change Order Processing & Management (assumes 4 change orders)		4		12						12	28
7.2. Processing and Management of Request for Information (RFIs) and Shop Drawing Submittals		4		24						27	55
7.3. Records Management										124	124
7.4. Record Drawings		8		40	80	40					168
SUBTOTAL	0	16	0	76	80	40	0	0	0	163	375
TOTAL HOURS	28	326	16	132	278	1,860	77	4	49	378	3,148
BASE RATE	\$ 96.16	\$ 63.73	\$ 50.40	\$ 35.75	\$ 32.71	\$ 39.15	\$ 57.90	\$ 46.17	\$ 26.59	\$ 24.71	
TOTAL LABOR	\$ 2,692	\$ 20,788	\$ 806	\$ 4,719	\$ 9,094	\$ 72,812	\$ 4,458	\$ 185	\$ 1,303	\$ 9,340	\$ 126,199
LABOR BURDEN	\$ 4,688	\$ 36,194	\$ 1,404	\$ 8,216	\$ 15,834	\$ 126,773	\$ 7,762	\$ 322	\$ 2,268	\$ 16,262	\$ 219,723
TOTAL	\$ 7,380	\$ 56,981	\$ 2,210	\$ 12,935	\$ 24,929	\$ 199,585	\$ 12,220	\$ 506	\$ 3,571	\$ 25,603	\$ 345,921

EXPENSES & SUBCONSULTANTS	ITEM
Miscellaneous Expenses	\$ 7,000
Subconsultant (Baker-Aicklen)	\$ 307,450
TOTAL	\$ 307,450

SUBTOTALS BY TASK	TOTAL HOURS	TOTAL LABOR	TOTAL BURDENED LABOR
1.0 PROJECT MANAGEMENT/ADMINISTRATION	299	\$ 13,962	\$ 38,271
2.0 DESIGN SERVICES	341	\$ 14,454	\$ 39,620
3.0 ENVIRONMENTAL SERVICES	19	\$ 1,094	\$ 2,998
4.0 CONSTRUCTION PROCUREMENT	90	\$ 4,122	\$ 11,298
5.0 LOCAL GOVERNMENT PROJECT PROCEDURES	124	\$ 3,918	\$ 10,739
6.0 CONSTRUCTION ENGINEERING & INSPECTION	1900.2	\$ 76,702	\$ 210,246
7.0 PROJECT OVERSIGHT - CONSTRUCTION	375	\$ 11,947	\$ 32,749
EXPENSES & SUBCONSULTANTS			\$ 307,450
JOB TOTALS	3,148	\$ 126,199	\$ 653,371

