

EXHIBIT C

WORK AUTHORIZATION

(To Be Completed and Executed After Contract Execution)

WORK AUTHORIZATION NO. 1
PROJECT: RM 2243

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated January 14, 2020 and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and BGE, Inc. (the "Engineer").

Part 1. The Engineer will provide the following Engineering Services set forth in Attachment "B" of this Work Authorization.

Part 2. The maximum amount payable for services under this Work Authorization without modification is \$3,950,253.00.

Part 3. Payment to the Engineer for the services established under this Work Authorization shall be made in accordance with the Contract.

Part 4. This Work Authorization shall become effective on the date of final acceptance and full execution of the parties hereto and shall terminate on July 31, 2021. The Engineering Services set forth in Attachment "B" of this Work Authorization shall be fully completed on or before said date unless extended by a Supplemental Work Authorization.

Part 5. This Work Authorization does not waive the parties' responsibilities and obligations provided under the Contract.

Part 6. County believes it has sufficient funds currently available and authorized for expenditure to finance the costs of this Work Authorization. Engineer understands and agrees that County's payment of amounts under this Work Authorization is contingent on the County receiving appropriations or other expenditure authority sufficient to allow the County, in the exercise of reasonable administrative discretion, to continue to make payments under this Contract. It is further understood and agreed by Engineer that County shall have the right to terminate this Contract at the end of any County fiscal year if the governing body of County does not appropriate sufficient funds as determined by County's budget for the fiscal year in question. County may effect such termination by giving written notice of termination to Engineer.

Part 7. This Work Authorization is hereby accepted and acknowledged below.

✓
OK
m/g
12/31/19

EXECUTED this ____ day of _____, 20__.

ENGINEER:

COUNTY:

[BGE, Inc.] Williamson County, Texas

By: Wesley E. Jasek, P.E.
Signature

By: _____
Signature

Wesley Jasek, PE
Printed Name

Printed Name

Vice President
Title

Title

LIST OF ATTACHMENTS

Attachment A - Services to be Provided by County

Attachment B - Services to be Provided by Engineer

Attachment C - Work Schedule

Attachment D - Fee Schedule

OK
my 12/31/19

ATTACHMENT A
SERVICES TO BE PROVIDED BY THE COUNTY
DESIGN SERVICES FOR RM 2243

In general, Williamson County and its representatives to their best efforts will render services as follows:

1. Name, business address and phone number of County's project manager.
2. Assistance to the Engineer, as necessary, with obtaining data and information from other local, regional, State and Federal agencies required for this project.
3. Obtain Rights of Entry from landowners that are unwilling to grant access to the Engineer.
4. Provide available appropriate County data on file, plans and specifications that are deemed pertinent to the completion of the work required by the scope of services (including previous hydraulic studies, models, previous reports and studies, available existing traffic counts, and design year traffic projections).
5. Provide available criteria and full information as to the client's requirements for the project. Provide examples of acceptable format for the required deliverables.
6. Provide timely reviews and decisions necessary for the Engineer to maintain the project work schedule. Review recommendations offered by the Engineer, progress of work, and final acceptance of all documents.
7. Submittal of documentation to regulatory agencies for review and comment, when specified.
8. Support project development efforts with stakeholders, coordinate meetings and interface with stakeholders, as needed.
9. Post and maintain project information for public consumption on the County website.
10. Assist with Coordination between the Engineer and the County's other subconsultants.
11. Negotiate with all utility companies for any agreements and/or relocations required.
12. Provide an agent as necessary to secure proposed ROW.
13. Review Engineer progress, submittals, and plan changes.

**ATTACHMENT B – WA#1
SERVICES TO BE PROVIDED BY THE ENGINEER
PRELIMINARY ENGINEERING FOR RM 2243**

PROJECT DESCRIPTION

Existing Facility

RM 2243 is currently a 2-lane, east-west rural roadway.

Proposed Facility

A full access-controlled freeway with 4 to 6 main lanes and 4 to 6 frontage road lanes, with approximately 350 feet of right of way (ROW). This includes ultimate interchanges at 183A, Southwest Bypass and consideration for an interchange at Ronald Reagan.

Design Criteria

Project-specific design criteria (typical sections, design speed, functional classification, geometric criteria, etc.) shall be identified and documented and shall be in accordance with the latest version of Williamson County design criteria, the Texas Department of Transportation (TxDOT) Manuals, American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets, TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, Highway Capacity Manual - Transportation Research Board, AASHTO – A Policy on Design Standards Interstate System, and other associated local and State Manuals, as applicable.

FUNCTION CODE 145 - PROJECT MANAGEMENT

A. COMMUNICATION:

- Shall designate one Licensed Professional Engineer (Texas) to be responsible for the project management, and all communications with the County and its representatives.

B. MONTHLY PROGRESS REPORTS, INVOICES, AND BILLINGS:

- Submit monthly progress status reports to the GEC. Progress reports will include: tasks completed, tasks/objectives that are planned for the upcoming periods, lists or descriptions of items or decisions needed from the County and its representatives. Subconsultant progress will be incorporated into the monthly progress report. A copy of the monthly progress report will be uploaded to ProjectWise.
- Prepare correspondence, invoices, and progress reports on a monthly basis in accordance with current County requirements.

C. QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PLAN:

- Prepare a project specific QA/QC plan and submit to the County within thirty (30) days of notice to proceed.
- For each deliverable, provide evidence of an internal review and mark-up of that deliverable as preparation for submittal and in accordance with submitted project specific QA/QC plan.
- Provide continuous QA/QC throughout the duration of the scheduled services included herein to appraise both technical and business performance and provide direction for project activities.

D. PROJECT COORDINATION & ADMINISTRATION:

- Prepare and maintain routine project record keeping including records of meetings.
- Correspondence and coordination will be handled through and with the concurrence of the GEC.
- Manage project activities (including documenting emails, phone and conference calls, maintain project files for the length of the project, meeting agendas, meeting minutes, and schedule meetings), direct Engineer's team/staff, correspond with the

County and its representatives, and assist the County and its representatives in preparing responses to project-related inquiries.

E. PROGRESS/COORDINATION MEETINGS ([20] external meetings assumed):

- Attend a kickoff meeting and coordination/progress meeting with the County and its representatives and stakeholders, as necessary to communicate development of the project and design issues.
- Prepare agenda and sign-in sheets for external coordination/progress meetings.
- Prepare meeting minutes for review via email within three (3) business days of the external coordination/progress meeting.
- Conduct internal coordination meetings as required to advance the development of the project.

F. PROJECT SCHEDULE:

- Maintain a project schedule indicating tasks, subtasks, critical dates, milestones, and deliverables.

DELIVERABLES:

- Monthly Invoices and Progress Reports
- Project Specific QA/QC Plan
- Meeting Minutes, Sign-In Sheets, and Agendas
- Project Schedule

FUNCTION CODE 110 - FEASIBILITY STUDIES

A. ROUTE AND DESIGN STUDIES

DATA COLLECTION:

- Utilizing the information provided in the TxDOT Study, supplement record research and obtain existing information, including but not limited to: as-built plans, construction plans, ROW maps, studies, future land use maps, floodplain data, floodplain and drainage models and analyses. Obtain construction plans for projects within the project limits and abutting TxDOT and County roads. Obtain drainage studies, reports, and mapping within the study area, including reports for developments affecting the drainage area.
- Conduct a field investigation of the proposed roadway alignment and the surrounding area to determine field conditions including photographic record of notable existing features.
- Develop and maintain adjacent property ownership information (including owner's name, mailing address, property address, property id number) spreadsheet to be used for disseminating project information.
- Review the data collected and organize the information.

TRAFFIC EVALUATIONS AND PROJECTIONS

- A review of previous traffic studies performed by TxDOT

DESIGN CRITERIA

- The Engineer shall identify project-specific design criteria (typical sections, design speed, functional classification, geometric criteria) in accordance with the latest version of Williamson County criteria, the TxDOT Manuals, AASHTO Policy on Geometric Design of Highways and Streets, TxDOT Standard Specifications for Construction of Highways, Streets, and Bridges, Highway Capacity Manual - Transportation Research Board, AASHTO - A Policy on Design Standards Interstate System, and other associated local and State Manuals, as applicable.

DELIVERABLES:

- Draft Design Summary Report (DSR)
- Final Design Summary Report (DSR)

PRELIMINARY COST ESTIMATES

- Preliminary cost estimates shall be developed utilizing the most current TxDOT Statewide and District bid tabs, as applicable. Estimates shall be developed in present day dollars and escalated to the projected year of construction. The Engineer shall develop construction cost estimates for Recommended Alternative. The cost estimate for the Recommended Alternative shall include significant construction elements such as structures, retaining walls, pavement structures, and approximate cut and fill quantities. The Engineer shall provide ROW cost estimates, including compensable and non-compensable utility relocations, for the Recommended Alternative based upon per-acre/utility type costs.

