WORK AUTHORIZATION NO. 2

WILLIAMSON COUNTY LONG RANGE TRANSPORTATION CORRIDOR PROJECT:
Corridor C SH 29 Bypass

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated **March 13, 2017** and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and **Atkins North America, Inc.** (the "Engineer").

Part1. 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 **$2,148,753.10.**

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 **December 31, 2020**. 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.

EXECUTED this ____ day of _____, 20___.

ENGINEER:	COUNTY:
Atkins North America, Inc.	Williamson County, Texas
By: _____ Signature	By: _____ Signature
James Lowe Printed Name	Bill Gravell Jr. Printed Name
Division Manager Title	County Judge Title

LIST OF ATTACHMENTS

ok
2/20/19

Attachment A - Services to be Provided by County

Attachment B - Services to be Provided by Engineer

Attachment C - Work Schedule

Attachment D - Fee Schedule

Attachment A - Services to be Provided by County

ATTACHMENT A
SERVICES TO BE PROVIDED BY THE COUNTY
DESIGN SERVICES FOR CORRIDOR C/SH 29 BYPASS PHASE 1

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, 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 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.

6. Submittal of documentation to regulatory agencies for review and comment, when specified.

7. Support project development efforts with stakeholders, coordinate meetings and interface with stakeholders, as needed.

8. Post and maintain project information for public consumption on the County website.

9. Assist with Coordination between the Engineer and the County's other subconsultants.

10. Negotiate with all utility companies for any agreements and/or relocations required.

11. Provide an agent as necessary to secure proposed ROW.

12. Review Engineer progress, submittals, and plan changes.

13. Provide aluminum caps for iron rods, if applicable.

14. Provide brass caps for flush mount ROW markers, if applicable.

15. Provide Commitments for Title Insurance for all parcels to be acquired.

16. Utility coordination, conflict identification, relocation design and cost estimates in a timely manner necessary for the Engineer to maintain the project work schedule.

17. Provide traffic data and projections needed for the project including, but not limited to, traffic data required for pavement designs.

18. Coordinate with the City of Georgetown to obtain and provide schematics and Microstation files for the ultimate facility being tied into at the west end of the project and any transportation planning related study documents.

19. Coordinate with TxDOT to obtain and provide drawings, Microstation files, feasibility study report and information on selected route options for the ultimate facility being tied into at the east end of the project.

Attachment B - Services to be Provided by Engineer

ATTACHMENT B
SERVICES TO BE PROVIDED BY THE ENGINEER
DESIGN SERVICES FOR CORRIDOR C/SH29 BYPASS PHASE 1

PROJECT DESCRIPTION

Existing Facility

This is a new location project, so there is no existing facility. The proposed project will begin where existing Sam Houston Avenue terminates approximately 0.6 miles west of SH 130 and will end at SH 29 approximately 0.5 miles west the San Gabriel River. The proposed project will cross existing SH 130 and CR 106.

Proposed Facility

This is the first phase of the future SH 29 Bypass between Sam Houston Avenue on the west, and SH 29 on the east. The proposed project is an approximate 3.1 mile new-location facility beginning where Sam Houston Avenue currently terminates at Patriot Way, crosses SH 130 approximately 0.5 miles south of Patriot Way, intersects with CR 106, and terminates in a new intersection with SH 29 approximately 0.5 miles west of the San Gabriel River. The typical section includes two 12' lanes with an 8' paved shoulder and a ribbon curb on one side and a 4' paved shoulder and curb and gutter on the other. Bridges are proposed over Mankins Branch just east of Patriot Way, over SH 130, and over Mankins Branch south of SH 29. A shared-use path (SUP) or sidewalk will not be constructed as part of the project, but accommodations will be made for a future 10' SUP along the portion of the project that will be frontage road for the ultimate SH 29 Bypass and a 6' sidewalk along the new CR 106 arterial alignment. These accommodations include grading the shoulders for the future SUP, designing retaining walls and culverts to accommodate the SUP, and designing the bridges at the two creeks to accommodate the future SUP/sidewalk. The bridge over SH 130 will not include any SUP accommodations since it is a future mainlane bridge. A WB to SB left turn lane will be added to SH 29 that will require widening of approximately 0.4 miles of SH 29. The ROW for the ultimate corridor as shown on the final approved schematic will be acquired as part of this project.

Design Criteria

The proposed design criteria for the project will be developed from Williamson County, City of Georgetown and TxDOT design criteria. It is anticipated that in most cases the most stringent of the design criteria will be used. The design criteria manuals to be used will be those in place at the time this work authorization is executed.

1. PROJECT MANAGEMENT

a. Engineer 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:

- Update the project QA/QC plan to include the new work products.

- For each deliverable, 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.

d. PROJECT COORDINATION & ADMINISTRATION:

- Prepare and maintain routine project record keeping including records of meetings.

- 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, 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 meetings with the County and its representatives and stakeholders, as necessary to communicate development of the project and design issues.
- Prepare agendas 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.

g. DELIVERABLES:

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

2. RIGHT OF WAY (ROW) MAPPING

a. ROW MAP:

- Research and compile deed/plat records and build a working map from recorded data.
- Calculate approximate search data to recover right of way monumentation and make initial pass to recover right of way monumentation.
- Update preliminary right of way map and list of impacted tracts.

b. PARCEL ACQUISITION DOCUMENTS (25 parcel documents assumed, 25 staking assumed):

- Upon approval of final schematic, prepare a right of way strip map.

- Prepare draft parcel sketches and field notes documents for right of way parcel and easement acquisition.

- Set appropriate monumentation in accordance with County requirements. Prepare signed and sealed documents for right of way parcel and easement acquisition.

- Stake proposed right of way with suitable markers as requested on a parcel by parcel basis for the purposes of fence construction, utility installation, or property owner requests.

c. 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)
- Draft Parcel Acquisition Documents (pdf)
- Final Parcel Acquisition Documents (one original and pdf)

3. SURVEYING

a. FIELD SURVEYING:

- Survey the corridor area at approximately 100-foot sections 75-feet on either side of the proposed roadway centerline including identify existing landowners, deed recordation information, locate visible improvements and utilities including driveways, drainage structures (size, material, flowline elevations), edge of pavement/shoulder, physical centerline, guardrail, fences, signs, mailboxes, trees 12" inch diameter and greater, locate property boundaries sufficient to re-establish ROW.

- Provide a minimum of five cross sections at major culvert and bridge locations (4 total crossings), for 500-ft centered on the creek. The sections shall be located at the upstream and downstream right-of-way, 100-feet outside the upstream and downstream right of way. and 200-feet outside the upstream right of way. Elements to be captured include: waterway centerline, all grade breaks to define channel, banks and overbanks.

- Establish horizontal and vertical control and set temporary benchmarks.

b. DELIVERABLES:

- Mapping in 2-D and 3-D MicroStation Files
- DTM of Proposed Corridor

4. DRAINAGE STUDY

All drainage items in this authorization will be completed for Phase 1 Interim typical section only.

a. HYDROLOGIC/HYDRAULIC MODELING (4 major channel crossings (2 bridges and 2 bridge class culverts), 2 cross drainage structures assumed based on schematic drainage analysis crossing locations):

- Update hydrologic and hydraulic models developed with the Schematic Phase to model proposed drainage infrastructure required for the project. Detail the methodologies employed and design considerations. HEC-RAS shall be utilized for all stream modeling and HEC-RAS or HY-8 shall be utilized for all culverts.

b. FEMA COORDINATION:

- Coordinate with Local Floodplain Administrator (County and City of Georgetown) as necessary throughout the project. This is assumed to include: one coordination meeting for data gathering, one coordination meeting for 30% design concept review, one coordination meeting for transferring final PS&E and model to the local FPAs.

