**SUPPLEMENTAL WORK AUTHORIZATION NO. 3**
**TO**
**WORK AUTHORIZATION NO. 1**

**WILLIAMSON COUNTY ROAD BOND PROJECT:**
**GREAT OAKS BRIDGE AT BRUSHY CREEK**

This Supplemental Work Authorization No. 3 to Work Authorization No. 1 is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated May 9, 2017 ("Contract") and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and P.E. Structural Consultants, Inc. (the "Engineer").

WHEREAS, the County and the Engineer executed Work Authorization No.1 dated effective May 9, 2017 (the "Work Authorization");

WHEREAS, pursuant to Article 14 of the Contract, amendments, changes and modifications to a fully executed Work Authorization shall be made in the form of a Supplemental Work Authorization; and

WHEREAS, it has become necessary to amend, change and modify the Work Authorization.

**AGREEMENT**

NOW, THEREFORE, premises considered, the County and the Engineer agree that the Work Authorization shall be amended, changed and modified as follows:

I. The Services to be Provided by the Engineer that were set out in the original Attachment "B" of the Work Authorization are hereby amended, changed and modified as shown in the attached revised Attachment "B".

II. The Work Authorization shall terminate on April 30, 2020. The Services to be Provided by the Engineer shall be fully completed on or before said date unless extended by an additional Supplemental Work Authorization. The revised Work Schedule is attached hereto as Attachment "C".

III. The maximum amount payable for services under the Work Authorization is hereby increased from $1,386,700.00 to $1,667,250.00. The Fee Schedule for these additional services is attached hereto as Attachment "D".

Except as otherwise amended by prior or future Supplemental Work Authorizations, all other terms of the Work Authorization are unchanged and will remain in full force and effect.

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

**IN WITNESS WHEREOF,** the County and the Engineer have executed this Supplemental Work Authorization, in duplicate, to be effective as of the date of the last party's execution below.

**ENGINEER:**

By: _____
Signature

Joelle S. Rosentswieg, P.E.
Printed Name

Vice President
Title

April 2, 2019
Date

**COUNTY:**

By: _____
Signature

Bill Gravell Jr.
Printed Name

Williamson County Judge
Title

4/9/19
Date

OK
M 4/3/19

LIST OF ATTACHMENTS

Attachment A - Services to be Provided by County *(N/A – see original Work Authorization)*

Attachment B - Services to be Provided by Engineer

Attachment C - Work Schedule

Attachment D - Fee Schedule

# ATTACHMENT B
# SERVICES TO BE PROVIDED BY THE ENGINEER
# DESIGN SERVICES FOR Great Oaks Bridge at Brushy Creek
Supplemental No. 3 to Work Authorization No. 1

## GENERAL DESCRIPTION OF THE ADDITIONAL SERVICES:

The additional services to be performed by the Engineer under this Supplemental Work Authorization shall consist of engineering and preparation of Plans, Specifications and Estimates for the items detailed below, which were not specified in the original scope of the Great Oaks Bridge at Brushy Creek Project.

## DESIGN TASKS ASSOCIATED WITH THE ADDITIONAL SERVICES:

### TASK 2 – GEOTECHNICAL SERVICES

2.1 Provide supplemental subsurface geotechnical drilling to identify the limestone surface elevation at seven (7) locations. Five (5) locations will be performed between the south bank of Brushy Creek and the existing roadway. The remaining two (2) borings will be drilled on the north side of Brushy Creek. The borings will be advanced by auger techniques and will be extended to penetrate at least 1 ft into the limestone surface. At the bottom of the boring, a Texas Cone Penetrometer will be taken for documentation of the strength of the rock at the limestone surface. No other laboratory testing or field testing will be performed. GPS coordinates for each boring location will be documented and provided to the Surveyor.

Deliverables will include the boring logs for each new boring, depicting the subsurface conditions and the depth at which limestone was encountered.

2.2 Perform a subsurface geotechnical exploration by drilling up to two (2) soil borings near the intersection to verify the surface elevation and quality of limestone and provide supplemental geotechnical recommendations for the proposed Bent 2. The borings will advance up to 50 ft below the existing ground surface using wet rotary drilling techniques and collecting Texas Cone Penetrometer testing at 5 ft intervals. A few laboratory tests will be performed to classify the subsurface conditions. GPS coordinates for each boring location will be documented and provided to the Surveyor.