DELIVERABLES:

- Final Preliminary Cost Estimates

PRELIMINARY RIGHT OF WAY REQUIREMENT

- Preliminary ROW requirements and associated costs shall be determined for the Recommended Alternative in accordance with the latest version of Williamson County criteria, the TxDOT Manuals, AASHTO Policy on Geometric Design of Highways and Streets, TxDOT Standard Specifications for Construction of Highways, Streets, and Bridges, Highway Capacity Manual - Transportation Research Board, AASHTO – A Policy on Design Standards Interstate System, TxDOT ROW and Survey Manuals, and other associated local and State Manuals, as applicable. Determine current ROW widths based on TxDOT as-built plans and the Williamson County Appraisal District published information.

DELIVERABLES:

- Estimated ROW location on alignment maps
- Estimated ROW Cost

B. SCHEMATIC DEVELOPMENT:

SCHEMATIC:

- Implement revisions to existing TxDOT schematic based on Stakeholder input and agreed upon by Williamson County.
- Prepare preliminary schematic submittal per Williamson County submittal requirements and selected design criteria including proposed cross sections, typical sections, roadway centerline, proposed drainage structures, direction of flow and number of travel lanes, intersecting streets, property boundaries and information, ROW and easement locations, preliminary pavement section, driveway locations,

horizontal alignment data, profile data, identification of known utilities, guide signs, illumination, conceptual traffic control phasing, preliminary retaining and/or noise walls.

- Prepare final schematic submittal per Williamson County submittal requirements and selected design criteria.

TRAFFIC EVALUATIONS AND PROJECTIONS

- Traffic data and analysis results provided by TxDOT will be shown on schematic and used to determine locations of required dedicated turn lanes along frontage roads.

DELIVERABLES:

- Preliminary [Interim/Ultimate] Schematic Submittal including cost estimate and all related electronic design files
- Final [Interim/Ultimate] Schematic Submittal including cost estimate and all related electronic design files
- Preliminary [Interim/Ultimate] Construction Sequencing Submittal including roll plots and all related electronic design files
- Final [Interim/Ultimate] Construction Sequencing Submittal including roll plots and all related electronic design files.

C. DRAINAGE STUDY

HYDROLOGIC/HYDRAULIC MODELING ([18] major channel crossings, [17] cross drainage structures assumed):

- Prepare hydrologic and hydraulic models or modify existing models (FEMA, drainage districts, river authorities, cities, etc.) if available, to define the drainage infrastructure required for the project. Detail the methodologies employed and recommendations. The analysis will include: preparation of a preliminary design of the ROW drainage system, cross drainage structures, ROW drainage, major channel crossings to reflect the existing and proposed conditions, recommended minimum pavement elevations based on cross drainage flood elevations, ROW requirements, identify potential needs for FEMA Coordination and storm sewer analysis at interchanges and frontage roads. HEC-RAS shall be utilized for all stream modeling.
- Develop existing channel cross sections based on data collection.

FEMA COORDINATION:

- Coordinate with Local Floodplain Administrator as necessary throughout the project.

IMPACT AND MITIGATION ANALYSIS:

- Prepare an impact analysis to determine increases in peak flow rates for the 100-year storm including: existing and proposed peak flow rates, mitigation analysis, conceptual detention basin layouts, design of control structures, routing of storm hydrographs through basins, calculate the volume of fill to be placed in the 100-year floodplain, and recommend locations for compensatory storage.

WATER QUALITY ANALYSIS:

- Prepare an impact analysis to determine preliminary design and ROW needs for accommodation of water quality treatment BMPs in accordance with TCEQ Edwards Aquifer Protection Program.

DELIVERABLES:

- Preliminary & Final Drainage Report.

D. GEOTECHNICAL SERVICES

- The Engineer shall determine the location of proposed soil borings for pavement and bridge design, embankment settlement analysis, retaining walls, slope stability and along storm drain alignment in accordance with the latest edition of TxDOT Manuals. Williamson County will review and provide comments for a boring layout submitted by the Engineer showing the general location and depths of the proposed borings. Once the Engineer receives the County's review comment's they shall perform soil borings (field work), soil testing and prepare the boring logs in accordance with the latest edition of TxDOT Manuals and TxDOT's District's procedures and design guidelines. Pavement soil borings should include one core every mile (8 total).
- All geotechnical work should be performed in accordance with the latest version of TxDOT Manuals. All testing shall be performed in accordance with the latest version of TxDOT's Manual of Test Procedures. American Society for Testing Materials (ASTM) test procedures can be used only in the absence of the State's procedures. All soil classification should be done in accordance with the Unified Soil Classification System.
- Foundation Studies: The Engineer shall coordinate with the County to determine the location of soil borings to be drilled along the retaining wall alignments. The

soil borings shall extend a minimum of 35 feet below the footing elevation or deeper as soil conditions warrant. Bridge soil borings should include 2 per bridge (16 total). The Engineer shall provide a boring layout for the County's review and comment.

- The Engineer shall incorporate soil boring data sheets prepared, signed, sealed, and dated by the Geotechnical Engineer. The soil boring sheets shall be in accordance with TxDOT's WINCORE software as can be found on the TxDOT website.
- Pavement Design: The Engineer shall provide an approximate pavement design based on local similar projects for the cost estimate. The Engineer shall provide a draft and final pavement design for the recommended alternatives.

DELIVERABLES:

- Recommended Boring Location Layout
- Geotechnical Report
- DGN files containing drilling log data from Geotechnical analysis
- Preliminary Recommended Pavement Design based on area experience
- Draft and Final Pavement Design

FUNCTION CODE 120 – SOCIAL/ECON/ENVIRON STUDIES

A. PUBLIC INVOLVEMENT

STAKEHOLDER COORDINATION ([30] meetings assumed):

- Coordinate with the County's Public Involvement (PI) Consultant Team.
- Prepare presentations, exhibits, and maps of the project limits for stakeholder coordination meetings.
- Attend meetings with affected local agencies, County's consultants, and affected property owners.

PUBLIC SCOPING MEETING

- Attend up to three Pre-Meetings with the County, GEC, TxDOT, and the County's PI Consultant Team. The County's PI Consultant Team will take the lead on initiating the Public Scoping Meeting pre-meetings with the County, TxDOT, GEC, and the Engineer. The Engineer will not be responsible for preparing the meeting minutes, but will provide input in the development of meeting minutes.
- Prepare Exhibits. The Engineer will prepare exhibits and maps for public outreach. The Engineer will provide up to three different exhibits printed in multiple copies for display at the Public Meeting. The Engineer will submit these exhibits to the GEC and County's PI Consultant Team for review. Up to four rounds of revisions are anticipated.
- Attend Public Scoping Meeting. The Engineer will provide up to four experienced meeting facilitators to attend the Public Meeting.

PUBLIC HEARING

- Attend up to three Pre-Meetings with the County, GEC, TxDOT, and the County's PI Consultant Team. The County's PI Consultant Team will take the lead on initiating Public Hearing pre-meetings with the County, TxDOT, GEC, and the Engineer. The Engineer will not be responsible for preparing the meeting minutes, but will provide input in the development of meeting minutes.
- Prepare Exhibits. The Engineer will prepare exhibits and maps for public outreach. The Engineer will provide up to three different exhibits printed in multiple copies for display at the Public Hearing. The Engineer will submit these exhibits to the GEC and County's PI Consultant Team for review. Up to four rounds of revisions are anticipated.

- Attend Public Hearing. The Engineer will provide up to four experienced meeting facilitators to attend the Public Hearing.

B. ENVIRONMENTAL IMPACT STATEMENT (EIS)

- The environmental classification for this project is assumed to be an Environmental Impact Statement (EIS) as defined by TxDOT and FHWA.

STYLE GUIDE AND INTERNAL EIS COORDINATION PLAN

- The Engineer will prepare one Style Guide and Internal EIS Coordination Plan that will be used during the preparation of the EIS. The draft Style Guide and Internal EIS Coordination Plan will be circulated to the GEC and other County Consultant Teams for review and comment. It is anticipated this deliverable will undergo two rounds of comment prior to finalization.

DELIVERABLES:

- Draft Style Guide and Internal DEIS Coordination Plan (revised based on up to two rounds of comments)
- Final Style Guide and Internal DEIS Coordination Plan

PURPOSE AND NEED STATEMENT

- Utilizing the Purpose and Need developed through the TxDOT Feasibility Study, the Engineer will refine the draft Purpose and Need Statement utilizing TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- The Engineer will also follow the AASHTO Practitioner's Guide: Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects.
- The Engineer will identify and describe the proposed action, transportation problem(s), or other needs. The project need(s) will be revised and refined to establish the rationale for the project. Supporting facts and/or data will be collected and analyzed to support the need for the project.
- Prepare a Purpose and Need statement for the corridor study, which will form the basis for the "no action" discussion in the "alternatives" section and assist with the identification of reasonable alternatives and the selection of the Preferred Alternative.

