

WORK AUTHORIZATION NO. 2

WILLIAMSON COUNTY ROAD BOND PROJECT: RFQ T3158-CR 404 REALIGNMENT

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated July 14, 2021 and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and RPS Infrastructure, 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 \$504,918.37.

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 January 31, 2022. 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.

Continued next page

EXECUTED this ____ day of Aug 10, 2021, 20 ____.

ENGINEER:

[Insert Company Name HERE]

By:  _____

Signature

Doug Matthys

Printed Name

Chief Executive Officer North America

Title

COUNTY:

Williamson County, Texas

By:  _____

Signature

Bill Gravell

Printed Name

County Judge

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


8/5/2021

ATTACHMENT A
SERVICES TO BE PROVIDED BY THE COUNTY
FOR CR 404 REALIGNMENT PS&E

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. Provide available appropriate County data on file including 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).
4. Provide available criteria and full information as to the client's requirements for the project. Provide examples of acceptable format for the required deliverables.
5. Provide information on any meetings/discussions held with adjoining property owners that may impact the project.
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 and permits 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 consultants.
11. Negotiate with all utility companies for any agreements and/or relocations required.
12. Provide an agent as necessary to secure proposed ROW and relocate/remove improvements on proposed ROW.

13. Send Right of Entry letters to property owners.
14. Provide preferred pavement structural section for evaluation

ATTACHMENT B

SERVICES TO BE PROVIDED BY THE ENGINEER FOR

CR 404 REALIGNMENT SCHEMATIC & PS&E

PROJECT DESCRIPTION

Project Limits

New location Roadway from FM 3349 to CR 404.

Proposed Facility

Construct the interim roadway, a new 4 lane arterial roadway with shoulders.

Design Criteria

The proposed design criteria for the project will be developed from Williamson County and TxDOT design criteria. It is anticipated that in most cases the most stringent of the design criteria will be used.

1. PROJECT MANAGEMENT

a. Communication:

- 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 Report, Invoices, and Billings (6 months assumed):

- Submit monthly progress status reports to the GEC. Progress reports will include deliverable table, 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 submittal, provide evidence of their 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. This includes QA/QC of all calculations, design spreadsheets, design inputs, data, sheets, estimates, and quantities throughout the project lifespan and each milestone submittal.

d. Project Coordination & Administration:

- Prepare for and attend weekly update meetings with the County's GEC.(26 meetings assumed)
- Prepare and maintain routine project record keeping including records of meetings and minutes.
- Correspondence and coordination will be handled through & 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, coordinate and review sub-consultant work, 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 (6 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. Submit to County as requested.
- g. **Deliverables:**
- Monthly Invoices and Progress Reports including Deliverable Table
 - Project Specific QA/QC Plan
 - Meeting Minutes, Sign-In Sheets, and Agendas
 - Project Schedule and Updates
 - Project Files
 - QA/QC Documentation with Deliverable

2. ROUTE AND DESIGN STUDIES

- a. Data Collection:
- Perform record research and obtaining existing information, including but not limited to: as-built plans, construction plans, right of way maps, traffic data, environmental reports, studies, future land use maps, floodplain data, floodplain and drainage models and analyses. Obtain construction plans for projects within the project limits and abutting roadways. Obtain drainage studies, reports, and mapping for the project area, including reports for developments affecting the drainage area.
 - Review aerial photography and contours provided by Williamson County. County provided aerial photography and contours will be the basis for developing all constraints maps and route options. Obtain the existing schematic from the GEC.
 - Right of Entry (5 letters assumed):
 - Develop list of parcels requiring ROE and priority parcels for the project team including surveying, geotechnical, environmental and drainage.
 - Develop technical content for ROE request letter to be distributed to adjacent landowners
 - Conduct a field investigation of the preferred route option and the surrounding area to determine field conditions including photographic record of notable existing features.

- Develop and maintain adjacent property ownership information spreadsheet to be used for disseminating project information including owner's name, tenant name for leased property, mailing address, property address, property id number.
- Review the data collected and organize the information.

b. Stakeholder Coordination (2 meetings assumed):

- Schedule, coordinate logistics for and prepare agendas, sign in sheets, meeting minutes, discussion topics, presentations, overall exhibits, and maps of the project limits for stakeholder coordination.
- Coordinate with affected local agencies and County's consultants. Includes preparing/reviewing presentations and other communications materials for elected official briefings.
- Attend meeting with stakeholders (2 meetings assumed).

c. Design Criteria:

- In accordance with the latest version of Williamson County design criteria, prepare a Design Summary Form and highlight any recommend changes to the approved design criteria.

d. Deliverables:

- Meeting Minutes, Sign-In Sheets, Agendas, Presentations, Maps, and Exhibits for all Stakeholder Coordination Meetings.
- Draft and Final Design Summary Form (pdf and hardcopies)

3. SURVEYING

a. Design Surveying:

- Survey the area at approximately **50-foot** stations **25-feet** on either side of the proposed roadway right of way including identify existing landowners, deed recordation information, locate visible improvements and utilities including driveways, water wells, storage tanks, drainage structures (size, material, flowline elevations), edge of pavement/shoulder, physical centerline, guardrail, fences, signs, mailboxes, trees 8" inch diameter and greater, locate property boundaries sufficient to re-establish ROW.
- Establish horizontal and vertical control and set temporary benchmarks. (4 temporary Benchmarks to be set)

b. ROW Mapping

- Records Research and Deed Study will conduct research in the Williamson County Appraisal District offices to confirm property ownership for the 3 affected properties (subject properties). Concurrently, copies of the current deeds and any plats for all subject properties will be obtained from the County Clerks' records. Title Commitments, Title Reports, and any other form of records research beyond obtaining current deeds and plats will be provided by others. Obtaining any additional records (including easements, chain of title, or any encumbrances) is outside of this scope of services.
- Field Surveys will recover monuments marking the existing ROW lines (if any) and the front corners of the properties from which ROW is to be obtained and will tie to the project control. RPS will recover the corner or angle point monuments nearest to the proposed ROW on the sideline of each of the subject properties and these corners will be tied to the project control after ROE has been granted.