- Prepare and submit Conditional Letter of Map Revision (CLOMR). It is assumed that 1 (one) CLOMR will be submitted to FEMA that will include both Zone A crossings. KFA anticipates addressing up to 3 (three) rounds of comments from FEMA prior to CLOMR approval. Conditional limits of floodplain revisions will only incorporate changes due to proposed roadway project and not extend outside of project limits to include updates to floodplains due to other changes such as Atlas 14 rainfall data or new development.

c. 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, detention basin layouts, design of control structures and routing of storm hydrographs through basins.

d. DELIVERABLES:

- CLOMR
- Electronic copy of all models
- Other analysis to be incorporated into PS&E

5. GEOTECHNICAL SERVICES

a. GEOTECHNICAL INVESTIGATION (11 roadway borings assumed, spaced approximately 1000 feet to a 15-foot depth; 2 culvert borings to a 15-foot depth; 12 bridge borings to a 45-foot depth; 9 retaining wall borings to a 20-foot depth):

Table: Boring Details

Structure	Boring Type	No. of Borings	Boring Depth	Notes
Mankins Branch Creek Crossing (south)	Bridge	3	45	Bridge length ~620 ft.
	Retaining Wall	1	20	Wall at east approach
SH 130 Bridge	Bridge	7	45	Bridge length ~2100 ft.
	Retaining Wall	6	20	Walls on north side both approaches
Mankins Branch Creek Crossing (north)	Bridge	2	45	
	Retaining Wall	2	20	Walls on east side both approaches
Culverts	Culvert	2	15	Two culvert bridges
Roadway	Pavement	11	15	Spaced at 1000 ft. between other borings

- Provide a Geotechnical Investigation 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 and slope stability of the earthen embankments; and culvert bedding, analysis and recommendations for wingwalls, headwalls, and retaining walls, general earthwork recommendations, swell potential evaluations, pavement thickness design alternatives with subgrade stabilization, PVR calculations.
- The Engineer shall be responsible for Soil Core Hole Drilling required for bridges, retaining walls, embankment, culvert, and pavement borings. The Engineer shall follow the procedures in the TxDOT Geotechnical Manual for the bridge over SH 130 and the Wilco Geotechnical Manual for all other locations and will contact the appropriate utility location services to have underground utilities located prior to drilling in an area. Bridge borings shall be spaced at 300 ft. intervals and retaining wall borings shall be spaced at 200 ft. intervals.
- The soil borings will be properly backfilled with bentonite chips and a single lift of cold patch asphalt where applicable. The soil samples will be obtained using Shelby tubes and/or split-spoon samplers. Field-testing of soil samples will include pocket penetrometer in the cohesive soils and Standard Penetration Test (SPT) in the cohesionless soils. Texas Cone Penetrations will be performed in the culvert borings at five-foot intervals. Borings other than bridge bores will be terminated early if bedrock is encountered.
- Dynamic Cone Penetration (DCP) testing will be performed at each boring location.
- 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, consolidated-undrained triaxial, consolidation, Texas Triaxial, swell, sulfate testing, particle size analysis tests, visual classification, dry density, California Bearing Ratio (CBR) tests, sulfate content tests, and pH-lime series analyses.
- Provide geotechnical analysis needed for pavement design, foundation design, and slope stability, as required. For retaining walls, Engineer will provide calculations including global stability, sliding, bearing capacity, and

overturning and recommendations for minimum footing depth. Where retaining walls will be inundated due to water, a drawdown analysis is required. In addition, retaining wall backfill type shall be specified.

- The pavement design will include consideration of traffic loads to be estimated by the Engineer. The traffic data required includes current and projected traffic counts and truck percentages. The Engineer will prepare three (3) flexible pavement design alternatives and one (1) rigid pavement design alternative. Flexible pavement design alternatives shall include: subgrade stabilization (utilizing lime or cement) and flexible base layer; full depth asphalt section; temporary full depth asphalt pavement section. Rigid design alternative shall include flexible base, HMAC Bond Breaker, and continuous reinforced concrete pavement. Geogrid reinforcement will also be considered an additional enhancement to the basic pavement design cross section if PVR is an issue. Pavement thickness options using TxDOT FPS-21 and TxCRCP-ME.
- Provide geotechnical analysis and support needed for hydraulic design tasks including sieve analysis to determine D50 and D90 grain size, erosion pond berm embankment and compaction recommendations.

b. SCOUR ANALYSIS (4 crossings assumed):

- Perform sieve tests at culvert locations to estimate D50 and D90 values for scour analysis.
- Prepare a scour analysis for 2 bridge crossings based on the design, results of boring data, HEC-RAS hydraulic modeling of proposed bridge crossing per FHWA HEC 18, FHWA HEC 23, the TxDOT Hydraulic Design Manual, and the TxDOT Geotechnical Manual.
- Prepare a scour analysis for 2 culvert crossings based on the design, results of boring data, FHWA HEC 14, and the TxDOT Hydraulic Design Manual.

c. DELIVERABLES:

- Draft & Final Pavement Design Report
- Draft & Final Geotechnical Report
- Sieve Reports for Scour including D50 and D90 values
- Scour Analysis

6. PLAN PREPARATION

a. Plans shall be prepared per Wilco criteria including applicable submittal requirements including: cost estimate, checklists, hardcopies, CAD files, comment responses, design waivers/exceptions, general notes, quantities, updated design schedule, construction time determination.

b. ROADWAY:

- Refine horizontal and vertical alignment of the roadway and cross streets, existing and proposed typical sections, interim cross sections created at 50-foot increments and at cross drainage structures.

- Prepare project layout sheets that identify the project area and limits of work.

- Prepare Survey Data Sheets that clearly indicate benchmark locations and associated control information.

c. DRAINAGE:

- All drainage items in this authorization will be completed for Phase 1 Interim typical section only.

- Prepare hydrologic and hydraulic calculations for the design of drainage structures on the project and inclusion in the plans.

- Develop onsite and offsite drainage area maps delineating drainage area boundaries based on LIDAR, USGS topographic maps, local contour maps, and/or field survey data.

- Design and detail storm sewer system, drainage outfalls, cross drainage structures, culverts, channels, and roadside ditches including miscellaneous details for drainage.

- Design and detail temporary and permanent erosion and sedimentation controls. These are assumed to be one combined set of sheets. This will also include the Williamson County SWPPP general notes sheet.

d. SIGNING, MARKINGS, TRAFFIC SIGNALS & ILLUMINATION

- Prepare signing and marking layout per Texas Manual of Uniform Traffic Control Devices (TMUTCD). Detail all non-standard signs or marking details as required for the project.

- Prepare underpass illumination layout at SH 130 per TxDOT's Highway Illumination Manual and the American Association of State Highway and Transportation Officials (AASHTO).