DELIVERABLES:

- Draft Purpose and Need statement with technical backup materials (revised based on up to six rounds of comments)
- Final Purpose and Need statement with technical backup materials

CONSTRAINTS MAPPING

- Utilizing the constraints map developed for the TxDOT Feasibility Study, the Engineer will enhance and refined data collection using an ESRI Product-based Geographic Information System (GIS) to analyze various environmental, planning, and engineering information within the EIS project limits. From this GIS data, the Engineer will prepare an updated Constraints Map.

DELIVERABLES:

- Draft Environmental Constraints Inventory Map (revised based on up to six rounds of comments)
- Final Environmental Constraints Inventory Map

PREPARATION OF NOTICE OF INTENT (NOI)

- The Engineer will prepare the preliminary draft of the NOI. The Engineer will submit the draft NOI to the GEC for review. It is anticipated the GEC will circulate the draft NOI for TxDOT District, Environmental Affairs Division, and General Council Division review. The Engineer will address comments from the GEC and TxDOT. The coordination of publication of the NOI and/or the cost of publication of the NOI in the newspaper is excluded from this scope of services.

DELIVERABLES:

- Draft NOI (revised based on up to six rounds of comments)
- Final NOI

INVITATION FOR PARTICIPATING/COOPERATING AGENCY INVOLVEMENT

- The Engineer will prepare the preliminary draft of the Invitation for Participating/Cooperating Agency Involvement letter. The Engineer will submit the draft Invitation for Participating/Cooperating Agency Involvement letter to the GEC for review. It is anticipated the GEC will circulate the draft Invitation for Participating/Cooperating Agency Involvement letter for TxDOT District, Environmental Affairs Division, and General Council Division review. The Engineer will address comments from the GEC and TxDOT. Once final, the

Engineer will mail the letters or send emails inviting entities to be participating or cooperating agencies (not later than 45 days after the publication of the NOI).

DELIVERABLES:

- Draft letters
- Final letters

COORDINATION PLAN

- The Engineer will prepare the preliminary draft Coordination Plan. The Engineer will submit the draft Coordination Plan to the GEC for review. It is anticipated the GEC will circulate the draft Coordination Plan for TxDOT District, Environmental Affairs Division, and General Council Division review. The Engineer will address comments from the GEC and TxDOT. Not later than 90 days after the publication of the NOI, the Engineer will mail letters or send emails transmitting the draft Coordination Plan and schedule to participating/cooperating agencies and solicit comments (comment deadline is 30 days).

DELIVERABLES:

- Draft Coordination Plan
- Final Coordination Plan
- Circulate Coordination Plan
- Up to three revised versions per comments received at milestone reviews

PREPARATION FOR AGENCY SCOPING MEETING

- The Engineer will be responsible for planning the agency scoping meeting and will lead the following tasks.
 - Formulate meeting plan
 - Develop agenda, meeting materials, presentation
 - Attend pre-meeting with GEC and TxDOT
 - Coordinate/Invite attendees/follow-up
 - Attend and Conduct meeting
 - Prepare Draft Meeting Minutes and Materials
 - Prepare Final Meeting Minutes and Materials

DELIVERABLES:

- The Engineer will submit the Agency Scoping Meeting materials to the GEC for review. It is anticipated the GEC will circulate the Agency Scoping Meeting materials for TxDOT District, Environmental Affairs Division, and General Council Division review. The Engineer will address comments from the GEC and TxDOT.

TECHNICAL REPORTS FOR THE EIS

A. COMMUNITY IMPACT ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE:

- Conduct community impact investigations in accordance with current Federal and State rules, regulations, and guidelines.
- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Complete the TxDOT Community Impact Assessment Form Technical Report for the Recommended Alternative corridor.

B. ARCHEOLOGICAL RESOURCES ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE:

- Prepare a Project Initiation Letter and Texas Antiquities Permit Application based on data collection and field reconnaissance for the Recommended Alternative corridor.
- Conduct a pedestrian survey and report of sufficient intensity to determine the nature, extent, and potential significance of any cultural resources located within the Area of Potential Effect of the Recommended Alternative in accordance with report guidelines as outlined by the Texas Historical Commissions Rules of Practice and Procedures.
- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Complete the TxDOT Archeological Background Study Report and TxDOT Archeological Pedestrian Survey Report for the Recommended Alternative corridor.

C. HISTORIC PROPERTIES ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE:

- Prepare a historic building survey report that will follow the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation and

document historic buildings and structures within the Area of Potential Effect based on data collection and field surveys of the Recommended Alternative corridor.

- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Complete the TxDOT Project Coordination Request for Historical Studies Form, Historic Resources Research Design, and Reconnaissance Survey Report for the Recommended Alternative corridor.

D. WATER RESOURCES ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE:

- Prepare report documenting the project's effects on protected water resources based on data collection and field surveys of the Recommended Alternative corridor.
- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Prepare a wetland determination and delineation report identifying: specific impacts to Waters of the United States, measures to minimize the impacts, and applicable Section 404 options in accordance with current permits and conditions based on data collection and field surveys of the Recommended Alternative corridor.
- Complete the TxDOT Water Resources Technical Report for the Recommended Alternative corridor.

E. BIOLOGICAL RESOURCES ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE:

- Prepare report documenting the project's effects on protected biological resources based on data collection and field surveys of the Recommended Alternative corridor.
- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Complete the TxDOT Biological Evaluation Form Technical Report for the Recommended Alternative corridor.

F. GEOLOGICAL ASSESSMENT AND KARST TERRAIN SURVEY

- Geological Assessments and Karst Terrain Surveys will be conducted in accordance with TCEQ, City of Georgetown 4(d) Rule, and U.S. Fish and Wildlife guidance.

- Prepare Biological Assessment for coordination with USFWS under Section 7 of the Endangered Species Act.
- Participation with the Williamson County Regional Habitat Conservation will be obtained.

G. AIR QUALITY ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE:

- Air quality analysis will be in accordance with current Federal and State rules, regulations, and guidelines.
- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Complete the TxDOT Air Quality Technical Report for the Recommended Alternative corridor.

H. HAZARDOUS MATERIALS INITIAL SITE ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE:

- Prepare a Hazardous Materials Initial Site Assessment (ISA) based on the data collection and field survey conducted and identify potential hazardous material sites in the Recommended Alternative corridor.
- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Complete the TxDOT Hazardous Materials ISA Form Technical Report for the Recommended Alternative corridor.

I. TRAFFIC NOISE ASSESSMENT FOR THE RECOMMENDED ALTERNATIVE

- Conduct traffic noise analysis in accordance with current Federal and State rules, regulations and guidelines for the Recommended Alternative.
- Utilize TxDOT guidance provided in the TxDOT Environmental Toolkit for this task.
- Prepare a Traffic Noise Technical Report for the Recommended Alternative corridor.

J. INDIRECT AND CUMULATIVE IMPACTS TECHNICAL REPORT

- The Engineer will prepare an Indirect and Cumulative Impacts Technical Report and all applicable investigations per TxDOT's online Environmental Toolkit. The Engineer will perform a site visit the Reasonable Alternative when ROE can be obtained.

DELIVERABLES:

The Engineer will address comments to the draft Technical Reports for up to six rounds of comments (2 rounds of GEC, 2 rounds of TxDOT Austin District, and 2 rounds of TxDOT Environmental Affairs Division/Legal Sufficiency Review). The final approved versions of the Technical Reports will be submitted to the GEC.

- Draft & Final Community Impact Assessment Form Technical Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Archeological Background Study Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Archeological Pedestrian Survey Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Project Coordination Request for Historical Studies Form (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Historic Resources Research Design (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Historic Resources Reconnaissance Survey Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Water Resources Technical Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Biological Evaluation Form Technical Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Geological Assessment and Karst Terrain Survey ((electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Air Quality Technical Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Hazardous Materials Initial Site Assessment Form Technical Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Traffic Noise Technical Report (electronic submission of up to 5 drafts and 1 final in PDF format)
- Draft & Final Indirect and Cumulative Impacts Technical Report (electronic submission of up to 5 drafts and 1 final in PDF format)

DEIS PREPARATION AND FORMAT

- The Engineer will prepare a DEIS for the project. TxDOT approved Technical Reports will be the basis of the DEIS document preparation. Exhibits to be included in report will not exceed 11” by 17,” and will be in color. Text pages will be 8.5” by 11”. Exhibits will be reproducible via photocopying without loss of legibility. The CEQ regulations at 40 CFR 1502.12 stipulate that the DEIS summary shall stress major conclusions, areas of controversy, and issues to be resolved.
- The DEIS will summarize background data and technical analyses to support the concise discussions of the alternatives and their impacts. The DEIS will refer to the approved Technical Reports by reference. The alternatives analysis included in the DEIS will be based on limited field investigations, desktop research, and mapping. The Engineer will prepare the DEIS and include the following topics:
 - i. Executive Summary
 - i. Purpose and Need for Action
 - ii. Alternatives
 - iii. Affected Environment & Environmental Consequences
 - iv. Indirect and Cumulative
 - v. Summary of Alternatives
 - vi. Mitigation and Permitting
 - vii. Comments and Coordination
 - viii. References
 - ix. List of Abbreviations
 - x. List of Preparers
- The Engineer will prepare the preliminary draft DEIS and will submit the draft DEIS to the GEC for review. It is anticipated the GEC will circulate the draft DEIS for TxDOT District, Environmental Affairs Division, and General Council Division review. The Engineer will address comments from the GEC and TxDOT.