- Boundary Analysis will analyze the results of the survey and perform computations related to the analysis. Location of the existing ROW lines and the side property lines of each of the subject properties will be determined
- Documents will be submitted in two rounds (preliminary and final). Preliminary ROW documents shall be submitted based upon found monumentation within the existing ROW. Final ROW documents shall be submitted at a later date once review comments have been received from the County.
- 5/8-inch iron rod with “Williamson County” aluminum caps will be set at PCs, PTs, angle points and at no greater than 1,000 foot intervals along tangents on the proposed right-of-way line (up to 15 total).
- Stake the proposed ROW and proposed centerline for the CR 404 realignment one (1) time for the 3 affected properties.

c. **Deliverables:**

- 2D Planimetrics & 3D DTM (Microstation V8i)
- GPK & TIN file
- 1-Foot Contour map in Microstation V8i DGN format
- Reference Deeds and Plats (PDF Format)
- One (1) copy of each Parcel Description/Plat on 8.5”x11” paper (signed/sealed by a Texas RPLS)
- Digital files (Microstation V8i) of all Parcel Plats
- PDF Field Book Copies
- ASCII file of points

4. **SCHEMATIC DEVELOPMENT**

a. Schematic:

- Prepare Preliminary & Final (Ultimate) Schematic submittal per Williamson County Schematic submittal checklist and selected design criteria.
- Design will be completed using County data and readily available internet data (contours, aerials, etc.)
- Preparing schematic level bridge structures for the preferred schematic route. Provide preliminary location of Abutments and Bents, including straddle bents. Engineer will also provide preliminary span lengths and superstructure depths. One route will be considered.
- Develop corridor 3D model using OpenRoads for the ultimate typical section to determine ROW footprint. Develop Roadway Cross Sections at 100-ft increments and display on a roll plot.

b. Prepare Engineering Cost Estimate

- Prepare Preliminary & Final Engineering Costs Estimate for the construction quantities covering all items of the proposed work. Preliminary estimates shall be calculated for each alternative identified.

Deliverables:

- Preliminary & Final Q Schematic including cost estimate.

5. **DRAINAGE STUDY** (5 total cross drainage structures assumed)

a. Hydrologic Study & Modeling:

Detail the criteria, methodologies, results and recommendations of the analysis.

- Collect, prepare and modify existing hydrologic & hydraulic models to reflect the existing, & proposed conditions. Compare and document the study results with existing studies or models from WCIDs, USACE, TWDB, cities, etc., if available.
- Provide existing and proposed condition drainage area maps.

b. Hydraulic Study & Modeling:

- Provide hydraulic models and/or calculations for the proposed structures and existing structures to remain.
- Document existing conditions including size, length, flowline elevations, scour, flooding, erosion or other notable conditions. Document source of hydraulic/channel cross sections.
- Prepare design of the right of way drainage system, including cross drainage structures, using appropriate software (HEC-RAS, HY-8, SWMM, Bentley or other approved hydraulic modeling software). Culverts will be sized hydraulically, all other design of ROW drainage including roadside ditches will be included in the PS&E (Section 9) Section.
- Compare and document the study results with existing studies or models from WCIDs, USACE, TWDB, cities, etc., if available.
- Minimum pavement elevations based on design event WSEL for cross drainage flood elevations.
- Determine the need for ROW or easements for the project. Coordinate with the County's GEC as needed to ensure that ROW, easements and the space required for the appropriate maintenance equipment, activities and personnel is provided.
- Provide electronic files for all data collected and any developed Hydrologic & Hydraulic models. Provide CAD and/or GIS files used in the study.

c. Impact and Mitigation Analysis:

- Provide documentation of all adverse impacts resulting from the proposed facility in proposed condition. Provide a comparison of existing vs proposed at each outfall from the project area.
- Coordinate with the County's GEC as needed to ensure that proposed mitigation and/or detention facilities are in an acceptable location and have acceptable maintenance access and safety features. Provide landscaping setbacks, if requested. Criteria for this determination will be based, in part, on drainage information provided by the Engineer and on the existing and proposed design for the project area.
- Provide plans to mitigate adverse impacts to nearby buildings, property access points, and runoff patterns.
- If detention is required, provide routing analysis of storm hydrographs for the proposed condition. Design stormwater control structures, detention basin layouts and details and provide a detailed maintenance plan.
- Calculate the volume of fill to be placed in the 100-year floodplain and recommend locations for compensatory storage.

d. **Deliverables:**

- Preliminary & Final Drainage Report (Ultimate and Interim Design)
- Provide electronic files for all data collected and any developed Hydrologic & Hydraulic models. Provide CAD and/or GIS files used in the study.

6. ENVIRONMENTAL SERVICES

a. Data Collection & Field Reconnaissance:

- Obtain and update periodically publicly available information including but not limited to: locations of public buildings (schools, churches, cemeteries, parks), aerial photography, National Wetland Inventory Maps, County Soil Survey Maps, TCEQ & EPA Hazardous Materials Database Information, Vegetation Information, Environmental Information from the appropriate local, state, or federal agencies, Threatened & Endangered Species Information.
- Conduct a regulatory records review to identify listed hazardous waste generators, treatment, storage and disposal facilities; solid waste landfills, unauthorized sites; documented spills; oil and gas exploration and production sites; and underground storage tank sites within the proposed site location. The review will also identify other environmental risks along the project corridor.
- Conduct field reconnaissance to visually inspect the project site for additional risks and field verify any environmental risks identified by the regulatory records review.

b. Constraints Mapping

- Develop a constraints map that includes environmental resources, known constraints (structures, floodplain, karst features), cultural and historic resources, hazardous material sites, aerial photography, contour information, utility information, that is based on research of public databases and sources.

c. County Due Diligence:

- The Environmental Services will include studies and documentation required, per the Williamson County Environmental Protocol, for the various regulating authorities, including the Texas Historical Commission (THC), U.S. Army Corp of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), and Williamson County Conservation Foundation (WCCF). The intention of the Environmental Services is to attain necessary clearance letters and approvals in order to proceed with the proposed project.

d. Section 404 Clean Water Act Compliance:

- Conduct a site visit that will delineate wetland boundaries and ordinary high-water marks of jurisdictional waters within the project ROW. It is anticipated that this project will be covered under a Nationwide Permit (NWP 14) without a pre-construction notification (PCN).
- Prepare a Jurisdictional Waters Delineation Report identifying specific impacts of the project on the Waters of the U.S. (including special aquatic sites), measures to minimize the impacts will be identified, and discuss applicable Section 404 options in accordance with current permits and conditions based on data collection and field reconnaissance.
- *If it is determined, after the Jurisdictional Waters Delineation Report, that a PCN is required; a supplemental work authorization would be required. The Jurisdictional Waters Delineation Report and NWP with PCN are subject to the U.S. Army Corps of Engineers Forth Worth District review and issuance of a permit.*

e. Historical Site Compliance:

- If necessary, prepare a historic building survey 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 reconnaissance.

f. Phase I Environmental Site Assessment:

- Prepare a Hazardous Materials Initial Site Assessment (ISA) based on the data collection and field reconnaissance conducted and identify potential hazardous material sites that may be impacted by the proposed project.

g. Texas Antiquities Code (TAC) Compliance:

- Prepare a Project Initiation Letter, Texas Antiquities Permit Application, and Associated Scope of Work based on data collection and field reconnaissance.
- Conduct a background 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 in accordance with full report guidelines as outlined by the Texas Historical Commissions Rules of Practice and Procedures.
- Coordination with Texas Historical Commission including submittals to Texas Historical Commission and project records to the appropriate curation facility per Texas Historical Commission requirements.

h. TxDOT Categorical Exclusion (CE) Environmental Clearances:

- Prepare environmental documentation utilizing the appropriate outline in accordance with TxDOT's Environmental Manual, Title 23, Part 771, 772, FHWA's Technical Advisory T6640.8A, TxDOT's 1996 Noise Guidelines, and TxDOT 1998 Air Guidelines. Information needed for the TxDOT clearance is anticipated to be required only for the work in TxDOT ROW.
- Per TxDOT's Environmental Compliance Oversight System (ECOS), it is assumed a Work Plan Development (WPD) process would determine the appropriate technical documentation in support of and in compliance with the National Environmental Policy Act (NEPA).
- All TxDOT environmental documentation would be performed in accordance with up-to-date Environmental Compliance Toolkits.

Deliverables:

Williamson County Due Diligence

- Draft and Final Environmental Constraints Map
- Draft & Final Phase I Environmental Site Assessment
- Draft & Final Aquatic Resources Delineation Report
- Draft & Final Historic Building Survey
- Draft & Final Texas Antiquities Permit Application Associated Scope of Work and Report

TxDOT Environmental Documentation

- Draft & Final TxDOT WPD I and II
- Draft & Final TxDOT Tier I Site Assessment
- Draft and Final TxDOT Hazardous Materials Initial Site Assessment

7. GEOTECHNICAL SERVICES

a. Soil Borings:

- Perform **five (5)** pavement borings spaced approximately at 0.25 miles to a depth of (15) feet.
- Develop soil boring layout for approval by the County prior to mobilization.

b. Geotech Report:

- Perform a Geotechnical Investigation Report for the project evaluated by a professional geotechnical engineer Licensed in the State of Texas. The following items will be included in the geotechnical report: soil boring locations, boring logs (TxDOT WinCore output graphs/format), and plan of borings, subsurface exploration procedures, encountered subsurface conditions, field and laboratory test results, description of surface and subsurface conditions, groundwater conditions, analysis and recommendations for settlement, general earthwork recommendations, swell potential evaluations, pavement thickness design alternatives with subgrade stabilization, and PVR calculations. Provide Soil Core Hole Drilling required for pavement borings. Follow the procedures in the Williamson County Design Criteria Manual and contact the appropriate utility location services to have underground utilities located prior to drilling in an area.
- Perform appropriate laboratory tests on soil samples recovered from the borings. Laboratory testing will include but not limited to moisture content, liquid limit, plastic limit, unconfined compression, Texas Triaxial, resilient modulus, and free swell, sulfate testing, and particle size analysis tests, visual classification, dry density, California Bearing Ratio (CBR) tests, sulfate content tests, lime series analyses.
- Perform a pavement condition assessment consisting of field inspection on existing pavement conditions and all other pertinent features that could affect the pavement design including observations of subsurface water.

c. Pavement Design:

- Analyze County provided pavement structural sections to verify that they will work for the projects soil conditions
- Create a Pavement design technical memo of the County provided Pavement structural section based on field testing, subsequent laboratory testing, following the format noted in the Williamson County Design Criteria Manual.

Deliverables:

- Preliminary and Final Pavement technical memo.
- Draft & Final Geotech Investigation Report

8. PLAN PREPARATION (PS&E) SERVICES

Prepare plans per the current Williamson County Design Criteria Manual including applicable submittal requirements including cost estimate, checklists, hardcopies, CAD files, comment responses, design waivers/exceptions, general notes, quantities, specifications, updated design schedule, construction time determination. The engineer will develop and submit these Plans, Specifications & Estimates (PS&E) at 60%, 90%, 100% and Final Design.

a. Roadway/General:

- Title Sheet
 - Prepare a project title sheet as required for the construction plans, utilizing the template provided by the County.
- Index of Sheets
 - Prepare an index sheet(s) that shows each sheets location in the plan set.
- Project Layout
 - Prepare a project layout sheet(s) that clearly indicates the limits of the entire project.
- Typical Sections
 - Prepare typical section(s) for all proposed and existing roadways and cross streets.
- General Notes
 - Prepare general notes for applicable project-specific items, utilizing the master general notes provided by the County.
- Survey data
 - Prepare benchmark layout sheet(s) that clearly indicate the benchmark locations and associated control information.
- Horizontal Alignment Data
 - Prepare horizontal alignment data sheet(s) that depict the horizontal geometric information for the roadways to be included in the construction plan set.
- Summary Sheets
 - Prepare summary sheet(s) that tabulate, combine, and summarize quantities of the various construction items.
- Roadway Plan & Profiles
 - Prepare roadway plan and profile sheets that depict the proposed construction and clearly identify any required removals.
- Side Street/Intersection Plans
 - Side Street/Intersections layouts sheets will be prepared for up to **three (3)** locations.
 - Provide contours or details of drainage patterns for street intersections including slope or elevations along edge of pavement to avoid ponding at intersections. Where applicable, provide details of volume of flow and velocity through intersections.
- Driveways
 - Prepare driveway profiles/culverts for each driveway along the project corridor. When possible, these driveways will be defined in a tabular format. Non-typical driveways may require special details.
 - Where applicable, provide details of volume of flow and velocity across driveway intersections.
- Miscellaneous
 - Develop miscellaneous roadway detail sheets for the project that depict details required, which are not defined in standard detail sheets.