- Prepare traffic signal design concept at the intersection of Corridor C and SH 29. The concept will include the location of mast arm poles, pedestrian poles, traffic signal controller cabinets, and electrical service pole(s).

e. TRAFFIC CONTROL:

- Prepare traffic control plan sequence of construction narrative and phase layout sheets as needed to direct traffic around construction activities per Texas Manual of Uniform Traffic Control Devices (TMUTCD). Phase layout sheets are only included for:

    1. Bridge construction over SH 130

    2. Widening of SH 29 for the new turn lane

    3. CR 106 Intersection/Crossing

f. BRIDGE

- Design and detail the following bridges (all assumed to use prestressed concrete TX54 girders and rectangular multicolumn concrete bent caps, layouts at 1" = 40' scale) with assumptions on bridges listed below:

    1. Mankins Branch Bridge West (SH29 Bypass over Mankins Branch east of Patriot Way) – approximately 48ft wide and 600ft long with a 12ft wide SUP.

    2. SH29 Bypass over SH130 – approximately 48ft wide and 2,100ft long.

    3. Mankins Branch Bridge East (SH29 Bypass over Mankins Branch south of SH29) – approximately 48ft wide and 265ft long with a 6ft sidewalk.

Follow the County's Design Criteria Manual, TxDOT's Bridge Project Development Manual, Bridge Design Manual - Load and Resistance Factor Design (LRFD), and Bridge Detailing Guide. Custom bridge details are anticipated to accommodate bridge widths beyond those covered by TxDOT standards and to incorporate aesthetic details at SH130 to match the existing corridor. Creek crossings will follow TxDOT standard construction to the extent possible (i.e. no aesthetic details). Creek crossings will have 3:1 header and side slopes. Bridge over SH130 will have retaining walls at abutments and on north side of approaches.

Aesthetic details for the SH130 bridge and retaining walls that match the existing SH130 scheme will be prepared.

Before detailed design progresses, develop and evaluate two to three alternative options for superstructure type and span arrangement at each creek crossing to determine the optimum bridge beams for the hydraulic and geometric requirements. Deliverables shall include schematic exhibits depicting plan and elevation views, advantages/disadvantages, and associated bridge construction costs for each option.

Prepare for and attend one (1) meeting with the County to present and review the results of the alternatives analysis, bridge/roadway alternatives analysis and hydraulic analysis.

g. MISCELLANEOUS

- Prepare cover sheet, index, and general notes sheets
- Provide retaining wall layouts including plan, profile, typical sections, geometry data and detail sheets for retaining walls (assumed to be MSE and layouts at 1" =40' scale). Assumptions on retaining walls are listed below:

    1. Approximately 800ft at north side of western approach to the SH130 bridge
    2. Approximately 70ft at west abutment of SH130 bridge
    3. Approximately 870ft at north side of eastern approach to the SH130 bridge
    4. Approximately 70ft at east abutment of the SH130 bridge

5. Approximately 300ft at east side of north approach to the Mankins Branch bridge East

6. Approximately 370ft at east side of south approach to the Mankins Branch Bridge East

7. Approximately 200ft at north side of east approach to the Mankins Branch bridge West

- Prepare intersection grading layouts for Sam Houston Ave, CR 106, and SH 29
- TxDOT coordination and addressing review comments for proposed work in SH 29 and SH 130 ROW
- Prepare opinion of probable construction costs and estimated construction time determination
- Prepare parts for project construction manual including General Notes, Specification List, Bid Form, Special Specifications/Provisions, and Engineer's Estimate.
- Prepare design summary form
- Compile standard drawings and standard details

h. DELIVERABLES:

- 30% PS&E Submittal
- 60% PS&E Submittal
- 90% PS&E Submittal
- 100% PS&E Submittal
- Final PS&E Submittal

7. <u>BIDDING PHASE SERVICES</u>

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 during bid period. Analyze contractor bids, prepare bid tabulation, and make recommendation for award to the apparent low bidder. Attend the pre-construction conference.

8. DELIVERABLES

   a. DOCUMENTS:

      - All contract documents, including hard copies and electronic files, shall be turned over to the County at each milestone and at the completion of the project. Documents shall be posted to the County's project management database as requested.

9. EXCLUSIONS

   a. UTILITY COORDINATION:

      - No utility coordination, conflict identification, relocation design or cost estimates related to utility relocation are included. Williamson County's utility coordinator will be responsible for these tasks.

   b. ROW ACQUISITION

      - Property appraisals, negotiations and acquisition services are not included

   c. ENVIRONMENTAL

      - No environmental services or public involvement are included with this work authorization

   d. SIGNING, MARKINGS, TRAFFIC SIGNALS & ILLUMINATION

      - No speed study is included with this work authorization.

      - No traffic signal warrants will be performed with this work authorization.

      - No traffic signal power drop coordination for signal design will be included with this work authorization.

   e. HYDROLOGIC/HYDRAULIC

      - Drainage Report or memos are not included with this work authorization.

- A LOMR is not included in this scope of services. A LOMR is recommended to be added into the construction phase contract.

f. WATER QUALITY

- No permanent water quality design is included with this work authorization.

g. BRIDGE

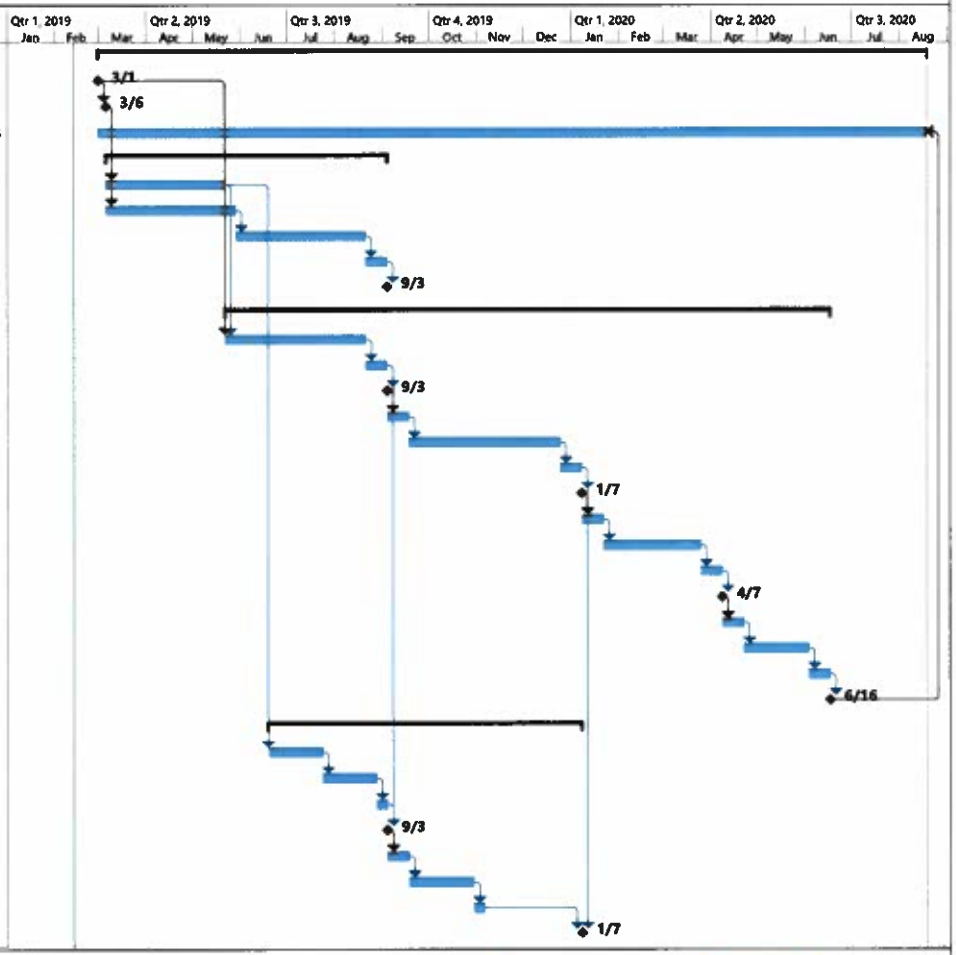
- Design of structures not specifically noted above is excluded.