DELIVERABLES

- Draft DEIS (revised based on up to six rounds of comments)
- Final DEIS

NOTICE OF AVAILABILITY AND CIRCULATION OF DEIS

- The Engineer will prepare the preliminary draft of the NOA of the DEIS and submit to the East/West Corridor Consultant Team for review. The Engineer will submit the draft NOA of the DEIS to the GEC for review. It is anticipated the GEC will circulate the draft NOA of the DEIS for TxDOT District, Environmental Affairs Division, and General Council Division review. The Engineer will address comments from the GEC and TxDOT. The distribution of the NOA to

Stakeholders and the cost of publication of the NOA in the newspaper is excluded from this scope of services.

DELIVERABLES

- Draft NOA (revised based on up to six rounds of comments)
- Final NOA

PREPARATION OF FEIS/ROD

- Per TxDOT guidance, the Engineer will prepare a combined FEIS/ROD and publish in the Texas and Federal Registers.

DELIVERABLES

- Draft NOA (revised based on up to six rounds of comments)
- Final NOA

NEPA PROJECT FILE

- The Engineer will establish, track, organize and manage the Project File, which is the written record to demonstrate NEPA compliance. The Engineer will follow TxDOT's *Best Project: Project File Maintenance* document dated September 2015. The Engineer anticipates maintaining the Project File in the GEC's ProjectWise account for this project. The Engineer will also copy the GEC's specific email account created for this project to maintain email records.

FUNCTION CODE 130 - RIGHT OF WAY (ROW) MAPPING

- Research and compile deed/plat records and build a working map from recorded data for tie in and crossing right-of-ways such as RM 2433, 183A, and any county roads along project corridor.
- Perform analysis of gathered data to determine right of way monumentation and make initial pass to recover right of way monumentation.
- Draft preliminary map of existing right of way and list of impacted tracts.
- Conduct field work to locate existing property corners.
- Perform boundary analysis to determine the location of all boundary lines of the proposed right of way parcel.
- Survey and stake all proposed right of way points. A 5/8" iron rod with aluminum cap stamped "TxDOT ROW" should be placed flush with the ground at all PC's, PT's, angle points and at 1000 intervals along tangent sections. A 5/8" iron rod with aluminum cap stamped "TxDOT ROW" should be placed at the intersections of the new ROW line and individual property lines. A 5/8" iron rod with aluminum cap stamped "TxDOT Control of Access" should be placed at beginning and end of all limits of Controlled Access.
- Place a fiberglass survey marker post at all monuments along the proposed ROW line and easement line. The fiberglass posts and aluminum caps will be provided by the State.
- Submit a preliminary, and upon approval, a final ROW map. On the ROW Map show existing ROW (by bearing and distance) through the entire length of the project, even in areas where no new ROW is needed. In areas where new ROW is only needed on one side, the ROW on both sides of the new facility shall be delineated and monumented. Prepare right-of-way maps using *MicroStation* software graphics system capable of producing graphics files that can be plotted and viewed without further modification or conversion using the State's *MicroStation* VB graphics system.
- Submit preliminary, and upon approval, final parcel plats and deed descriptions. The Engineer shall submit closure sheets for each right-of-way parcel, parcel sketch, and property description for each submittal required in the work authorization. Prepare parcel plats using *MicroStation* software graphics system capable of producing graphics files that can be plotted and viewed without further modification or conversion using the State's *MicroStation* VB graphics system. Prepare each property description using a computer word processing system capable of producing data files readable using Microsoft Word files that are

compatible with State word processing software. Index by parcel number each copy of instruments of record submitted to the State.

- Where material discrepancies are found between the record and the conditions discovered, the Surveyor for the Engineer shall make a general reference to the discrepancy on the plat of survey and a specific reference to a report of survey which more specifically describes the discrepancy.
- Use surface coordinates based on the Texas State Plane Coordinate System for coordinates appearing on right-of-way maps and in property descriptions. Ensure the surface adjustment factor utilized for the ROW mapping is the same surface adjustment factor utilized in the preliminary engineering. If discrepancies are found the Engineer shall immediately notify the State project manager.

K. DELIVERABLES:

- PRELIMINARY ROW MAP AND AFFECTED PROPERTY OWNER LIST (DRAWING FILE, PDF, AND HARDCOPIES).
- FINAL ROW MAP AND AFFECTED PROPERTY OWNER LIST (DRAWING FILE, PDF, AND HARDCOPIES).
- PRELIMINARY AND FINAL PARCEL PLATS AND DEED DESCRIPTIONS

FUNCTION CODE 150 - SURVEYING

A. RIGHT OF ENTRY ([100] letters assumed)

- Prepare and mail right of entry letters per the County's standard for the project team including environmental, geotechnical, and design surveys. Send a second follow up letter to non-responsive property owners within two weeks.

B. PROJECT PRIMARY AND AERIAL CONTROL SURVEY

- Establish horizontal and vertical Primary Control setting two (2) inter-visible monument pairs at locations near both ends, middle of project and additional monuments at 1-mile spacing along remaining project study area. The survey control points (ten (10) total) will be set in locations that will likely be undisturbed by construction or State maintenance. The project control will be placed on horizontal and vertical datums [NAD83/93/NAVD88 values (Texas State Plane, Central Zone)] with a scale factor as provided by the County. Elevations will be derived from GPS observations using Geoid 2012B model. Digital levels will be run through all major control points to confirm the established elevations.
- Set aerial target or photo identify locations for aerial LiDAR mapping control in the immediate area.
- Survey a sample of ground data (truthing) in areas not requiring right of entry e.g., crossing roadways, watercourses, etc.
- Perform coordinate system translations for existing file integration and to generate a homogenous project coordinate system.

DELIVERABLES:

- DGN file of ground verification data and crossing roadway information.
- DTM and associated TIN files.
- Control Monument data in ASCII format. ASCII file of ground verification data.
- Create control data and recovery index and data sheets.
- Control Data Sheets

C. DESIGN SURVEY

- The Engineer will establish secondary horizontal and vertical control within the survey limits. The survey control points will be set in locations that will likely be undisturbed by construction or State maintenance. The secondary project control

will be placed on horizontal and vertical datums [NAD83/93/NAVD88 values (Texas State Plane, Central Zone)] with a scale factor of 1.00011 or directed by the County. Elevations will be derived from GPS observations using Geoid 2012B model.

- The Engineer will supplement the aerial mapping design survey with conventional on-the-ground surveying in areas that are obscured (assume 25%) from the LiDAR sensors field of view. Exact location of trees is not included in this scope of services.
- Supplemental design survey data will be merged and appended to the aerial mapping 2D and DTM to create seamless 2D, DTM and TIN files