- Cross Sections
 - Develop a 3D corridor model using OpenRoads for the interim typical section and cross sections at 50-foot stations and other locations as necessary for the determination of cut and fill quantities. These sections will also be used to further refine the design vertical geometry.
- b. Traffic Control:
- Traffic Control Plans (TCP)
 - Prepare traffic control typical section(s) for each stage of the construction sequence to clearly delineate the position of the existing traffic with respect to the proposed construction.
 - Prepare a detailed narrative for the sequence of construction and traffic control general notes utilizing the sequence approved during the schematic phase. Any changes to the sequence of construction will be approved by the County prior to developing detailed TCP layouts.
 - Construction sequence plan and temporary drainage plan will be analyzed and described in narrative, typical sections, and standards. Layout sheets will only be provided at intersections.
 - Prepare detailed TCP intersection staging plans for each phase in accordance with the Texas Manual on Uniform Traffic Control Devices (TMUTCD).
 - Develop traffic control detail(s) for items not covered by County or TxDOT standard details, including providing safe access to each property along the proposed route during all phases of construction.
 - Include County and TxDOT standard details in the PS&E package as appropriate.
 - Compute an Engineer's opinion of construction schedule in order to determine an approximate duration for each of the phases of construction.
- c. Drainage:
- Drainage Area Maps
 - Develop existing and proposed external drainage area maps to show the overall project and drainage basin divides.
 - Culvert Layout Sheets
 - Develop culvert layout sheets at all the major crossing locations, up to **five (5)** locations.
 - Hydraulic Data Sheets
 - Develop a hydraulic data sheet at all the major crossing locations using HY-8 or HEC-RAS software.
 - Culvert Standards and Detail Sheets
 - Select culvert standards based on headwall configuration and fill conditions. Develop details as needed for non-standard headwalls, special grading at upstream and downstream transitions and energy dissipation.
 - Roadside Ditch Design
 - Prepare interior drainage area maps that depict drainage area boundaries and flow direction arrows. Each area will be identified and cross-referenced to the calculation sheets.

- Calculate run-off to each hydraulic crossing or driveway culvert(s) and ditch hydraulic information in accordance with Williamson County Design Criteria Manual and shown on the run-off and ditch computation sheets.
 - Prepare a tabular ditch layout schedule that depicts pertinent information about the roadside ditch geometry and design. This table will include station, offset, flow line elevation, velocity, ditch lining material, as well as ditch bottom width. The tables will be shown on the hydraulic data sheets.
 - Provide drainage design details for “non-standard” drainage structures in instances where they are not covered by County or TxDOT standard details. Use County or TxDOT standards details where practical.
 - Identify areas of the culvert construction that will require trench protection or special shoring.
- d. Signing and Pavement Markings Layouts:
- Prepare signing and pavement marking layouts.
 - Prepare pavement marking details for non-standard conditions.
 - Prepare detail sheets for small signs for non-standard signs.
- e. Stormwater Pollution Prevention Plan (SW3P):
- Develop SW3P narrative in conformance with the TCP to minimize potential impacts to receiving waterways and prepare the TxDOT SW3P information sheet.
 - Prepare Temporary Erosion Control Layouts to minimize potential impact to receiving waterways
 - Include County and TxDOT standard details in the PS&E package as appropriate.
- f. Engineer’s Cost Estimate:
- Develop engineers estimate construction cost estimate based on tabulated summary of quantities and current average low bid unit prices for each design submittal (60%, 90%, 100% & Final PS&E).
- g. Project Manual:
- Develop the project bid manual including latest edition of Williamson County bid information, bid form, contract requirements, plans and specifications for the 100% and Final design submittals.
- h. Work Product Submittal Preparation (60%, 90%, 100% & Final):
- Prepare each work product submittal including updating the index of sheets and subsequent sheet numbering, combining plan sheets for each construction plan submittal, updating specification lists, development and update of special specifications or required County or TxDOT forms, and submittal of the entire work product package to the County.
 - All contract documents, including a pdf copy of each deliverable, native electronic files, models and calculations will be uploaded to the County’s project management database at each milestone and at the completion of the project. One hard copy of each deliverable will be provided unless additional copies are required per the submittal checklist.

i. **Deliverables:**

- 60%, 90%, 100% & Final PS&E Submittals including applicable Williamson County Submittal Checklists.
- Drainage Models

9. **BIDDING PHASE SERVICES**

a. Bidding Phase Services:

- Prepare all applicable construction documents for bidding. Attend the pre-bid meeting. Respond to bidder's questions during the bid period. Prepare project addenda up to two (2) during bid period. Analyze contractor bids, prepare bid tabulation, and make recommendation for award to the apparent low bidder via a letter. Attend the pre-construction conference.