Attachment C - Work Schedule

Prepared For:
Williamson County, Texas

Corridor C/SH 29 Bypass
Work Authorization No. 2
Attachment C - Work Schedule

ID	Task Name	Duration	Start	Finish	Successors	Predecessors
1	**Project Management**	**383 days**	**3/1/19**	**8/18/20**		
2	Notice to Proceed (NTP)	0 days	3/1/19	3/1/19	3,12	
3	Internal Kickoff	0 days	3/6/19	3/6/19	6,7	2
4	Project Management	383 days	3/1/19	8/18/20		26FF+40 days
5	**Survey & ROW Mapping**	**130 days**	**3/6/19**	**9/3/19**		
6	Collect and Process Topo	55 days	3/6/19	5/21/19	12,28FS+20 days	3
7	Collect and Process Property Delineation	60 days	3/6/19	5/28/19	8	3
8	Prepare 25 Land Title Survey	60 days	5/29/19	8/20/19	9	7
9	QC 25 Land Title Survey	10 days	8/21/19	9/3/19	10	8
10	Submit Land Title Survey	0 days	9/3/19	9/3/19		9
11	**PS&E Development**	**280 days**	**5/22/19**	**6/16/20**		
12	Develop 30% Plans	65 days	5/22/19	8/20/19	13	2,6
13	QC 30% Plans	10 days	8/21/19	9/3/19	14,31	12
14	Submit 30% Plans	0 days	9/3/19	9/3/19	15	13
15	County Review 30% Plans	10 days	9/4/19	9/17/19	16	14
16	Develop 60% Plans	70 days	9/18/19	12/24/19	17	15
17	QC 60% Plans	10 days	12/25/19	1/7/20	18,35	16
18	Submit 60% Plans	0 days	1/7/20	1/7/20	19	17
19	County Review 60% Plans	10 days	1/8/20	1/21/20	20	18
20	Develop 90% Plans	45 days	1/22/20	3/24/20	21	19
21	QC 90% Plans	10 days	3/25/20	4/7/20	22	20
22	Submit 90% Plans	0 days	4/7/20	4/7/20	23	21
23	County Review 90% Plans	10 days	4/8/20	4/21/20	24	22
24	Develop 100% Plans	30 days	4/22/20	6/2/20	25	23
25	QC 100% Plans	10 days	6/3/20	6/16/20	26	24
26	Submit 100% Plans	0 days	6/16/20	6/16/20	4FF+40 days	25
27	**Geotechnical/Pavement Design**	**145 days**	**6/19/19**	**1/7/20**		
28	Field work	25 days	6/19/19	7/23/19	29	6FS+20 days
29	Analysis and Report Development	25 days	7/24/19	8/27/19	30	28
30	QC Report	5 days	8/28/19	9/3/19	31	29
31	Submit Report	0 days	9/3/19	9/3/19	32	30,13
32	County Review	10 days	9/4/19	9/17/19	33	31
33	Prepare Final Report	30 days	9/18/19	10/29/19	34	32
34	QC Final Report	5 days	10/30/19	11/5/19	35	33
35	Submit Final Report	0 days	1/7/20	1/7/20		34,17



Project: Schedule
Date: 2/13/19

Task | Split | Milestone | Summary | Project Summary | Deadline | Progress

Prepared by:
ATKINS

Attachment D - Fee Schedule

Corridor C/SH 29 Bypass
Work Authorization No. 2
Attachment D - Fee Schedule

TASK Atkins North America, Inc.	Atkins	KFA	P.E. Structural	HVJ	Inland Geodetics	Total Labor Cost	Total Labor Cost
1. Project Management (12 months)							$ 104,387.00
B. Monthly Progress Reports, Invoices, and Billings	$ 9,408.00	$ 4,380.00	$ 5,040.00	$ 4,290.00	$ 3,624.00	$ 26,742.00	
C. Quality Assurance and Quality Control Plan	$ 5,200.00	$ 660.00	$ 1,180.00	$ 950.00	$ 560.00	$ 8,550.00	
D. Project Coordination & Administration	$ 11,928.00	$ 1,320.00	$ 12,720.00	$ 500.00	$ 560.00	$ 27,028.00	
E. Progress/Coordination Meetings	$ 12,992.00	$ 2,980.00	$ 5,895.00	$ 1,950.00	$ 840.00	$ 24,657.00	
F. Project Schedule	$ 15,560.00	$ 330.00	$ 710.00	$ 250.00	$ 560.00	$ 17,410.00	
2. Right of Way Mapping							$ 296,927.00
A. ROW Map	$ -	$ -	$ -	$ -	$ 160,993.00	$ 160,993.00	
B. Parcel Acquisition Documents	$ 10,150.00	$ -	$ -	$ -	$ 125,784.00	$ 135,934.00	
3. Surveying							$ 7,328.00
A. Field Surveying	$ 7,328.00	$ -	$ -	$ -	$ -	$ 7,328.00	
4. Drainage Study							$ 43,943.00
A. Hydrologic/Hydraulic Modeling	$ 2,968.00	$ 6,160.00	$ -	$ -	$ -	$ 9,128.00	
B. FEMA Coordination	$ 2,680.00	$ 26,970.00	$ -	$ -	$ -	$ 29,650.00	
C. Impact and Mitigation Analysis	$ 2,680.00	$ 2,485.00	$ -	$ -	$ -	$ 5,165.00	
5. Geotechnical Services							$ 74,503.00
A. Geotechnical Investigation & Pavement Design	$ 5,648.00	$ -	$ -	$ 64,100.00	$ -	$ 69,748.00	
B. Scour Analysis	$ -	$ 4,105.00	$ -	$ 650.00	$ -	$ 4,755.00	
6. Plan Preparation							$ 1,488,992.00
B. Roadway	$ 287,880.00	$ -	$ -	$ -	$ -	$ 287,880.00	
C. Drainage	$ 14,880.00	$ 100,610.00	$ -	$ -	$ -	$ 115,490.00	
D. Signing, Markings & Illumination	$ 64,420.00	$ -	$ -	$ -	$ -	$ 64,420.00	
E. Traffic Control	$ 58,720.00	$ -	$ -	$ -	$ -	$ 58,720.00	
F. Bridge	$ 27,312.00	$ -	$ 487,540.00	$ -	$ -	$ 514,852.00	
G. Miscellaneous	$ 335,700.00	$ 7,060.00	$ 104,870.00	$ -	$ -	$ 447,630.00	
7. Bidding Phase Services							$ 35,830.00
A. Bidding Phase Services	$ 28,240.00	$ 1,130.00	$ 6,460.00	$ -	$ -	$ 35,830.00	
LABOR COST:	$ 903,694.00	$ 158,190.00	$ 624,415.00	$ 72,690.00	$ 292,921.00	$ 2,051,910.00	$ 2,051,910.00