Deliverables will consist of allowable bearing capacity recommendations for footings, if applicable, and drilled shaft recommendations including allowable bearing capacity, skin friction capacities, and resistance to uplift capacities. This information will be illustrated in Pier Capacity Curves. In addition to the boring logs, this information will be incorporated into the final report.

## TASK 3 – FIELD SURVEYING

3.1 Locate up to nine (9) additional bore hole locations within the limits of the project. Horizontal and vertical data will be acquired for each bore hole. The field collected data will be added to the 2D and 3D MicroStation Deliverables. It is understood that all bore holes will be available to locate in one field mobilization.

3.2 Perform additional topographic and design survey around the existing pond located at the southeast corner of the intersection of Brushy Creek Road and Great Oaks Blvd. The limits of this survey will be: 1) the concrete path along the west edge of the pond, 2) the dam structure located at the northern end of the pond, 3) the concrete path and back of residents located along the east edge of the pond, and 4) will extend approximately 150 feet south of the upstream end of the pond. The collected data will extend to the current existing edge of water. NO in-pond information will be collected.

## TASK 4 – ROADWAY DESIGN

4.1 Incorporate drainage changes resulting from consideration of NOAA Atlas14 rainfall data into roadway plans (Plan & Profile sheets, Parking Lot plans).

4.2 Incorporate drainage changes resulting from consideration of NOAA Atlas14 rainfall data into cross sections.

4.3 Add locations and notes for utility work on Roadway plans and update quantities and construction cost estimate.

4.4 Update plans so the proposed roadway at the Brushy Creek Rd and Hairy Man Rd project limits ties-in to the Hairy Man Project proposed roadway. Roadway widths will be coordinated to match the Hairy Man Project and/or provide a new left-turn lane into the proposed parking lot (see Task 4.5 below). It is assumed that current project limits along Brushy Creek Rd and Hairy Man Rd will not be extended and that new sheets will not be required.

4.5 Revise plans to provide for a left turn lane into the parking lot. Revisions will be minimized by utilizing available shoulder width and requesting a design exception for the reduction in shoulder.

## TASK 5 – DRAINAGE

5.1 Preliminary review of recently-released NOAA Atlas14 rainfall intensities and preliminary assessment of Brushy Creek behavior using new rainfall data, in order to determine ramifications to the project should H&H design be updated for the new, higher rainfall depths. Prepare written summary explaining impacts to project and amount of re-design effort that will be needed.

5.2 Update the Brushy Creek existing (corrected effective) and post-project (proposed) hydrologic and hydraulic (H&H) models with the recently published National Oceanic and Atmospheric Administration (NOAA) Atlas14 rainfall data. Currently, the Brushy Creek

Preliminary Federal Emergency Management Agency (FEMA) H&H models are being used as the base (duplicate effective) models for this Project, which do not include Atlas14 rainfall.

- Update the corrected effective and proposed hydrologic HEC-HMS model with Atlas14 rainfall.
- Update the corrected effective and proposed hydraulic HEC-RAS models with flows from the updated Atlas14 hydrologic model.
- Update the corrected effective and proposed 100-year and 500-year floodplains with water surface elevations (WSE) developed from the updated Atlas14 hydraulic model.
- Update the 60% drainage report with results and floodplain figures from the updated Atlas14 H&H models.
- Assumptions:
    - Updates to the H&H models do not include effort for major changes to the project configuration, such as moving bridge substructures, shifting retaining wall or parking lot locations/elevations, or changing the proposed grading in the Brushy Creek channel.
    - Hydrologic and hydraulic models associated with the CLOMR application will be based upon pre-Atlas14 rainfall data. Similarly, none of the hydrologic or hydraulic modeling results from the NOAA Atlas14 design models will be included in the documentation that will be submitted to FEMA as part of the CLOMR application.

5.3 Scour/erosion analysis and protection design will be updated at retaining walls adjacent to Brushy Creek and in locations where the updated Atlas14 proposed hydraulic model shows high velocities.