TASK DESCRIPTION	CLASSIFICATION															TOTAL HOURS	
	Sr. Project Manager (Survey)	Project Manager (C-F)	Project Manager I	Project Manager (Survey)	Sr. Project Engineer	Engineer	Project Surveyor	Utility Specialist (C-F)	SUE Tech II (C-F)	SUE Tech I (C-F)	CADD Tech II (C-F)	Project RPLS (C-F)	Survey Tech (C-F)	3-Man Survey Crew (C-F)	2-Man Survey Crew		Admin Asst. (C-F)
1.0 PROJECT MANAGEMENT																	
1.1. Project Coordination			124		56												
1.2. Quality Control/ Quality Assurance			64		50												
1.3. Project Meetings			32		24												
SUBTOTAL	0	0	220	0	130	0	0	0	0	0	0	0	0	0	0	0	350
2.0 SCHEMATIC																	
2.1. Geometric Development																	0
2.1.1. Evaluate and Confirm Design Criteria			2		2												4
2.1.2. Refine Typical Sections, if required			2			4											6
2.1.3. Revise Horizontal/Vertical Alignments, if required			2		2	2											6
2.1.4. Preliminary Design Cross Sections			4			24											28
2.1.5. Constructability Review			4		2	2											8
2.2. Drainage																	0
2.2.1. Review and Confirm Drainage Design Criteria			2		6												8
2.2.2. Preliminary Drainage Analysis, if required			2		24	4											30
2.2.3. Drainage Easement Assessment			2		12	6											20
2.3. Miscellaneous Design																	0
2.3.1. Confirm ROW Requirements			2														2
2.3.2. Establish Easement Requirements			2		2												4
2.3.3. Prepare ROW Exhibits			2			2											4
2.3.4. Engineer's Estimate of Probable Construction Cost			2		2	2											6
2.3.5. Design Exceptions, Variances and Waiver Documents, if required			2		2												4
2.4. Surveying Tasks																	0
2.4.1. Control	1			2			24								42		69
2.4.2. Cross Sections	1			2			40								90		133
2.4.3. Survey Information	1			2			100										103
2.4.4. Right of Way Parcel Acquisition Surveys	1			2			72								40		115
SUBTOTAL	4	0	30	8	54	46	236	0	0	0	0	0	0	0	172	0	550
3.0 PS&E DEVELOPMENT																	
3.1. Roadway Design Controls																	0
3.1.1. Typical Sections			4		8	16											28
3.1.2. Roadway Plan & Profile			20		40	80											140
3.1.3. Grading Details			10		20	60											90
3.1.4. Driveway Detail Sheet			2		8	24											34
3.1.5. Miscellaneous Roadway Detail Sheet			20		40	40											100
3.1.6. Design Cross Sections & Sheets / Earthwork			20		40	80											140
3.2. Drainage																	0
3.2.1. Drainage Area Map			4		24	32											60
3.2.2. Hydrologic Calculations (Conveyance and Detention)			16		40												56
3.2.3. Miscellaneous Drainage Detail Sheet			4		24	24											52
3.2.4. Culvert Layouts			4		32	24											60
3.2.5. Hydraulic Analysis			20		40												60
3.3. Signing & Striping																	0
3.3.1. Signing & Striping			40		20	40											100
3.3.2. Sign Detail Sheet			16		24	40											80
3.4. Miscellaneous Roadway																	0
3.4.1. Title Sheet			1		1	8											10
3.4.2. Index			2		4	16											22
3.4.3. Project Layout			2		8	24											34
3.4.4. Horizontal Alignment Data Sheet			2		8	24											34
3.4.6. Compute and Tabulate Quantities/Summary Sheets			4		8	40											52
3.4.7. TCP Narrative			6		2	8											16
3.4.8. TCP Typical			8		2	40											50
3.4.9. TCP Layouts			8		2	40											50
3.4.10. SW3P Layouts			6		4	40											50
3.4.11. Standards			2		4	40											46
3.4.12. Construction Estimate			8		8												16
3.4.13. General Notes/Specifications			16		8												24
3.4.14. Develop Project Manual			20		10	8											38
SUBTOTAL	0	0	265	0	429	748	0	0	0	0	0	0	0	0	0	0	1442