TOTAL DIRECT EXPENSES COST:	$ 2,785.00	$ 7,250.00	$ 2,829.00	$ 77,854.10	$ 6,125.00	$ 96,843.10	
TOTAL PROJECT COST:	$ 906,479.00	$ 165,440.00	$ 627,244.00	$ 150,544.10	$ 299,046.00	$ 2,148,753.10	

Corridor C/SH 29 Bypass
Work Authorization No. 2
Attachment D - Fee Schedule

TASK (Hourly Rate)	SHEETS/ UNITS	PRINCIPAL $ 275.00	SR. ADVISOR & PM $ 275.00	PROJECT MANAGER $250.00	SR ENGINEER II $270.00	SR ENGINEER I $210.00	PROJECT ENGINEER $160.00	DESIGN ENGINEER $123.00	EIT $100.00	SR. ENGINEER TECH $130.00	ENGINEER TECH $100.00 (Hours)	SR CADD OPERATOR $123.00	CADD OPERATOR $77.00	SR GIS ANALYST $123.00	GIS ANALYST $78.00	GRAPHICS TECHNICIAN $75.00	SCHEDULER $138.00	CONTRACT SPECIALIST $100.00	ADMIN/ CLERICAL $71.00	Sub Total Hours	Hr/Unit	Labor Cost
Atkins North America, Inc.																						
1. Project Management (12 months)																						
B. Monthly Progress Reports, Invoices, and Billings	12			24															48	72	6.0	$ 9,408.00
C. Quality Assurance and Quality Control Plan	1			4		20														24	24.0	$ 5,200.00
D. Project Coordination & Administration	1			20		16		16	16											68	68.0	$ 11,928.00
E. Progress/Coordination Meetings	6			20		24		24												68	11.3	$ 12,992.00
F. Project Schedule	6			20		24											40			84	14.0	$ 15,560.00
2. Right of Way Mapping																						
A. ROW Map	1																					$ -
B. Parcel Acquisition Documents	15			16				50												66	4.4	$ 10,150.00
3. Surveying																						
A. Field Surveying	1			8		16		16												40	40.0	$ 7,328.00
4. Drainage Study																						
A. Hydrologic/Hydraulic Modeling	1			4				16												20	20.0	$ 2,968.00
B. FEMA Coordination	1			4		8														12	12.0	$ 2,680.00
C. Impact and Mitigation Analysis	1			4		8														12	12.0	$ 2,680.00
5. Geotechnical Services																						
A. Geotechnical Investigation & Pavement Design	1			8		8		16												32	32.0	$ 5,648.00
B. Soils Analysis	1																					$ -
6. Plan Preparation																						
B. Roadway																						
Typical Sections	10			16		40			40				40							156	15.6	$ 21,480.00
Project Layout and Horizontal Data	6			8			40		80				40							168	28.0	$ 19,480.00
Plan and Profile	20			40		120			240	240			160							800	40.0	$ 102,720.00
Cross-Sections	400			24			80	120		320			400							944	2.4	$ 105,960.00
Quantities	1			8		40		80	80		100									308	308.0	$ 38,240.00
C. Drainage																						
Drainage Area Map	2																					$ -
Culvert Layouts	3					8		40												48	16.0	$ 6,600.00
Ditch Designs	1					16		40												56	56.0	$ 8,280.00
Miscellaneous Drainage Details	1																					$ -
Hydraulic Data Sheets	1																					$ -
Quantities	1																					$ -
SW3P	20																					$ -
D. Signing, Markings & Illumination																						
Signing and Pavement Marking Sheets	10			4	20	40			160											224	22.4	$ 30,800.00
Illumination & Coordination	4			4	16	32			44											96	24.0	$ 16,440.00
Traffic Signal Layout	1			2	16	20			44											82	82.0	$ 13,420.00
Quantities	1				8				16											24	24.0	$ 3,760.00
E. Traffic Control																						
TCP	8			8		40		80	200											328	41.0	$ 40,240.00
Construction Sequence	1			8		40			32											80	80.0	$ 13,600.00
Quantities	1					8			32											40	40.0	$ 4,880.00
F. Bridge																						
Mankins Br Bridge East - Structural Alternatives Analysis	3			2			8	12												22	7.3	$ 3,256.00
Mankins Br Bridge West - Structural Alternatives Analysis	3			2			8	12												22	7.3	$ 3,256.00
Meet with County to present alternatives	1			4																4	4.0	$ 1,000.00
SH 29 Bypass over Creek east of Sam Houston Ave	1					8		40												48	48.0	$ 6,600.00
SH 29 Bypass over SH 130	1					8		40												48	48.0	$ 6,600.00
SH 29 Bypass over Mankins Branch	1					8		40												48	48.0	$ 6,600.00
G. Miscellaneous																						
Cover, Index, General Notes	2			8		20		40	160											228	114.0	$ 27,120.00
Retaining Wall Layouts																						
800ft at SH130 Bridge west approach	3			8		20	24	20	20			24	48							164	54.7	$ 21,148.00
70ft at SH130 Bridge west abutment	1			4		8	8	8				12	20							60	60.0	$ 7,960.00
870ft at SH130 Bridge east approach	3			8		20	24	20	20			24	48							164	54.7	$ 21,148.00
70ft at SH130 Bridge east abutment	1			4		8	8	8				12	20							60	60.0	$ 7,960.00
300ft at Mankins Branch Bridge East	1			4		8	8	8				12	20							60	60.0	$ 7,960.00
170ft at Mankins Branch Bridge East	1			4		8	8	8				12	20							60	60.0	$ 7,960.00
200ft at Mankins Branch Bridge West	1			4		8	8	8				12	20							60	60.0	$ 7,960.00
Intersection Grading Layouts	3			2		16		40		160										218	72.7	$ 29,580.00
TxDOT Reviews of SH 29 and SH 130	3			40		40			120	80										280	93.3	$ 40,800.00
Construction Estimate and Time Determination	1			8		20											120			148	148.0	$ 22,760.00
Construction Manual	1			8		40		80												128	128.0	$ 20,240.00
Design Summary Form	1			4		16		80												100	100.0	$ 14,200.00
Standard Drawings and Details	1			8		8		16	80				8							120	120.0	$ 14,264.00
30% PS&E Deliverable (QC, respond to comments)				8		24		40												72		$ 11,960.00
60% PS&E Deliverable (QC, respond to comments)				8		40		80												128		$ 20,240.00
90% PS&E Deliverable (QC, respond to comments)				8		40		80												128		$ 20,240.00
100% PS&E Deliverable (QC, respond to comments)				8		40		80												128		$ 20,240.00
Final PS&E Deliverable (QC)				8		24		40												72		$ 11,960.00
7. Bidding Phase Services																						
A. Bidding Phase Services	1			40		40		80												160	160.0	$ 28,240.00
TOTAL NUMBER OF SHEETS: HOURS:				456	60	1000	224	1378	1404	800	100	108	844				160		48	Column Total = 6,582		
LABOR COST:		$ -	$ -	$ 114,000	$ 16,200	$ 210,000	$ 35,840	$ 169,494	########	$ 104,000	$ 10,000	$ 13,284	$ 64,988	$ -	$ -	$ -	$ 22,080	$ -	$ 3,408			$ 903,694.00
				6.9%	0.9%	15.2%	3.4%	20.9%	21.3%	12.2%	1.5%	1.6%	12.8%				2.4%		0.7%			$ 903,694.00