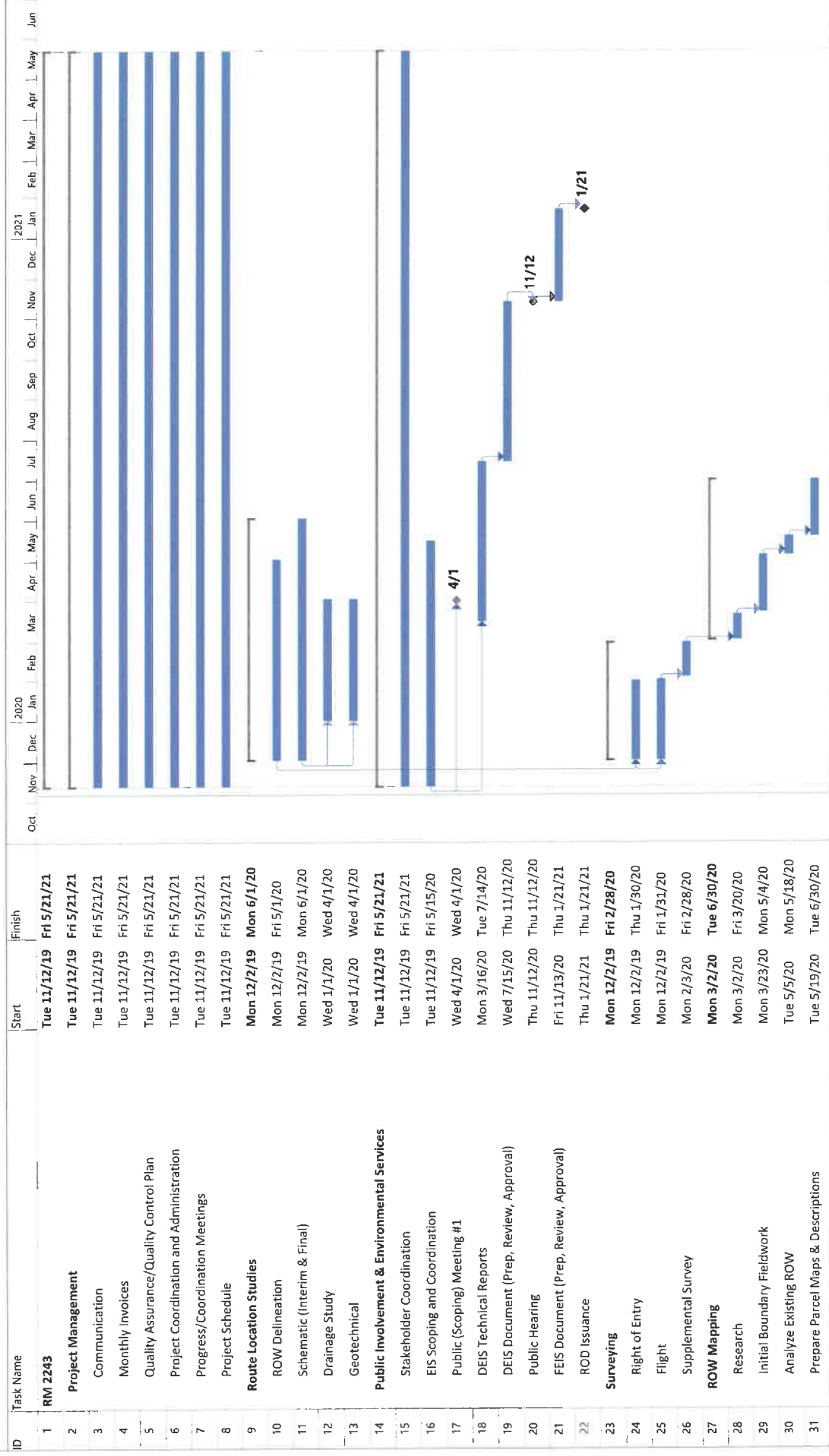
DELIVERABLES:

- 2D planimetrics, 3D DTM (Microstation V8)
- .Gpk and TIN file.
 - Word doc file of surveyed points list and TxDOT descriptor code list.
 - PDF file scanned field book copies.

D. AERIAL FLIGHT

- The Engineer shall provide all digital data in the format required by TxDOT.
- Photogrammetric services will include the following aspects:
 - Obtain new color aerial photography
 - Obtain airborne LiDAR data
 - Perform aerotriangulation
 - Perform 1" = 50' scale digital planimetric mapping
 - Mapping extents to be 100 feet outside of the proposed right-of-way lines.
 - Perform LiDAR classification to "bare earth"
 - Develop edited 1' contours from "bare earth" LiDAR data
 - Perform digital orthophoto rectification with a 0.25' pixel resolution
 - Tiled LiDAR data files of classified points in LAS format.

Attachment C
RM 2243 WA#1 Contract Schedule



PROJECT SUMMARY			
Firm	Amount	Percent	
BGE	\$2,588,989	65.5%	
Corsair	\$248,371	6.3%	
Amaterra	\$105,950	2.7%	
RPS	\$471,472	11.9%	
Inland	\$119,831	3.0%	
JMT	\$51,840	1.3%	
BBJ	\$87,720	2.2%	
WSB	\$69,834	1.8%	
SAM	\$148,072	3.7%	
SWCA	\$58,175	1.5%	
Total	\$3,950,253	100.0%	

SUMMARY BY FIRM & TASK DESCRIPTION												
Function	Firm	Corsair	Amaterra	RPS	Inland	JMT	BBJ	WSB	SAM	SWCA	Function Totals	
ROUTE AND DESIGN STUDIES	BGE	\$117,132	\$0	\$0	-	\$50,296	\$86,176	\$68,280	\$0	-	\$1,107,159	
SOCIAL, ECONOMIC AND ENV. STUDIES AND PUBLIC INVOLV.		\$0	\$0	\$49,760	-	-	-	\$0	\$0	-	\$1,462,322	
UTILITY INVESTIGATION		\$0	\$93,964	\$413,052	-	-	-	\$0	\$0	\$51,986	\$0	
RIGHT OF WAY DATA		-	-	-	-	-	-	-	-	-	\$580,000	
PROJECT MANAGEMENT AND ADMINISTRATION		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,300	\$201,358	
SURVEYING		\$0	\$0	\$0	\$108,651	\$0	\$0	\$0	\$118,548	-	\$377,409	
ROADWAY DESIGN CONTROLS		\$0	\$0	\$0	-	-	-	-	\$0	-	\$0	
DRAINAGE		\$0	\$0	\$0	-	-	-	\$0	\$0	-	\$0	
SIGNING, PAVEMENT, MARKINGS AND SIGNALIZATION		\$0	\$0	\$0	-	-	-	\$0	\$0	-	\$0	
MISCELLANEOUS (ROADWAY)		\$0	\$0	\$0	-	-	-	\$0	\$0	-	\$0	
BRIDGE DESIGN		\$0	\$0	\$0	-	-	-	\$0	\$0	-	\$0	
CONSTRUCTION PHASE SERVICES		\$0	\$0	\$0	-	-	-	\$0	\$0	-	\$0	
OTHER DIRECT EXPENSES		\$48,920	\$7,788	\$8,660	\$11,180	\$1,544	\$1,544	\$1,544	\$29,524	\$479	\$139,686	
UNIT COST		\$28,503	\$0	\$0	\$0	\$0	\$0	\$0	\$0	-	\$82,319	
TOTAL		\$248,371	\$105,950	\$471,472	\$119,831	\$51,840	\$87,720	\$69,834	\$148,072	\$58,175	\$3,950,253	

PROJECT NAME: RM 2243
TYPE OF WORK:
COUNTY: WILLIAMSON
PRIME PROVIDER: BGE

TASK DESCRIPTION	PRINCIPAL/DIRECTOR	SENIOR PROJECT MANAGER	QC MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	GRADUATE ENGINEER	SENIOR DESIGN TECHNICIAN	DESIGN TECHNICIAN	SENIOR CADD TECHNICIAN	CLERICAL	ROW DOCUMENTS (PER PARCEL)	TOTAL LABOR HRS. & COSTS
ROUTE AND DESIGN STUDIES												
Data Collection												0
Record Research	8	24				24	24					0
Field Investigation				20	20							80
Property Ownership Information	8			24		24	36					60
Traffic Evaluations and Projections												0
Review Previous Traffic Studies	10	16		16								42
Design Criteria	10	12		16	20							58
Preliminary Cost Estimates	24	16		24	36	48	36					184
Preliminary ROW Requirements	24	32		48		56	56					216
												0
												0
Schematic												0
Revisions to Schematic												0
Rightway Alignments (Horizontal and Vertical)	24	32	36	60	64	72	140					428
3D Model	24	48	40	120	140	156	164					662
												0
Traffic Evaluations and Projections												0
Analyze provided results	16	20		24	24							84
												0
Schematic Roll Plots												0
Preliminary - Interim Roll Plots	16	30	36	28	32	48	60					250
Preliminary - Ultimate Roll Plots	20	36	40	28	32	48	60					264
												0
Conceptual Traffic Control Plan (TCP)												0
Preliminary - Interim TCP Roll Plots	16	32	32	36	66	72	96			4		344
Preliminary - Ultimate TCP Roll Plots	8	24	32	48	64	84	96			4		360
												0
												0
												0
Drainage Study												0
Develop H&H Models (18 major crossings, 17 cross drainage structures)	8	20	32	24	36	48	40					208
FEMA and Local Floodplain Administrator Coordination	8	16		16	16							56
Impact and Mitigation Analysis	8	12		36	20	30						106
Water Quality Analysis	8	16		24	48	36	24					156
Drainage Report	8	12	24	12	20	20	12					108
												0
												0
												0
HOURS SUB-TOTALS	248	398	212	604	628	766	844	0	0	8	0	3768
HOURLY COST RATE	\$280.00	\$235.00	\$270.00	\$250.00	\$195.00	\$190.00	\$194.00	\$120.00	\$80.00	\$85.00	\$5,800.00	
TOTAL LABOR COSTS	\$1,192.00	\$933.00	\$792.00	\$152,800.00	\$122,160.00	\$144,160.00	\$163,160.00	\$0.00	\$0.00	\$685.00	\$0.00	\$748,506.00
% DISTRIBUTION OF STAFFING	9.16%	12.72%	9.98%	18.07%	16.45%	13.89%	18.34%	0.00%	0.00%	0.09%	0.00%	100.00%
SUB-TOTAL												\$748,506.00