TASK DESCRIPTION	CLASSIFICATION															TOTAL HOURS	
	Sr. Project Manager (Survey)	Project Manager (C-F)	Project Manager I	Project Manager (Survey)	Sr. Project Engineer	Engineer	Project Surveyor	Utility Specialist (C-F)	SUE Tech II (C-F)	SUE Tech I (C-F)	CADD Tech II (C-F)	Project RPLS (C-F)	Survey Tech (C-F)	3-Man Survey Crew (C-F)	2-Man Survey Crew		Admin Asst. (C-F)
4.0 SURFACE AND SUBSURFACE UTILITY LOCATION																	
4.1. Subsurface Utility Engineering Services																	
4.1.1. Level C & D Services		4						16	6		4	1	2	12		2	
4.1.2. Level B Services		12						16	40	40	24	1	2	20		6	
SUBTOTAL	0	16	0	0	0	0	0	32	46	40	28	2	4	32	0	8	208
5.0 ENVIRONMENTAL AND PERMITTING SERVICES																	
5.1. Environmental Agency Coordination			6		12												18
5.2. Project Permitting			8		16												24
5.3. Review WPAP, prepared by others			2		4												6
5.4. Meet with TCEQ, as required			2		4												6
5.5. Analyze Proposed Project Design with WPAP Assumptions			2		12												14
5.6. Prepare WPAP Exception Request, if approved			2		18	2											22
5.7. Prepare WPAP Modification, if required			2		24	2											28
SUBTOTAL	0	0	24	0	90	4	0	0	0	0	0	0	0	0	0	0	118
6.0 UTILITY COORDINATION																	
6.1. Develop Exhibits			4		2	12											18
6.2. Meet with Utility Company Representatives			8		4												12
6.3. Recommend Resolution for Each Utility Conflict			8		4												12
SUBTOTAL	0	0	20	0	10	12	0	0	0	0	0	0	0	0	0	0	42
7.0 BIDDING PHASE SERVICES																	
7.1. Issue Addenda and Clarifications (assumes 1 addenda)			4		4	8											16
7.2. Pre-Bid Meeting						4											4
SUBTOTAL	0	0	4	0	4	12	0	0	0	0	0	0	0	0	0	0	20
8.0 MISCELLANEOUS SERVICES																	
8.1. Revise Construction Plans to accommodate Development entrance			16		12	40											68
8.2. Revise Construction Plans for City proposed utilities			16		12	40											68
SUBTOTAL	0	0	32	0	24	80	0	0	0	0	0	0	0	0	0	0	136
9.0 CONSTRUCTION PHASE SERVICES																	
9.1. Attend Pre-Construction Meeting			4		4												8
9.2. Shop Drawing / Submittal Reviews, Processing, and Management			16		8	16											40
9.3. Request for Information (RFI) Processing, and Management (assumes 20 RFIs)			20		10	40											70
9.4. Project Site Visit to Support Issue Resolution (assumes 1 site visit)			2		4	4											10
SUBTOTAL	0	0	42	0	26	60	0	0	0	0	0	0	0	0	0	0	128
TOTAL HOURS	4	16	637	8	767	962	236	32	46	40	28	2	4	32	172	8	2,994
BASE RATE	\$ 60.10	\$ 52.59	\$ 43.75	\$ 35.50	\$ 35.50	\$ 24.00	\$ 32.00	\$ 33.95	\$ 28.55	\$ 17.09	\$ 23.75	\$ 42.97	\$ 30.24	\$ 45.93	\$ 44.81	\$ 21.07	
	0%	1%	21%	0%	26%	32%	8%	1%	2%	1%	1%	0%	0%	1%	6%	0%	Overall Totals
TOTAL LABOR	\$ 240	\$ 841	\$ 27,869	\$ 284	\$ 27,229	\$ 23,088	\$ 7,552	\$ 1,086	\$ 1,313	\$ 684	\$ 665	\$ 86	\$ 121	\$ 1,470	\$ 7,707	\$ 169	\$ 100,404
LABOR BURDEN	\$ 484	\$ 1,931	\$ 56,094	\$ 572	\$ 54,802	\$ 46,474	\$ 15,201	\$ 2,493	\$ 3,014	\$ 1,569	\$ 1,526	\$ 197	\$ 278	\$ 3,373	\$ 15,513	\$ 387	\$ 203,908
TOTAL	\$ 724	\$ 2,772	\$ 83,963	\$ 856	\$ 82,031	\$ 69,562	\$ 22,753	\$ 3,580	\$ 4,327	\$ 2,252	\$ 2,191	\$ 283	\$ 399	\$ 4,843	\$ 23,220	\$ 555	\$ 304,312

EXPENSES & SUBCONSULTANTS	ITEM
MISCELLANEOUS EXPENSES	\$ 2,195
Subconsultant Expenses (Cobb-Fendley)	\$ 944
TOTAL	\$ 3,139

SUBTOTALS BY TASK	TOTAL HOURS
1.0 PROJECT MANAGEMENT	350
2.0 SCHEMATIC	550
3.0 PS&E DEVELOPMENT	1442
4.0 SURFACE AND SUBSURFACE UTILITY LOCATION	208
5.0 ENVIRONMENTAL AND PERMITTING SERVICES	118
6.0 UTILITY COORDINATION	42
7.0 BIDDING PHASE SERVICES	20
8.0 MISCELLANEOUS SERVICES	136
9.0 CONSTRUCTION PHASE SERVICES	128
EXPENSES	
JOB TOTALS	2,994

TOTAL LABOR	TOTAL BURDENED LABOR
\$ 14,240	\$ 42,902
\$ 20,117	\$ 60,609
\$ 44,775	\$ 134,899
\$ 6,435	\$ 21,203
\$ 4,341	\$ 13,078
\$ 1,518	\$ 4,573
\$ 605	\$ 1,823
\$ 4,172	\$ 12,570
\$ 4,201	\$ 12,655
	\$ 3,139
\$ 100,404	\$ 307,450