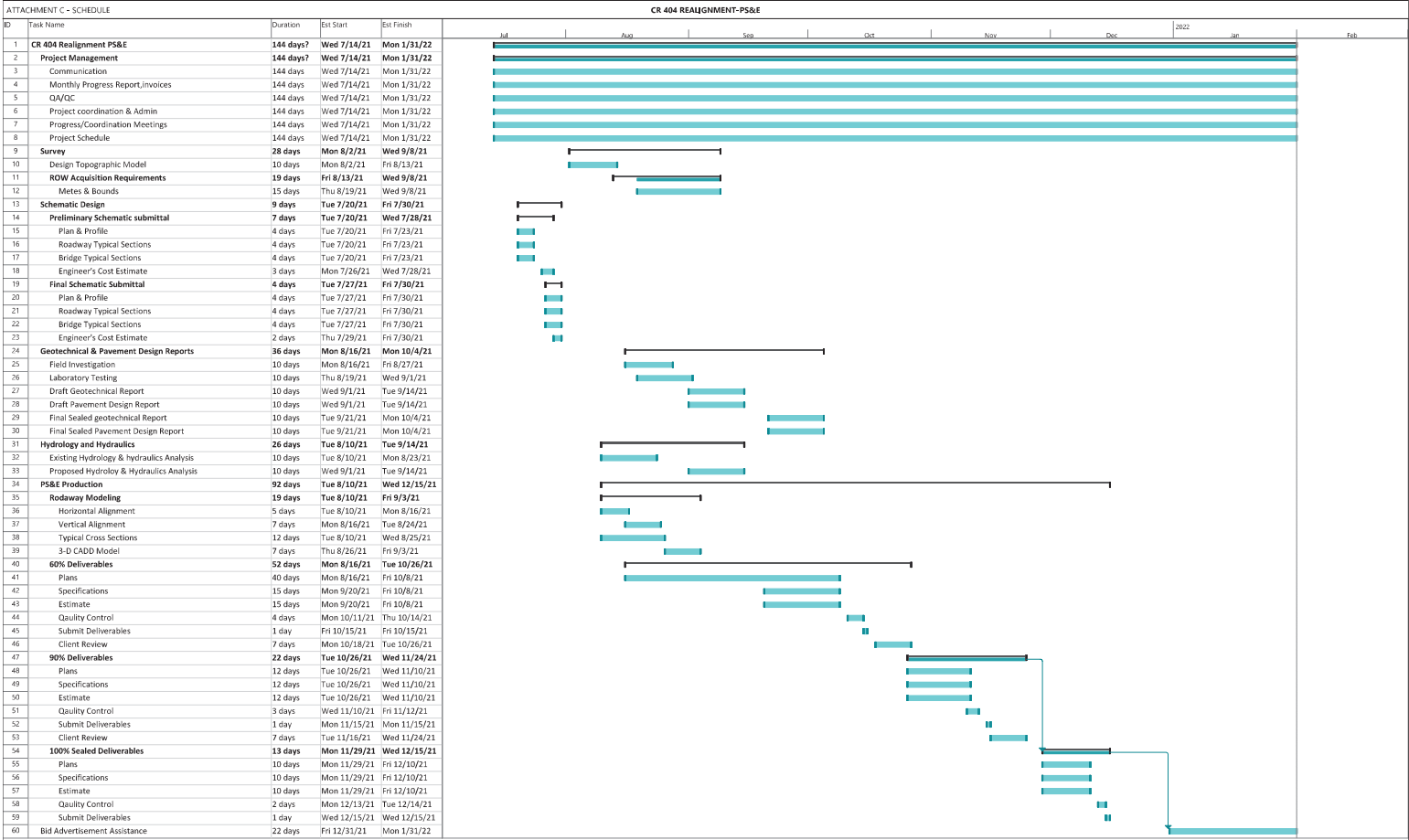
b. **Deliverables:**

- Letter of Recommendation for Award, with Bid Tabulation.

10. **EXCLUSIONS:**

a. The following items are not included in this work authorization:

- TRAFFIC DATA COLLECTION OR TRAFFIC ANALYSIS.
- ROW ACQUISITION
- PUBLIC INVOLVEMENT (ALREADY COVERED IN CR404 CORRIDOR STUDY WA#1)
- DETENTION & WATER QUALITY PLANS
- DRAFT & FINAL RHCP APPLICATION
- DRAFT & FINAL THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT REPORT
- DRAFT & FINAL TXDOT SPECIES ANALYSIS FORM AND SPREADSHEET
- FEMA COORDINATION CLOMR OR LOMR.
- NATIONWIDE PERMIT (NWP) 14 WITH A PRE-CONSTRUCTION NOTIFICATION (PCN).
- PAVEMENT DESIGN REPORT
- CONSTRUCTION PHASE SERVICES.
- UTILITY COORDINATION OR RELOCATION ESTIMATES.



ATTACHMENT D
FEE SCHEDULE
PROJECT NAME: CR 404 Realignment WA#2
PRIME PROVIDER NAME: RPS Infrastrucure, Inc.

Date: 7/29/2021

ALIGNMENT STUDY																	
TASK DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Administrator	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
1. Project Management																	
Progress Status Reports, Invoices, & Billings		6	14											6	26	NA	
QA/QC		4	12	24											40	NA	
Progress / Coordination Meetings																NA	
External Meetings (6)		10	36											6	52		
Weekly Internal Meeting (Virtual) (26)		13	13												26		
Project Schedule & Updates		4	24												28	NA	
HOURS SUB-TOTALS	0	37	89	24	0	0	0	0	0	0	0	0	0	12	172	0	
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$10,360.00	\$25,245.00	\$4,656.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,080.00	\$41,341.00		
TASK DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Administrator	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
2. Route And Design Studies																	
Data Collection				4	12							12			28	N/A	
Stakeholder Coordination (2 Meetings)		6	12												18	N/A	
HOURS SUB-TOTALS	0	6	12	4	12	0	0	0	0	0	0	12	0	0	46	0	
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$1,680.00	\$3,060.00	\$776.00	\$1,500.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,040.00	\$0.00	\$0.00	\$9,056.00		
TASK DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Administrator	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
3. Surveying																	
Design Survey (Subconsultant)		1	4	4											9	N/A	
ROW Mapping (Subconsultant)		1	4	4											9		
HOURS SUB-TOTALS	0	2	8	8	0	0	0	0	0	0	0	0	0	0	18		
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$560.00	\$2,040.00	\$1,552.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,152.00		
TASK DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Administrator	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
4. Schematic Development																	
Schematic																	
Preliminary Schematic																	
Plan		1	3	4	12							12	12		44		
Profile		1	4	6	12							16	12		51		
Typical Section																	
Roadway			1	2								6			9		
Bridge			2	1	4							4			11		
Final Schematic Plan and Profile																	
Plan		1	2	2								8	8		21		
Profile		1	2	4								8	8		23		
Typical Section																	
Roadway			1	1	1							1			4		
Bridge			1	1	1							1			4		
3D Corridor Model & Cross Section Roll Plot (100-foot)												48	16		74		
Engineering Cost Estimate																	
Preliminary		1	2	6								16			27		
Final		1	1	4								12			18		
HOURS SUB-TOTALS	0	6	23	35	30	0	0	0	0	0	0	134	58	0	286		
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$1,680.00	\$5,865.00	\$6,790.00	\$3,750.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22,780.00	\$5,800.00	\$0.00	\$46,665.00		

ATTACHMENT D
FEE SCHEDULE
PROJECT NAME: CR 404 Realignment WA#2
PRIME PROVIDER NAME: RPS Infrastructure, Inc.