OTHER DIRECT EXPENSES				QTY	RATE	COST
Postage- CURRENT POSTAL RATE				50	\$0.00	\$0.00
Foam Board Exhibit (36x48)				20	\$50.00	\$1,000.00
Lodging/Hotel (Taxes / fees not included)				6	145.00	\$870.00
Lodging/Hotel - Taxes and fees				6	40.00	\$240.00
Meals (Excluding alcohol & tips)				6	56.00	\$336.00
Mileage				2000	0.58	\$1,160.00
Rental Car (includes taxes and fees; Insurance costs will not be reimbursed)				1	100.00	\$100.00
Toll Charges					5.00	\$0.00
Air Travel				1	350.00	\$350.00
Oversize, special handling or extra baggage airline fees					50.00	\$0.00
Parking					30.00	\$0.00
Rental Car Fuel				1	4.00	\$4.00
Taxi/Cab Fare					30.00	\$0.00
Materials and Shipping					35.00	\$0.00
Standard Postage				3	0.55	\$1.65
Overnight Mail - letter size				3	25.50	\$76.50
Overnight Mail - oversized box				3	50.00	\$150.00
Courier Services				3	50.00	\$150.00
Certified Letter Return Receipt					6.85	\$0.00
Photocopies B&W (8 1/2" X 11")				1000	0.15	\$150.00
Photocopies B&W (11" X 17")				500	0.25	\$125.00
Photocopies Color (8 1/2" X 11")				500	0.75	\$375.00
Photocopies Color (11" X 17")				1000	1.25	\$1,250.00
Plots (B&W on Bond)					0.75	\$0.00
Plots (Color on Bond)					1.50	\$0.00
Plots (Color on Photographic Paper)					4.00	\$0.00
Color Graphics on Foam Board					18.00	\$0.00
Presentation Boards up to 48" X 60" Color Mounted				6	200.00	\$1,200.00
Outside Printing - Reports (includes labor and supplies)					50.00	\$0.00
Historical Aerial Images (Photographs, Negatives, Maps)				2	125.00	\$250.00
Aerial Photographs (4" = 500' scale)					125.00	\$0.00
Tx Parks & Wildlife Data Request Fees					85.00	\$0.00
FEMA FIS Backup Data Request				1	400.00	\$400.00
FEMA Maps				1	25.00	\$25.00
Hazardous Materials Database Search				1	750.00	\$750.00
Curator (Drawer & TX Archaeological Research					2,250.00	\$0.00
Lab for artifacts & report					100.00	\$0.00
Maps and Map Records				1	900.00	\$900.00
Environmental Database search					40.00	\$40.00
Environmental Field Supplies (lathes, stakes, flagging, spray paint, etc.)				1	500.00	\$0.00
TARL Curation Fee						
Property Record Fees (Courthouse and Courthouse Direct Record Fees)				100	50.00	\$5,000.00
Research Data Report				2	\$1,000.00	\$2,000.00
GPS Daily Rental				10	\$50.00	\$500.00
Certified Deed Copies				100	\$5.00	\$500.00
GPS RTK (rates applied to actual time GPS units are in use)					\$30.00	\$0.00
GPS Static (rates applied to actual time GPS units are in use)					\$30.00	\$0.00
Rainometer					\$100.00	\$0.00
Type II ROW Monument - Excavated/Drilled rocks, rocky soil, 2-4 inch depth				20	\$240.00	\$4,800.00
Type II ROW Monument - Fenced 2-3 feet (includes One Call, crew time,				20	\$290.00	\$5,800.00
SUBTOTAL DIRECT EXPENSES					\$0.00	\$0.00
SUBTOTAL				\$28,503.15		\$28,503.15

TOTAL \$2,585,989.15

ATTACHMENT E - FEE SCHEDULE
METHOD OF PAYMENT: SPECIFIED RATE AND UNIT COST

PeopleSoft Contract No. 8346
Legacy Contract No. 13-85DP5001

CSJ:
PROJECT NAME: RM 2243
TYPE OF WORK:
COUNTY:
SUBPROVIDER: CORSAIR

TASK DESCRIPTION	PRINCIPAL	SR. PROJECT MANAGER	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEER TECH	ENGINEER TECH	ADMIN/ CLERICAL	TOTAL LABOR HR AND COST
ROUTE AND DESIGN STUDIES											
Boring Layout and Staking				4			8				0
Field Services/Logging During Drilling							190				12
Sample Analysis and Lab Assignments			5	5	10	15	50				190
Preliminary Pavement and Bridge Report		25		40	70	120	150				85
Final Pavement and Bridge Report		15	10	20	35	45	80				400
Invoicing & Clerical										15	190
											15
											0
HOURS SUB-TOTALS	0	52	35	69	115	180	478	0	0	15	892
HOURLY CONTRACT RATE	\$271.00	\$271.00	\$240.87	\$180.66	\$165.59	\$143.01	\$105.37	\$82.80	\$46.97	\$72.23	
TOTAL LABOR COSTS	\$0.00	\$14,092.00	\$8,430.45	\$12,465.54	\$19,042.85	\$25,741.80	\$50,366.86	\$0.00	\$0.00	\$1,084.20	\$117,131.70
% DISTRIBUTION OF STAFFING	0.00%	12.03%	7.20%	10.64%	16.26%	21.86%	43.00%	0.00%	0.00%	0.93%	100%
SUBTOTAL											
\$117,131.70											

OTHER DIRECT EXPENSES				
Lodging/Hotel - Taxes and Fees (per day/person)		QTY	RATE	COST
Lodging/Hotel- taxes and fees not included (per day/person)		34	\$30.00	\$1,020.00
Meals (per day/person)		34	\$86.00	\$3,264.00
Mileage		34	\$56.00	\$1,904.00
Rental Car Fuel - (per day)		400	\$0.58	\$232.00
AASHTO Accreditation Soil Laboratory (per each)			\$0.00	\$0.00
CORL Accreditation (per each)			\$0.00	\$0.00
Traffic Control Services, Arrow Boards, Attenuator Trucks- Small Project (includes labor, equipment and fuel (per day)			\$0.00	\$0.00
Traffic Control Services, Arrow Boards, Attenuator Trucks- Medium Project (includes labor, equipment and fuel (per day)			\$0.00	\$0.00
SUBTOTAL DIRECT EXPENSES				
		17	\$2,500.00	\$42,500.00
SUBTOTAL				
\$48,920.00				

SUR UNIT COST				
Calcium Carbonate Content of Soils-ASTM D4373- (per each)				
California Bearing Ratio (Single Sample without MD Curve)- ASTM D1883 (per each)			EACH	\$0.00
Casagrande Type Piezometers - (per each)		2	EACH	\$350.00
Casagrande Type Piezometers Installation (per each)			EACH	\$0.00
Concrete JAC Patch- (per patch)		24	EACH	\$0.00
One Dimensional Swell - Method C- ASTM D4546 (per each)			PATCH	\$25.00
Soil Boring/Rock Coring without TCP (<60 ft). (per LF)		80	PER LF	\$0.00
Soil Boring/Rock Coring with TCP (<60 ft)- Tex-132-E (per LF)		960	PER LF	\$30.00
Soil Boring/Rock Coring with TCP (>60 ft)- Tex-132-E (per LF)		160	PER LF	\$35.50
Soilfilling Tensile of Intact Rock Core - ASTM D3967 (per each)			PER LF	\$40.50
Stand by of Crew (per hour)			PER EACH	\$0.00
Standard Guide for Comparison of Field Methods for Determining Hydraulic Conductivity in Vadose Zone- ASTM D5126 (per each)			PER HOUR	\$0.00
Standard Penetration Test (SPT) - ASTM D1586 (per each)			PER EACH	\$0.00
Standard Proctor Test - ASTM D698 (per each)		2	PER EACH	\$0.00
Unconfined Compressive Strength (Sol)- ASTM D2166 (per each)		45	PER EACH	\$250.00
SUBTOTAL				
\$2,925.00				