DIRECT EXPENSES	Item	Quantity		Rate	Cost
	Travel:				
	Mileage	1000	miles	$0.580	$580.00
	Tolls	50	each	$5.00	$250.00
	Copies:				
	B/W (8.5x11)	500	each	$0.10	$50.00
	B/W (11x17)	2500	each	$0.15	$375.00
	Color (8.5x11)	500	each	$0.25	$125.00
	Color (11x17)	1000	each	$0.50	$500.00
	Misc Expenses:				
	3/16" Foam Core Mounting	100	sf	$3.00	$300.00
	Large Format Color Plotting	250	sf	$1.00	$250.00
	Postage	100	each	$0.55	$55.00
	Courier	10	each	$30.00	$300.00
TOTAL DIRECT COST:					$ 2,785.00
TOTAL PROJECT COST:					$ 906,479.00

Corridor C/SH 29 Bypass
Work Authorization No. 2
Attachment D - Fee Schedule

TASK / KFA	SHEETS/ UNITS	PRINCIPAL $ 250.00	PROJECT MANAGER $ 165.00	SR ENGINEER $187.50	ENGINEER $125.00	EIT $100.00	SR. ENGINEER TECH $90.00	ADMIN/ CLERICAL $75.00							Sub Total Hours	Hr/Unit	Labor Cost
Hourly Rate:								Hours									
1. Project Management (12 months)																	
B. Monthly Progress Reports, Invoices, and Billings	12	6	12					12							30	2.5	$ 4,380.00
C. Quality Assurance and Quality Control Plan	1		4												4	4.0	$ 660.00
D. Project Coordination & Administration	1		8												8	8.0	$ 1,320.00
E. Progress/Coordination Meetings	6		12		8										20	3.3	$ 2,980.00
F. Project Schedule	6		2												2	0.3	$ 330.00
4. Drainage Study																	
A. Hydrologic/Hydraulic Modeling	1		4	8	8	30									50	50.0	$ 6,160.00
B. FEMA Coordination	1		8	12	84	108	20	4							236	236.0	$ 26,970.00
C. Impact and Mitigation Analysis	1		4	2	2	12									20	20.0	$ 2,485.00
5. Geotechnical Services																	
A. Geotechnical Investigation & Pavement Design	1																$ -
B. Scour Analysis	1		2	2	8	24									36	36.0	$ 4,105.00
6. Plan Preparation																	
C. Drainage																	
Drainage Area Maps (Offsite & Onsite)	2		8	8	24	132	86								258	129.0	$ 26,760.00
Culvert Layouts & BCS Sheet	6		2	8	20	48	20								98	16.3	$ 10,930.00
Drainage P&P (Ditch and SS Design)	20		2	4	24	160	100								290	14.5	$ 29,080.00
Miscellaneous Drainage Details	4		2	4	8	24	12								50	12.5	$ 5,560.00
Hydraulic Data Sheets	1		8	4	20	48	28								108	108.0	$ 11,890.00
Quantities	1		2		4	4	2								12	12.0	$ 1,410.00
SW3P	11		4	4	10	80	48								146	13.3	$ 14,980.00
G. Miscellaneous																	
Cover, Index, General Notes	1		2		2	4									8	8.0	$ 980.00
Retaining Wall Layouts	7														-		$ -
Construction Estimate and Time Determination	1		4		4	8									16	16.0	$ 1,960.00
Construction Manual	1		2		2	4									8	8.0	$ 980.00
Design Summary Form	1																$ -
Standard Drawings and Details			2		2	4	24								32		$ 3,140.00
7. Bidding Phase Services																	
A. Bidding Phase Services	1		2			8									10	10.0	$ 1,130.00
TOTAL NUMBER OF SHEETS:															Column Total = 1,448		
HOURS:		6	96	56	230	698	340	16							Row Total = 1,448		
LABOR COST:		$ 1,500	$ 15,840	$ 10,500	$ 28,750	$ 69,800	$ 30,600	$ 1,200	$ -	$ -	$ -	$ -	$ -	$ -			$ 158,190.00
		0.4%	4.7%	3.1%	8.4%	20.6%	9.0%	0.4%									$ 158,190.00

DIRECT EXPENSES:						
			Quantity		Rate	
	Travel:					
	Mileage		500	miles	$0.580	$290.00
	Tolls		20	each	$5.00	$100.00
	Copies:					
	B/W (8.5x11)		100	each	$0.10	$10.00
	B/W (11x17)		500	each	$0.15	$75.00
	Color (8.5x11)		100	each	$0.25	$25.00
	Color (11x17)		200	each	$0.50	$100.00
	Misc Expenses:					
	Courier		5	each	$30.00	$150.00
	CLOMR (Online digital submittal assumed)		1	each	$6,500.00	$6,500.00
TOTAL DIRECT COST:						$ 7,250.00
TOTAL PROJECT COST:						$ 165,440.00