Date: 7/29/2021

TASK DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Administrator	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
5, Drainage Study																	
Hydrologic Study and Modeling		1	2												3	N/A	
Collect, prepare, Modify Existing H&H models				2	4										6	N/A	
Existing Conditions				2	10										12	N/A	
Proposed Conditions				2	10										12	N/A	
Hydraulic Study and Modeling		2													2	N/A	
Model Proposed and Existing Structures			2	4	8										14	N/A	
Design ROW Drainage System				8	12										20	N/A	
Impact Mitigation Analysis		1	2												3	N/A	
Document Proposed Facility's adverse impacts				4	4										8	N/A	
Develop Mitigation Plan				4	8										10	N/A	
County Coordination		1	2												3	N/A	
Determine requirement determination				4	6										10	N/A	
100 Yr Flood Plain Impact				4	6										10	N/A	
Drainage Report																	
Preliminary		2	5	12	28									3	50	N/A	
Final		2	3	4	12									2	23	N/A	
HOURS SUB-TOTALS	0	9	16	50	106	0	0	0	0	0	0	0	0	5	186	N/A	
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL PROJECT MANAGEMENT	\$0.00	\$2,520.00	\$4,080.00	\$9,700.00	\$13,250.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$450.00	\$30,000.00		
6, Environmental Services																	
Data Collection Field Reconnaissance											2				2	N/A	
Constraints Map											4				4	N/A	
County Due Diligence						2			8						10	N/A	
Section 404 Compliance						4	16		40		4				64	N/A	
Historical Site Compliance						2									2	N/A	
Phase 1 ESA		2				1		4		32					39	N/A	
TX Antiquities Compliance						2									2	N/A	
TxDOT CE Clearance						4									4	N/A	
HOURS SUB-TOTALS	0	2	0	0	0	15	16	4	48	32	10	0	0	0	127		
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$560.00	\$0.00	\$0.00	\$0.00	\$4,320.00	\$4,320.00	\$820.00	\$7,440.00	\$4,640.00	\$1,100.00	\$0.00	\$0.00	\$0.00	\$23,200.00		
7, Geotechnical Services																	
Soils Borings (Subconsultant)		1	1												2	N/A	
Geotechnical Report (Subconsultant)			1	2											3	N/A	
Preliminary			1	2											4	N/A	
Final		1	1	2													
Pavement Design (subconsultant)				2													
Technical Memo			1	2											3	N/A	
HOURS SUB-TOTALS	0	2	4	6	0	0	0	0	0	0	0	0	0	0	12		
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$560.00	\$1,020.00	\$1,164.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,744.00		

ATTACHMENT D
FEE SCHEDULE
PROJECT NAME: CR 404 Realignment WA#2
PRIME PROVIDER NAME: RPS Infrastrucure, Inc.

Date: 7/29/2021

TASK DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Andministratior	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
II. Plan Preparation (PS&E) Services																	
Roadway/General																	
Title (1 Sh)			1	1	2							4	5		13	1	13
Index (1 Sh)			1	1	2							4	5		13	1	13
Project Layout (1 Sh)			1	1	2							4	4		12	1	12
Typical Sections (2 Shs)			2	2	4							10	16		34	2	17
General Notes (1 Sh)			2	4	4							8	4		22	1	22
Survey Data (1 Sh)			1	1	2							8	8		19	1	19
Horizontal Alignment Data (1 Sh)			1	2	2							4	12		21	1	21
Quantity Summary (2 Shs)			2	4	8							8	12		34	2	17
Roadway P&P (10 Shs)			10	20	16							53	84		183	10	18
Side Street Intersections (3 Shs)			4	8	10							24	16		62	3	21
Driveways (2 Shs)			1	3	8							16	12		38	2	19
Miscellaneous (2 Shs)			2	6	8							16	12		44	2	22
Standards (14 Shs)					4							16	24		44	14	3
3d Corridor Model & Cross Sections (25 Shs)			4	8								60	25		97	25	4
Traffic Control Plans																	
Typical Sections (2 Shs)			2	6	8								16		32	2	16
Narrative (1 Sh)			1	6								8	6		21	1	21
DetailedTCP (4 Shs)			2	4	10							40	32		88	4	22
Standards (16 Shs)				3	16										19	16	1
Special Details (2 Shs)			1	2	8							12			23	20	1
Const. Schedule (1 Sh)				9											11	1	11
Drainage																	
Drainage Maps (2 Shs)			2	4								12	4		22	2	11
Culvert Layouts (5 Shs)			4	10	12								16		42	5	8
Hydraulic Data (5 Shs)			2	8	12							24	36		62	5	16
Roadside Ditches (4 Shs)			4	8	12							24	36		84	4	21
Standards (20 Shs)				6								8	16		30	20	2
Signing and Pavement Markings																	
Plan (10 Shs)			4	16	24							56	80		180	10	18
Special Sign Details (1 Sh)			2	5	6								9		22	1	22
Standards(20 Shs)				5								8	16		29	20	1
Storm Water Pollution Plans																	
SW3P Narrative/Information Sheet (1 Sh)			3	6	5							2	7		23	1	23
EC Layout (10 Shs)			4	6	12							40	80		142	10	14
Standards (8 Shs)				2								2	4		8	6	1
Engineers Cost Estimate															52	NA	
Project Manual				12								32			44	NA	
60% Submittal Preparation		2	8	8								8	8	3	37	NA	
90% Submittal Preparation		2	4	6								8	8	2	30	NA	
100% Submittal Preparation		2	4	6								6	8	2	28	NA	
Final Sealed Submittal Preparation		2	4	10								6	8	2	32	NA	
HOURS SUB-TOTALS	0	8	84	217	195	0	0	0	0	0	0	563	641	9	1717	194	9
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$2,240.00	\$21,420.00	\$42,098.00	\$24,375.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$95,710.00	\$64,100.00	\$810.00	\$250,753.00		
DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Andministratior	TOTAL COSTS TASK	NO OF DWGS	LABOR HRS PER SHEET
9. Bid Advertisement Services																	
Attend Pre-Bid Meeting		2	4											1	7	NA	
Response to Bidders' Questions		1	4	8											13	NA	
Prepare Project Addenda (2 Assumed)			3	12								16	16		47	NA	
Analyze Bid Packages		1	2	4	8										15	NA	
Letter of recommendation to award with Bid Tabulation			2	4										2	8	NA	
HOURS SUB-TOTALS	0	4	16	28	8	0	0	0	0	0	0	16	16	3	90	NA	
LABOR RATE PER HOUR	\$300.00	\$280.00	\$255.00	\$194.00	\$125.00	\$288.00	\$270.00	\$205.00	\$155.00	\$145.00	\$110.00	\$170.00	\$100.00	\$90.00			
SUBTOTAL	\$0.00	\$1,120.00	\$3,825.00	\$5,432.00	\$1,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,720.00	\$1,600.00	\$270.00	\$15,967.00		

ATTACHMENT D
FEE SCHEDULE
PROJECT NAME: CR 404 Realignment WA#2
PRIME PROVIDER NAME: RPS Infrastrucure, Inc.