2 @ 10' Borings
2 @ 80' Borings for Bridges

**ATTACHMENT E - FEE SCHEDULE
METHOD OF PAYMENT: SPECIFIED RATE AND UNIT COST**

Peoplesoft Contract No. 8346
Legacy Contract No. 13-85DP5001

CSJ:
PROJECT NAME: RM 2243
TYPE OF WORK:
COUNTY:
SUBPROVIDER: CORSAIR

Determining Moisture Content in Soil Materials - Tex-103-E (per each)				286	PER EACH	\$9.00	\$2,574.00
Determining Liquid Limits of Solid- Tex-104-E (per each)				85	PER EACH	\$38.00	\$3,230.00
Determining Plastic Limits of Soils - Tex - 105-E (per each)				85	PER EACH	\$38.00	\$3,230.00
Particle Size Analysis of Soils - Tex-110-E (per each)				85	PER EACH	\$85.00	\$5,525.00
Determining the Amount of Material in Soils Finer than the 75 micrometer (No. 200) Sieve- Tex-111-E (per each)				85	PER EACH	\$55.00	\$4,675.00
Laboratory Compaction Characteristics and Moisture-Density Relationship of Base Materials - Tex-1130E (per each)					PER EACH	\$0.00	\$0.00
Bentonite Grouting of Boreholes - Bentonite Chips (per LF)				1200	PER LF	\$10.00	\$12,000.00
Backfill Borings (per LF)					PER LF	\$0.00	\$0.00
ATV-mounted Drilling Rig Surcharge (per each)					PER EACH	\$0.00	\$0.00
Determine Chloride and Sulfate and Sulfate Content in Soils Tex-620-J (per each)				28	PER EACH	\$50.00	\$1,400.00
Night Drilling Surcharge (per each)					PER EACH	\$0.00	\$0.00
Ground Penetrating Radar Testing (stand-alone) (per day)					PER DAY	\$0.00	\$0.00
Ground Penetrating Radar Testing (attached to FWD) (per day)					PER DAY	\$0.00	\$0.00
Light Tower (for night drilling) (per night)					PER NIGHT	\$0.00	\$0.00
Mobilization of Traffic Control (trips over 100 miles from office to site) (per mile)					PER MILE	\$0.00	\$0.00
Mobilization of Drilling Rig (Trip Less than 100 miles from office to site) (per each)					PER EACH	\$0.00	\$0.00
Mobilization of Drilling Rig (Trip over 100 miles from office to site), per mile				400	TRIP OVER 100 MILES FROM OFFICE TO SITE	\$5.00	\$2,000.00
SUBTOTAL SUR UNIT COST							\$82,319.00

SUBTOTAL				\$82,319.00
TOTAL				\$248,370.70

PROJECT NAME RM 2243
COUNTY WILLIAMSON
PRIME PROVIDER AMATERRA

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ARCHEOLOGIST PRINCIPAL INVESTIGATOR	ARCHEOLOGIST IV	ARCHEOLOGIST III	ARCHEOLOGIST III	SENIOR HISTORIAN	SENIOR ARCHITECTURAL HISTORIAN	HISTORIAN II	ADMIN CLERICAL	SENIOR GIS OPERATOR	TOTAL LABOR HRS. & COSTS
SOCIAL, ECONOMIC AND ENV. STUDIES AND PUBLIC INVOLV.												
Historic PCR	2	1					1	2	10		5	22
Historic Research Design	2	1					2	24	8		2	39
Historic Fieldwork	2	1					2	10	10		2	27
Historic Resources Survey Report	4	4					8	120	120	12	15	284
Archaeology Background Studies	2	1	4	10							6	23
Archaeology Fieldwork	4	1	24	92	84	160					4	359
Archaeology Report	4	4	8	72	32	8				12	8	148
HOURS SUB-TOTALS	20	13	36	174	116	168	13	156	148	24	44	912
HOURLY CONTRACT RATE	\$251.00	\$145.00	\$131.00	\$86.00	\$94.00	\$85.00	\$143.00	\$115.00	\$85.00	\$85.00	\$109.00	
TOTAL LABOR COSTS	\$5,020.00	\$1,885.00	\$4,716.00	\$16,704.00	\$10,904.00	\$14,280.00	\$1,859.00	\$18,564.00	\$13,172.00	\$2,064.00	\$4,736.00	\$83,964.00
% DISTRIBUTION OF STAFFING	5.34%	2.01%	5.02%	17.78%	11.80%	15.20%	1.98%	19.76%	14.02%	2.25%	5.10%	100%
SUBTOTAL												

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ARCHEOLOGIST PRINCIPAL INVESTIGATOR	ARCHEOLOGIST IV	ARCHEOLOGIST III	ARCHEOLOGIST III	SENIOR HISTORIAN	SENIOR ARCHITECTURAL HISTORIAN	HISTORIAN II	ADMIN CLERICAL	SENIOR GIS OPERATOR	TOTAL LABOR HRS. & COSTS
PROJECT MANAGEMENT AND ADMINISTRATION												
Project Invoicing and Progress Reports	2	16								16		34
HOURS SUB-TOTALS	2	16	0	0	0	0	0	0		16	0	34
HOURLY CONTRACT RATE	\$251.00	\$145.00	\$131.00	\$86.00	\$94.00	\$85.00	\$143.00	\$115.00	\$85.00	\$85.00	\$109.00	
TOTAL LABOR COSTS	\$502.00	\$2,320.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$86.00	\$0.00	\$4,166.00
% DISTRIBUTION OF STAFFING	11.86%	35.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.18%	0.00%	100%
SUBTOTAL												

OTHER DIRECT EXPENSES	QUANTITY	RATE	COST
Line # 20 miles current sale day	1.000	\$0.590	\$0.59
Photocopy BAW 8.5 X 11	1.000	\$0.15	\$0.15
Photocopy Color 8.5 X 11	1.000	\$0.75	\$0.75
Photocopy BAW 8.5 X 11	1.000	\$0.15	\$0.15
Historic Aerial Im #48	1	\$752.30	\$752.30
Barcode Rental	2	\$1,500.00	\$3,000.00
Custom Records & Report	2.00	\$450.00	\$900.00
SUB TOTAL OTHER EXPENSES			\$7,762.89

SUB TOTAL	\$7,762.89
TOTAL	\$105,850.00

PROJECT NAME: RM 2243
TYPE OF WORK:
COUNTY:
SUB-PROVIDER: RPS

[illegible][illegible][illegible]

SUBTOTAL	5471.60
TOTAL	5471.60

PROJECT NAME: RM 2243
TYPE OF WORK:
COUNTY:
PRIME PROVIDER: INLAND

TASK DESCRIPTION		PRLS PROJECT MANAGER	RPLS TASK LEADER	SENIOR SURVEY TECH	SENIOR GIS OPERATOR	GIS OPERATOR	GIS TECHNICIAN	FLAGGER	ABSTRACTOR	1-PERSON SURVEY CREW	2-PERSON SURVEY CREW	3-PERSON SURVEY CREW	4-PERSON SURVEY CREW	TOTAL LABOR HRS. & COSTS
SURVEYING														
Supplemental Survey (25%)		18	20	130	140		20				60	120		0
Create final DTM and Topo		12	36	60	20									802
														236
HOURS SUB-TOTALS		28	56	180	160	0	20	0	0	0	60	120	0	0
HOURLY CONTRACT RATE		\$203.46	\$155.56	\$113.70	\$113.70	\$92.75	\$63.76	\$55.65	\$68.62	\$105.00	\$160.00	\$180.00	\$205.00	\$5,800.00
TOTAL LABOR COSTS		\$5,696.77	\$8,712.70	\$21,602.24	\$18,191.36	\$0.00	\$1,675.52	\$0.00	\$0.00	\$0.00	\$9,600.00	\$21,600.00	\$0.00	\$108,660.91
% DISTRIBUTION OF STAFFING		5.24%	8.02%	19.88%	16.74%	0.00%	1.54%	0.00%	0.00%	0.00%	8.64%	19.88%	0.00%	100%

SUBTOTAL	\$108,650.91
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SUBTOTAL Labor	\$108,650.91
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OTHER DIRECT EXPENSES			
	QTY	RATE	COST
Postage		\$0.000	\$0.00
Mileage (per mile)	1000	\$0.580	\$580.00
Logging/Hole (Traxes & Fees Included)		\$150.00	\$0.00
Type II ROW Monument - Excavated/Drilled, rocks, rocky soil, 2-4 inch	20	\$240.00	\$4,800.00
Type II ROW Monument - Poured 2-3 feet (includes One Call, crew time,	20	\$260.00	\$5,200.00
Microsoft 365 OneDrive Project Wise License fee and server		\$100.00	\$0.00
SUBTOTAL DIRECT EXPENSES		\$0.00	\$11,160.00

SUBTOTAL	\$11,160.00
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TOTAL	\$119,810.91
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PROJECT NAME: CAMPO - RM 2243
TYPE OF WORK:
COUNTY:
SUB-PROVIDER: JMT

TASK DESCRIPTION	SENIOR ADVISOR	SR PROJECT MANAGER	SR. PROFESSIONAL II	SR. ENGINEERING TECH	PROFESSIONAL I	ADMINISTRATIVE/ CLERICAL	TOTAL LABOR HRS. & COSTS
ROUTE AND DESIGN STUDIES							
MONTHLY INVOICES AND PROGRESS REPORTS		32				32	64
COORDINATION MEETINGS	16	16					32
DESIGN SUPPORT	20	20	36	60	60		196
HOURS SUB-TOTALS	36	68	36	60	60	32	292
HOURLY CONTRACT RATE	\$235.00	\$225.00	\$210.00	\$155.00	\$125.00	\$68.00	
TOTAL LABOR COSTS	\$8,460.00	\$15,300.00	\$7,560.00	\$9,300.00	\$7,500.00	\$2,176.00	\$50,296.00
% DISTRIBUTION OF STAFFING	16.82%	30.42%	15.03%	18.49%	14.91%	4.33%	100.00%