Corridor C/SH 29 Bypass
Work Authorization No. 2
Attachment D - Fee Schedule

TASK (Hourly Rate)	SHEETS/ UNITS	PRINCIPAL ENGINEER $ 200.00	SR QC ENGINEER $ 165.00	SR PROJECT MANAGER $155.00	SR ENGINEER $145.00	PROJECT ENGINEER $120.00	DESIGN ENGINEER $108.00	EIT II $95.00	EIT I $87.00	GRADUATE ENGINEER $70.00	SR CADD MANAGER $120.00	CADD TECHNICIAN $85.00	JR CADD TECHNICIAN $70.00	ADMIN/ CLERICAL $60.00	Sub Total Hours	Hrs/Unit	Labor Cost
T.E. Structural																	
1. Project Management (12 months)																	
B. Monthly Progress Reports, Invoices, and Billings	12	8		16										16	40	3.3	$ 5,040.00
C. Quality Assurance and Quality Control Plan	1	2	4											2	8	8.0	$ 1,180.00
D. Project Coordination & Administration	1	24		24	24									12	84	84.0	$ 12,720.00
E. Progress/Coordination Meetings	6	9		18	9										36	6.0	$ 5,895.00
F. Project Schedule	6	2		2											4	0.7	$ 710.00
6. Plan Preparation																	
F. Bridge																	
Madison Dr Bridge East - Structural Alternatives Analysis	3		2	4		8		12			4	12			42	14.0	$ 4,550.00
Madison Dr Bridge West - Structural Alternatives Analysis	3		2	4		8		12			4	12			42	14.0	$ 4,550.00
Meet with County to present alternatives	1			3				3							6	6.0	$ 750.00
Madison Branch Bridge West (SH 29 Bypass over Madison Branch east of Patriot Way) (~430ft bridge, assume 4 spans, 45-degree skew, tangent align, multi-cell boxes w/ straight cells)																	
Bridge Layout and Typical Section	2	12		16	20	16		16			24	36			140	70.0	$ 17,160.00
Foundation design, Review/Coord with Geotech		4		12	12			12							40		$ 5,540.00
Summary of Bridge Quantities and Elevations	1	4		8	4	8		16			4	8			52	52.0	$ 6,260.00
Abutment Details (2 unique bents)	4	4		12	12	16	16	16			24	32			132	33.0	$ 15,120.00
Bent Details (assume 3 unique bents)	6	12		20	24	20	16	20			36	48			196	32.7	$ 23,300.00
Framing Plans (2 units)	2	6		8	8	8		8			12	16			66	33.0	$ 8,120.00
Slab Plans and sections (2 units)	3	8		12	12	12	8				20	36			108	36.0	$ 12,940.00
HYND (includes girder design of 4 spans)	1	2		8	8		8	16			2	4			48	48.0	$ 5,240.00
Misc details (SUP rail, approach slab)	2	4		12	12	8					16	24			76	38.0	$ 9,320.00
SH 29 Bypass over SH 130 (~2,100ft bridge, assume 17 spans, 0-degree & 30-degree skews, tangent align, multi-cell boxes w/ rectangular cells)																	
Bridge Layout and Typical Section	7	16		72	84	84	48	48			60	84			496	70.9	$ 60,340.00
Foundation design and Foundation Layout	7	16		48	60	48	30	30			30	42			304	43.4	$ 38,270.00
Summary of Bridge Quantities and Elevations	1	4		8	4	8	8	16			4	8			60	60.0	$ 7,300.00
Abutment Details (2 unique bents)	4	4		12	12	16	16	16			24	32			132	33.0	$ 15,120.00
Bent Details (assume 12 unique bents - radial and skewed, ...)	12	16		32	32	32	40	40			40	40			272	22.7	$ 32,840.00
Framing Plans (7 units)	7	16		32	36	30	30	36			16	24			220	31.4	$ 27,510.00
Slab Plans and sections (7 units)	8	16		36	36	30	24	24			48	72			286	35.8	$ 34,200.00
HYND (includes girder design of 17 spans)	2	8		16	16		20	24			8	8			100	50.0	$ 12,420.00
Misc details (SUP rail, approach slab, unique conditions)	6	18		24	24	24					24	40			154	25.7	$ 19,060.00
Madison Branch Bridge East (SH 29 Bypass over Madison Branch south of SH29) (~265ft bridge, assume 3 spans, 45-degree skew, curving align, multi-cell boxes w/ straight cells)																	
Bridge Layout and Typical Section	1	4		8	12	8		16			12	16			76	76.0	$ 8,490.00
Foundation design		2		8	8			8							26		$ 3,560.00
Summary of Bridge Quantities and Elevations	1	2		4	8	6		8			4	4			36	36.0	$ 4,720.00
Abutment Details (2 unique bents)	4	4		12	12	16	16	16			24	32			132	33.0	$ 15,120.00
Bent Details (assume 2 unique bents)	4	8		12	12	16	16	16			24	32			136	34.0	$ 15,920.00
Framing Plans (1 unit)	1	4		4	8	4					4	12			36	36.0	$ 4,560.00
Slab Plans and sections (1 unit)	2	4		8	12	12	8				12	20			76	38.0	$ 9,200.00
HYND (includes girder design of 3 spans)	1	2		4	8		8	12			2	4			40	40.0	$ 4,740.00
Misc details (SUP rail, approach slab)	2	4		12	12	8					16	24			76	38.0	$ 9,320.00
																	$ -
Bridge Drainage details	4	8		16	36	16	16				20	36			148	37.0	$ 18,300.00
Bridge Aesthetic details	4	12		16	36						24	36			124	31.0	$ 16,040.00
Retaining Wall Aesthetic details	4	12		16	36						24	36			124	31.0	$ 16,040.00
G Miscellaneous																	
Cover, Index, General Notes	1	2		4	2										8	8.0	$ 1,310.00
Retaining Wall Layouts - coord w/ Atkins only																	
900ft at SH130 Bridge west approach	3			4	8										12	4.0	$ 1,780.00
75ft at SH130 Bridge west abutment	1			4	4										8	8.0	$ 1,200.00
470ft at SH130 Bridge east approach	3			4	8										12	4.0	$ 1,780.00
75ft at SH130 Bridge east abutment	1			4	4										8	8.0	$ 1,200.00
300ft at Madison Branch Bridge East	1			4	4										8	8.0	$ 1,200.00
370ft at Madison Branch Bridge East	1			4	4										8	8.0	$ 1,200.00
200ft at Madison Branch Bridge West	1			4	4										8	8.0	$ 1,200.00
Construction Estimates and Time Determination	1	4		4	16			24							48	48.0	$ 6,020.00
Construction Manual	1	2		4											6	6.0	$ 1,020.00
Design Summary Form	1	2		4	8										14	14.0	$ 2,180.00
Standard Drawings and Details	35			12	12	20					20	40			104	3.0	$ 11,800.00
30% PS&E Deliverable (QC, respond to comments)	24	2	10	10											22	0.9	$ 3,600.00
60% PS&E Deliverable (QC, respond to comments)	125	4	80	16											100	0.8	$ 16,480.00
90% PS&E Deliverable (QC, respond to comments)	150	8	100	24											132	0.9	$ 21,820.00
100% PS&E Deliverable (QC, respond to comments)	150	8	100	24											132	0.9	$ 21,820.00
Final PS&E Deliverable (QC)	150	4	40	12											56	0.4	$ 9,260.00
7. Bidding Phase Services																	
A. Bidding Phase Services	1	4	4	8		16					4	16			52	52.0	$ 6,460.00
TOTAL NUMBER OF SHEETS: / HOURS:		321	342	729	723	500	320	459			590	886		30	[illegible]	[illegible]	
LABOR COST:		$ 64,200	$ 56,430	$ 112,995	$ 104,835	$ 60,000	$ 34,640	$ 43,605	$ -	$ -	$ 70,800	$ 75,310	$ -	$ 1,800			$ 624,415.00
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]		[illegible]			$ 624,415.00

DIRECT EXPENSES:	Item	Quantity	Unit	Rate	Cost
	Travel				
	Mileage	100	miles	$0.565	$56.00
	Tolls	12	each	$5.00	$60.00
	Copies				
	B/W (8.5x11)	750	each	$0.10	$75.00
	B/W (11x17)	1500	each	$0.15	$225.00
	Color (8.5x11)	750	each	$1.00	$750.00
	Color (11x17)	1000	each	$1.50	$1,500.00
	Misc Expenses				
	1/4" Foam Core Mounting		sf	$3.00	
	Large Format Color Plotting		sf	$3.00	
	Postage	20	each	$0.55	$11.00
	Courier	5	each	$30.00	$150.00
TOTAL DIRECT COST:					$ 2,829.00
TOTAL PROJECT COST:					$ 627,244.00