Date: 7/29/2021

DESCRIPTION	Principal	Team Leader	Senior Project Manager	Senior Project Engineer	Associate Engineer	ENV Dept Manger	SR ENV Planner	Principal Consultant	ENV Scientist	Consultant III	ENV Planner I	Senior Designer	Designer/CADD Technician	Proj. Administrator	TOTAL COSTS TASK	NO OF DWGS
SUMMARY																
1. Project Management	0	37	99	24	0	0	0	0	0	0	0	0	0	12	\$41,341.00	N/A
2. Route And Design Studies	0	6	12	4	12	0	9	0	0	0	0	12	0	0	\$9,055.00	N/A
3. Surveying	0	2	8	8	0	0	0	0	0	0	0	0	0	0	\$4,152.00	N/A
4. Schematic Development	0	6	23	35	30	0	0	0	0	0	0	134	58	0	\$46,665.00	N/A
5. Drainage Study	0	9	16	50	106	0	0	0	0	0	0	0	0	5	\$30,000.00	N/A
6. Environmental Services	0	2	0	0	0	15	16	4	48	32	10	0	0	0	\$23,200.00	N/A
7. Geotechnical Services	0	2	4	6	0	0	0	0	0	0	0	0	0	0	\$2,744.00	N/A
8. Plan Preparation (PS&E) Services	0	8	84	217	195	0	0	0	0	0	0	563	641	9	\$250,753.00	194
9. Bid Advertisement Services	0	4	15	28	8	0	0	0	0	0	0	16	16	3	\$15,907.00	N/A
SUBTOTAL LABOR EXPENSES	0	76	261	372	351	15	16	4	48	32	10	725	715	29	\$423,878.00	
DIRECT EXPENSES																
Environmental Service direct expensed															\$880.00	
MILEAGE (@ \$0.57 per mile)	1,200														\$684.00	
IN HOUSE B/W PHOTO COPY (8.5"x11" @ \$0.12 per sheet)	240														\$28.80	
IN HOUSE COLOR PHOTO COPY (8.5"x11" @ \$0.75 per sheet)	240														\$180.00	
IN HOUSE COLOR PHOTO COPY (11"x17" @ \$1.50 per sheet)	650														\$975.00	
IN HOUSE PLOTS (COLOR on BOND @ \$1.75/SQFT)	0														\$0.00	
Hazardous Materials Database Search (\$600.75)	1														\$600.75	
SUBTOTAL DIRECT EXPENSES															\$3,348.55	
RPS TOTAL															\$427,226.55	
SUB CONSULTANTS:																
Survey And Mapping (SAM)															\$45,335.20	
Ruba Richter															\$22,598.58	
ArataTerra															\$9,758.04	
TOTAL - SUB CONSULTANTS:															\$77,691.82	
GRAND TOTAL															\$504,918.37	

TASK DESCRIPTION	RPLS PROJECT MANAGER	RPLS TASK LEADER	PRINCIPAL	SENIOR SURVEY TECHNICIAN	SURVEY TECHNICIAN	2-PERSON SURVEY CREW	3-PERSON SURVEY CREW	FIELD COORDINATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS
Establish Control (Up to 4 points)		1		8	12	16		0.5		\$4,740.
Records Research and Deed Study		2		4	4					\$1,148.00
Field Surveys	1	3		4	4	24		1		\$5,311.00
Boundary Analysis		4		6	4					\$1,684.00
Prepare Preliminary ROW Documents (Up to 3 parcels)	1	3		10	30					\$4,688.00
Prepare Final ROW Documents (Up to 3 parcels, includes review of title commitment)	1	2		4	8					\$1,715.00
Establish ROW Monumentation (Up to 15 iron rods)		1		1	2	15				\$2,789.00
Design Survey (FM 3349 to CR 404, 230' WIDE)	1	4		16	12	40		1		\$10,053.00
ROW Staking (Up to 3 properties)		1		4	8	30		0.5		\$6,087.00
										\$0.00
QA/QC Prepare Final Deliverables	1	4		12	8					\$2,911.00
										\$0.00
										\$0.00
SUB-TOTALS	5	25	0	69	92	125	0	3	0	\$41,136.00
HOURS SUB-TOTALS	5	25	0	69	92	125	0	3	0	319
CONTRACT RATE PER HOUR	\$175.00	\$158.00	\$215.00	\$110.00	\$98.00	\$155.00	\$195.00	\$110.00	\$70.00	
TOTAL LABOR COSTS	\$875.00	\$3,950.00	\$0.00	\$7,590.00	\$9,016.00	\$19,375.00	\$0.00	\$330.00	\$0.00	\$41,136.00

OTHER DIRECT EXPENSES	# OF UNITS	COST/UNIT
Mileage (number x current state rate)	1320	\$0.560 per mile
GPS Receiver	110	\$25.00 per hour
Terrestrial Laser Scanner	10	\$35.00 per hour
Primary Control Monuments	4	\$90.00 each
SUBTOTAL DIRECT EXPENSES		