SUBTOTAL	\$50,296.00
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OTHER DIRECT EXPENSES			
	QTY	RATE	COST
Lodging/Hotel (Taxes / fees not included)	4	145.00	\$580.00
Lodging/Hotel - Taxes and fees	4	40.00	\$160.00
Meals (Excluding alcohol & tips)	4	56.00	\$224.00
Mileage	1000	0.58	\$580.00
Rental Car (Includes taxes and fees; Insurance costs will not be		100.00	\$0.00
SUBTOTAL DIRECT EXPENSES			\$1,544.00

SUBTOTAL	\$1,544.00
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TOTAL	\$51,840.00
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SUB-PROVIDER: BBI

TOTAL	\$87,720.00
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PROJECT NAME: RM 2243
 TYPE OF WORK:
 COUNTY:
 PRIME PROVIDER: WSB

TASK DESCRIPTION	PRINCIPAL	SR. PROJECT MANAGER	SR. PROJECT ENGINEER	SR. TRAFFIC ENGINEER	PROJECT ENGINEER I	PROJECT ENGINEER II	OFFICE TECHNICIAN II	TOTAL LABOR HRS. & COSTS
ROUTE AND DESIGN STUDIES								
MONTHLY INVOICES AND PROGRESS REPORTS		32					32	
COORDINATION MEETINGS	24	24						48
DRAINAGE DESIGN SUPPORT	24	32	48		80	80		304
								0
								0
								0
								0
								0
								0
								0
								0
								0
HOURS SUB-TOTALS	48	88	48	0	80	80	32	416
HOURLY CONTRACT RATE	\$210.00	\$200.00	\$195.00	\$180.00	\$145.00	\$153.00	\$62.00	
TOTAL LABOR COSTS	\$10,080.00	\$17,600.00	\$9,360.00	\$0.00	\$11,600.00	\$12,240.00	\$1,984.00	\$68,289.60

SUBTOTAL	\$68,289.60
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OTHER DIRECT EXPENSES			
	QTY	UNIT	COST
Lodging/Hotel (Taxes / fees not included)	4	145.00	\$580.00
Lodging/Hotel - Taxes and fees	4	40.00	\$160.00
Meals (Excluding alcohol & tips)	4	56.00	\$224.00
Mileage	1000	0.58	\$580.00
Rental Car (Includes taxes and fees; Insurance costs will not be		100.00	\$0.00
SUBTOTAL DIRECT EXPENSES			\$1,544.00

SUBTOTAL	\$1,544.00
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PROJECT NAME: RM 2243
TYPE OF WORK:
COUNTY:
PRIME PROVIDER: SAM

TASK DESCRIPTION	SURVEYING PRINCIPAL	SURVEYING RPLS PROJECT MANAGER	SURVEYING RPLS TASK LEADER	SURVEYING SENIOR SURVEY TECHNICIAN	SURVEYING SURVEY TECHNICIAN	SURVEYING 2-PERSON SURVEY CREW	SURVEYING 3-PERSON SURVEY CREW	FLIGHT CREW FIXED WING AIRCRAFT	GEOSPATIAL SR. PROJECT MANAGER	GEOSPATIAL PROJECT/ ACQUISITION MGR	GEOSPATIAL PILOT	GEOSPATIAL PHOTOGRAMMETRIST PROJECT LEAD	GEOSPATIAL ACQUISITION/CALIBRATION/ AERIAL TRIANGULATION TECH	GEOSPATIAL LIDAR PHOTOGRAMMETRY TECHNICIAN	TOTAL LABOR HRS. & COSTS
SURVEYING															
SAM Geospatial															
Aerial Acquisition								8	2	6	8	18			0
Calibration									4	6		4		8	40
Data Extraction										24		6	32	232	54
Orthophotography										24		8	12	212	262
QA/QC									8			8	2	4	256
															22
															0
SAM Survey															
Aerial Targets / PLOTS (34 targets x 16 inch)	3	9	9	16	28	60									14
Primary Control (10 monuments) Different in Towns	2	20	20	32	48	110	50								265
QA/QC	1	1	1	2	6										10
GEOSPATIAL SUB-TOTALS:	6	10	10	50	80	170	150	8	14	60	8	42	46	456	1024
HOURLY CONTRACT RATE:	\$215.00	\$175.00	\$158.00	\$98.00	\$95.00	\$140.00	\$165.00	\$190.00	\$205.00	\$165.00	\$130.00	\$115.00	\$55.00	\$55.00	
TOTAL LABOR COSTS:	\$1,290.00	\$1,750.00	\$1,580.00	\$4,900.00	\$7,600.00	\$23,800.00	\$24,750.00	\$1,520.00	\$2,870.00	\$9,900.00	\$1,040.00	\$4,830.00	\$2,508.00	\$2,508.00	\$118,848.00
7.25 TIMES TOTAL SURVEYING	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
SUBTOTAL	\$118,548.00														

OTHER DIRECT EXPENSES	QTY	RATE	COST
GEOSPATIAL EQUIPMENT			
MI LEAGE (PER MILE)	1650	\$0.59	\$977.00
GROUND TARGET (INCLUDES PAINT, MARKER MATERIAL, ETC.)	34	\$28.00	\$952.00
WING AIRCRAFT (INCLUDES AIRCRAFT, PILOT, CAMERA/LIDAR OPERATOR, FUEL AND TRANSPORTATION COST) PER PROJECT	1	\$20,000.00	\$20,000.00
FIXED WING AIRCRAFT (LOCAL AIRPORT TO PROJECT) TURN, MANEUVER MILES, LOCAL AIRPORT TO PROJECT)	9	\$8.00	\$72.00
PER MILE PHOTOGRAMMETRY - AIRBORNE GPS/IMU DATA COLLECTION/PROCESSING PER PROJECT	1	\$2,275.00	\$2,275.00
AERIAL PHOTOGRAMMETRY - PROJECT FLIGHT MILES (ON PROJECT FLIGHT MILES) PER MILE	24	\$30.00	\$720.00
GPS RECEIVER (RATES APPLIED TO ACTUAL TIME GPS UNITS ARE IN USE) - PER HOUR	190	\$25.00	\$4,750.00
PRIMARY CONTROL MONUMENT (MATERIALS/SUPPLIES)	10	\$90.00	\$900.00
SUBTOTAL DIRECT EXPENSES			\$39,554.00

SUBTOTAL \$25,554.00

TOTAL \$148,072.00

PROJECT NAME: RM 2243
COUNTY: WILLIAMSON
PRIME PROVIDER: SWCA

TASK DESCRIPTION	SUBJECT MATTER EXPERT TOM ALLEMAND (PM)	SPECIALIST XI	SPECIALIST X	SPECIALIST V	SPECIALIST IV	SPECIALIST III	SPECIALIST II	SPECIALIST I	ADMIN V	TOTAL LABOR HRS. & COSTS
SOCIAL, ECONOMIC AND ENV. STUDIES AND PUBLIC INVOLV.	8		48		52	12			2	122
Geologic Assessment and Karst Survey	2		2	2	16		4	2	2	30
Williamson County RHCP Application	40	24	32		110		16	16	4	242
Biological Assessment										0
										0
										0
										0
										0
HOURS SUB-TOTALS	50	24	82	2	178	12	20	18	8	384
HOURLY CONTRACT RATE	\$210.00	\$187.00	\$171.00	\$109.00	\$99.00	\$89.00	\$78.00	\$67.00	\$89.00	
TOTAL LABOR COSTS	\$10,500.00	\$4,488.00	\$14,022.00	\$218.00	\$17,622.00	\$1,068.00	\$1,560.00	\$1,206.00	\$712.00	\$51,396.00
SUBTOTAL	\$51,396.00									

TASK DESCRIPTION	SUBJECT MATTER EXPERT TOM ALLEMAND (PM)	SPECIALIST XI	SPECIALIST X	SPECIALIST V	SPECIALIST IV	SPECIALIST III	SPECIALIST II	SPECIALIST I	ADMIN V	TOTAL LABOR HRS. & COSTS
PROJECT MANAGEMENT AND ADMINISTRATION	30									
Project Invoicing and Progress Reports										
HOURS SUB-TOTALS	30	0	0	0	0		0		0	30
HOURLY CONTRACT RATE	\$210.00	\$187.00	\$171.00	\$109.00	\$99.00	\$89.00	\$78.00	\$67.00	\$89.00	
TOTAL LABOR COSTS	\$6,300.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$6,300.00
SUBTOTAL	\$6,300.00									

OTHER DIRECT EXPENSES	QTY	RATE	COST
Mileage (8 of miles) (current state rate)	300	\$0.590	\$174.00
GPS Receiver	4	\$50.00	\$200.00
Photocopies BAW (8.5 X 11)	200	\$0.16	\$32.00
Photocopies Color (11 X 8.5)	100	\$0.75	\$75.00
SUBTOTAL DIRECT EXPENSES			\$476.00

TOTAL	\$58,175.00
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