Corridor C/SH 29 Bypass
Work Authorization No. 2
Attachment D - Fee Schedule

TASK Hourly Rate: HVJ	SHEETS/ UNITS	SR ADVISOR/ SR PM $ 175.00	PROJECT MANAGER $ 125.00	EIT $100.00	SR TECHNICIAN $60.00	TECHNICIAN $55.00	SR CADD OPERATOR $95.00	ADMIN/ CLERICAL $65.00							Sub Total Hours	Hr/Unit	Labor Cost
								Hours									
1. Project Management (12 months)																	
B. Monthly Progress Reports, Invoices, and Billings	12	12	7	6				11							36	3.0	$ 4,290.00
C. Quality Assurance and Quality Control Plan	1	4	2												6	6.0	$ 950.00
D. Project Coordination & Administration	1		4												4	4.0	$ 500.00
E. Progress/Coordination Meetings	6	4	10												14	2.3	$ 1,950.00
F. Project Schedule	6		2												2	0.3	$ 250.00
5. Geotechnical Services																	
A. Geotechnical Investigation & Pavement Design	1	49	112	389	22	19		4							595	595.0	$ 64,100.00
B. Scour Analysis	1		2	4											6	6.0	$ 650.00
TOTAL NUMBER OF SHEETS:															Column Total = 663		
HOURS:		69	139	399	22	19		15							Item Total = 663		
LABOR COST:		$ 12,075	$ 17,375	$ 39,900	$ 1,320	$ 1,045	$ -	$ 975	$ -	$ -	$ -	$ -	$ -	$ -			$ 72,690.00
		16.6%	23.9%	54.9%	1.8%	1.4%		1.3%									$ 72,690.00

DIRECT EXPENSES:					
Travel:		Quantity		Rate	
Mileage		720	miles	$0.580	$417.60
Hotel/Meals		32	day	$150.00	Out of town drill crew $4,800.00
Misc Expenses:					
ATV Mobilization/Demobilization		1	each	$3,000.00	$3,000.00
Mobilization/Demobilization		1	each	$400.00	$400.00
Undisturbed sample boring w/3" Shelby tube		915	per foot	$22.50	$20,587.50
Add for coring in rock (Rock Coring Cost - Soft & Hard Rock) 0-25' Depth		480	per foot	$22.50	assume 5ft soil in Bridge $10,800.00
Texas Cone Penetration Test		183	each	$25.00	1 per 5ft $4,575.00
Standard Penetration Test		68	each	$22.50	2 per bore $1,530.00
Grout Backfill		915	per foot	$5.00	$4,575.00
Moisture Content		68	each	$18.00	2 per bore $1,224.00
Sieve Analysis		5	each	$110.00	$550.00
Atterberg Limits		68	each	$75.00	$5,100.00
Unconfined Compressive Strength Test		23	each	$65.00	1 per non pavement $1,495.00
Consolidated Undrained Triaxial Test		1	each	$860.00	$860.00
Consolidation		1	each	$550.00	$550.00
Texas Triaxial		2	each	$1,750.00	1 per tri $3,500.00
Percent Passing No. 200 Sieve		68	each	$35.00	$2,380.00
Sulfate Testing		2	each	$75.00	$150.00
Soil PH Testing		2	each	$200.00	$400.00
CBR Test		3	each	$300.00	$900.00
Proctor Test		6	each	$260.00	$1,560.00
Swell Test		5	each	$280.00	$1,400.00
Clearing		1	day	$1,500.00	$1,500.00
FWD Equipment		1	each	$2,600.00	on SH 29 and adjacent CRs $2,600.00
Traffic Control		2	each	$1,500.00	pavement on SH 29, FM 106 and FWD $3,000.00
TOTAL DIRECT COST:					$ 77,854.10
TOTAL PROJECT COST:					$ 150,544.10

Corridor C SH/29 Bypass
Work Authorization No. 2
Attachment D - Fee Schedule

TASK Hourly Rate: Inland Geodetics	SHEETS/ UNITS	PROJECT MANAGER $ 148.00	LICENSED STATE LAND SURVEYOR $ 150.00	RPLS $135.00	SURVEY TECH $98.00	ADMIN/ CLERICAL $54.00	2 PERSON FIELD CREW $142.00	3 PERSON FIELD CREW $165.00	4 PERSON FIELD CREW $185.00	ADDITIONAL CREWMEMBER $48.00	GPS FIELD OPERATOR $120.00				Sub Total Hours	Hr/Unit	Labor Cost
		Hours															
1. Project Management (12 months)																	
B. Monthly Progress Reports, Invoices, and Billings	12	12				36									48	4.0	$ 3,624.00
C. Quality Assurance and Quality Control Plan	1	4													4	4.0	$ 560.00
D. Project Coordination & Administration	1	4													4	4.0	$ 560.00
E. Progress/Coordination Meetings	6	6													6	1.0	$ 840.00
F. Project Schedule	6	4													4	0.7	$ 560.00
2. Right of Way Mapping																	
A. ROW Map	1	6		24	120	6									156	156.0	$ 16,164.00
B. Parcel Acquisition Documents	25																
Research				10	32	4									46		$ 4,702.00
Property Schematic				12	48	4									64		$ 6,540.00
Initial Field Survey		4		35		12	200			24	64				339		$ 43,165.00
Boundary Analysis				32	32	6									70		$ 7,780.00
Secondary Field Pass				16	12		32			12	40				112		$ 13,256.00
Parcel Prep (25 parcels)		12		24	476	24									536		$ 52,864.00
QA/QC				4	32										36		$ 3,676.00
Deliverables		4		2	30	4									40		$ 3,986.00
Title Review				40	32	6									78		$ 8,860.00
3. Surveying																	
A. Field Surveying																	
Route Prep/Control Survey/Levels		2		8	56	6	48	40			24				144		$ 19,548.00
Landowner Coordination		8		4	56	12	4			2	4				90		$ 5,020.00
Field Survey (150 ft corridor)		8		32	24	8	160			48	128				408		$ 48,608.00
Data Processing		4		24	120	8									156		$ 15,992.00
QA/QC					12		24				16				52		$ 6,304.00
Hydraulic Cross Sections		2		6	56			96			40				160		$ 23,298.00
Deliverables		2		2	16	2									22		$ 2,226.00
Borehole Locations (34)		1			4						24				29		$ 3,412.00
811 Coordination					4	4	4								12		$ 1,176.00
TOTAL NUMBER OF SHEETS: HOURS:		83		275	1042	142	472	136		86	340				Column Total = 2.5% Sum Total = 2.5%		
LABOR COST		$ 11,620	$ -	$ 37,125	$ 102,116	$ 7,668	$ 67,024	$ 22,440	$ -	$ 4,128	$ 40,800	$ -	$ -	$ -			$ 292,921.00
		3.2%		10.7%	28.5%	2.5%	18.8%	6.3%		1.3%	13.2%						$ 292,921.00

DIRECT EXPENSES:						
			Quantity		Rate	
	Travel:					
	Mileage	4800	miles	$0.580		$2,784.00
	Tolls	48	each	$5.00		$240.00
	Copies:					
	B/W (8.5x11)	450	each	$0.10		$45.00
	B/W (11x17)	240	each	$0.15		$36.00
	Color (8.5x11)		each	$0.25		
	Color (11x17)		each	$0.50		
	Misc Expenses:					
	All Terrain Vehicle	20	day	$55.00		$1,100.00
	Additional Vehicle	32	day	$60.00		$1,920.00
	Postage		each	$0.55		
	Courier		each	$30.00		
TOTAL DIRECT COSTS						$ 6,125.00
TOTAL PROJECT COST:						$ 299,046.00