SUMMARY		
	LABOR COSTS	\$41,136.00
	NON-SALARY (OTHER DIRECT EXPENSES)	\$4,199.20
	TOTAL SAM SURVEY	\$45,335.20

**WILLIAMSON COUNTY ROADWAY IMPROVEMENTS
CARPENTER DRIVE BETWEEN FM 3349 AND COUNTY ROAD 404
WILLIAMSON COUNTY, TEXAS**

TASK	SHEETS/ UNITS	SENIOR GEO ENGINEER PROJECT MANAGER								Sub Total Hours	Hr/Unit	RKCI Labor Cost
		PRINCIPAL \$ 220.00	ENGINEER \$185.00	MANAGER \$185.00	ENGINEER \$165.00	EIT \$135.00	GEOLOGIST \$120.00	ENGR. TECH. \$70.00	ADMIN \$60.00			
ENGINEERING - LABOR												
GEOTECHNICAL INVESTIGATION AND PAVEMENT DESIGN RECOMMENDATIONS												\$ -
PROJECT KICK OFF			0.5							0.5		\$ 92.50
BORING LAYOUT & DRILLING INSTRUCTION						1		1		2.0		\$ 255.00
STAKE BORINGS								3		3.0		\$ 360.00
UTILITIES CLEARANCE								2		2.0		\$ 240.00
FIELD LOGGING									12	12.0		\$ 840.00
ENGINEERING SITE VISIT AND OBSERVATIONS					4	6				10.0		\$ 1,470.00
BULK SAMPLE COLLECTION									3	3.0		\$ 210.00
LABORATORY ASSIGNMENT						1				1.0		\$ 135.00
SOIL BORING LOGS (Including Wincore logs for All borings)					1	3				4.0		\$ 570.00
SITE PLAN						1				1.0		\$ 135.00
PAVEMENT DESIGN ANALYSIS					2	3				5.0		\$ 735.00
DRAFT GEOTECHNICAL REPORT PREPARATION					2	10				13.0		\$ 1,740.00
GEOTECHNICAL REPORT REVIEW & FINALIZATION					0.5	1			1	2.5		\$ 277.50
PRELIMINARY PAVEMENT REPORT					1	3			1	5		\$ 630.00
FINAL PAVEMENT REPORT					0.5	1			1	3		\$ 277.50
TOTALS HOURS:			0.5		11	30	6	15	4	Row Total = 66.5 66.5		
LABOR COST:		\$ -	\$ 93	\$ -	\$ 1,815	\$ 4,050	\$ 720	\$ 1,050	\$ 240			\$ 7,967.50
			0.8%		16.5%	45.1%	9.0%	22.6%	6.0%			\$ 7,967.50

UNIT EXPENSES:							
	FIELD OPERATIONS						
	Mobilization of Drill Rig	1 units				\$495.00 each	\$495.00
5 pavement borings to 15 ft	3" Thin-Wall Continuous Sampling or Intermittent Sampling in Granular Soils	75 ft				\$19.50 ft	\$1,462.50
	NX Core Drilling	ft				\$35.00 ft	
	Additional Standard Penetration (SPT)	15 each				\$20.00 each	\$300.00
	In-Place Pavement Core (6-in. diameter)	units				\$100.00 each	
	Bentonite Backfill	5 bags				\$3.50 bag	\$17.50
	Driller Standby	4 hrs				\$195.00 each	\$780.00
	Driller Cleanup	5 hrs				\$195.00 hr	\$975.00
	LABORATORY TESTING						
	Atterberg Limits	6 units				\$105.00 each	\$630.00
	Moisture Content	30 units				\$15.00 each	\$450.00
	Sieve Analysis (passing No. 4, 40, 200)	4 units				\$85.00 each	\$340.00
	Unconfined Compression (Soil)	units				\$30.08 each	
	Unconfined Compression (Rock)	units				\$41.22 each	
	pH	units				\$41.22 each	
	Sulfate Testing	4 units				\$100.27 each	\$401.08
	Swell Test (ASTM D 4546 Method B)	3 units				\$200.00 each	\$600.00
	Moisture-Density Relationship (Proctor)	3 units				\$295.00 each	\$885.00
	CBR	1 units				\$185.00 each	\$185.00
	Resilient Modulus	2 units				\$1,800.00 each	\$3,600.00
	Triaxial Compression of Disturbed Soils (Tex-117-E)	1 units				\$1,350.00 each	\$1,350.00
	Wet Ball Mill	1 units				\$250.00 each	\$250.00
	Lime Series (Tex-121-E Part III)	1 units				\$410.00 each	\$410.00
TOTAL UNIT EXPENSES:							\$ 13,131

OTHER DIRECT EXPENSES:		Traffic Control Services	1 days				\$1,500.00 day	\$1,500.00
TOTAL OTHER DIRECT EXPENSES:								\$ 1,500
TOTAL PROJECT COST:								\$ 22,598.58

**Cultural Resource Investigations
Intersection at CR404 and FM3349;
CR404 Road Improvements from FM3349 to CR404,
Williamson County, Texas**

COST BREAKDOWN						
CR404 Road Improvements						
LABOR	CR404 Intersection at FM3349 PCR and Background Studies	CR404 Road Improvements from FM3349 to CR404 Background Studies and Coordination Ltrs	Total	Unit	Unit Price	Cost
Principal	1	1	2	hr	\$ 226.50	\$ 453.00
Project Manager	2	2	4	hr	\$125.34	\$ 501.36
Archeologist V/ Principal Investigator	6	6	12	hr	\$ 113.15	\$ 1,357.80
Archeologist V	8	8	16	hr	\$ 88.04	\$ 1,408.64
Architectural Historian IV	1	1	2	hr	\$ 128.69	\$ 257.38
Architectural Historian III	14	12	26	hr	\$ 107.05	\$ 2,783.30
Historian II	2	0	2	hr	\$ 80.32	\$ 160.64
GIS Specialist	12	12	24	hr	\$ 89.52	\$ 2,148.48
Administrative/ Document Production Supervisor	2	2	4	hr	\$ 79.06	\$ 316.24
Editor	2	2	4	hr	\$ 70.80	\$ 283.20
TOTAL LABOR						\$ 9,670.04
EXPENSES	CR404 Intersection at FM3349 PCR and Background Studies	CR404 Road Improvements from FM3349 to CR404 Background Studies and Coordination Ltrs	Total	Unit	Unit Price	Cost
Copies, b/w 8.5 x 11	40	40	80	each	\$ 0.10	\$ 8.00
Copies, color 8.5 x 11	40	40	80	each	\$ 1.00	\$ 80.00
TOTAL EXPENSES						\$ 88.00
TOTAL						\$ 9,758.04