- Update scour calculations based on updated Atlas14 hydraulic model.
- Update rock riprap size and locations based on updated Atlas14 hydraulic model and scour calculations. Recalculate quantities and update summaries.
- Update scour analysis documentation in 60% Drainage Report with updated Atlas14 results.
- Assumptions:
    - Scour analysis and rock riprap design will be based upon NOAA Atlas14 rainfall for the 25-year storm event. Designing riprap for a larger storm event will require significant redesign and is not included as part of this task.

- Effort to change the type of scour protection from the currently-proposed rock riprap is not included in this task. Unless specifically required by design, grouted rock riprap or concrete riprap will not be used for scour/erosion protection.

5.4 Revise the storm sewer model, output data, and related documentation due to changes associated with the updated Atlas14 rainfall data. Possible changes include additional inlets to reduce ponding widths and upsizing storm pipes to accommodate the additional runoff. Anticipated subtasks include:

- Update the hydrologic calculations with Atlas14 rainfall data.
- Re-design storm drain system in GeoPak Drainage.
- Locate and re-design storm drain inlets.
- Optimize re-design based on Hydraulic Grade Line (HGL).
- Identify locations requiring trench excavation protection.

5.5 Re-evaluate and update water quality Best Management Practices (BMP) calculations and design to incorporate Atlas14 rainfall.

- Assumptions:
  - Incorporating NOAA Atlas14 rainfall data into the design will cause the limits of the 100-yr floodplain to expand relative to the previous 100-year floodplain considered in design. However, as previously coordinated with TCEQ, the project's proposed water quality devices will not require relocation. Redesign effort to move the water quality devices from their current position to relocate outside the new NOAA Atlas 14 floodplain limits is not included in this task.
  - It is our understanding that design criteria and the number of water quality devices required for compliance with TCEQ will not change due to the Atlas14 updates. Incorporating the new Atlas14 rainfall data into the design is not likely to require additional water quality devices provided the design criteria does not change. Any redesign effort needed to add new water quality devices to the project is not included in this task.
  - The County is responsible for the $5,000 fee associated with the Water Pollution Abatement Plan (WPAP) submittal to the Texas Commission on Environmental Quality (TCEQ) (same as original Work Authorization).
  - An updated geological assessment will not be required. It is assumed the assessment provided by the County and performed by Pape Dawson in 2014 will be acceptable to submit with the WPAP for this Project.

5.6 Ditch capacity calculations and design will be revised using the flow values based on the new Atlas14 data. Possible changes include widening ditches and adding riprap to provide slope stability and minimize erosion. Plan and profile sheets, as well as calculation sheets will be updated.

5.7 Update the Shirley McDonald Park Pond H&H calculations to include Atlas14 rainfall data. Additional survey will be required to estimate the available pond storage above the wet pond's normal water surface elevation to an elevation that is higher than the previous (pre-Atlas 14) 100-yr water surface elevation estimated for the pond.

- Review additional Project survey of Shirley McDonald Park Pond.
- Update the hydrologic calculations with Atlas14 rainfall.

5.8 Update design of all proposed cross-drainage structures based on inflows from updated Atlas14 H&H calculations.

- Update sizes of all cross-drainage structures based on updated Atlas14 inflows.
- Update grading sheets, culvert layout sheets, and H&H calculation sheets associated with updated cross drainage structure sizes.
- Assumptions:
    - The proposed trail and parking lot surface elevations were originally designed to be higher than the 10-yr design storm WSEL's. By changing to Atlas14 rainfall values, it is likely that the proposed trail and parking lot will be minimally overtopped when subjected to the higher Atlas14 rainfall values. It is our understanding that the County will not require changes to the current parking lot and trail elevations. As such, the expected revisions to the culvert designs do not include resizing the culverts to eliminate the overtopping condition.

## TASK 7 – MISCELLANEOUS SERVICES

7.1 Review and incorporate revised retaining wall design recommendations for bearing in limestone and fill-type soil strata and for changes to the scour/riprap design. Coordinate review comments or questions.

7.2 Re-design two spread footing retaining walls and one MSE retaining wall to address extensive scour and revised geotechnical recommendations based on information from the new borings and new Atlas14 rainfall values. Analysis indicates there may be considerably more scour than originally expected, and as a result RW-1A, RW-1B and RW-4L must be re-designed to lower the bottom of wall elevations and firmly embed their foundations in the in-situ limestone stratum. Spread footing walls in isolated locations may require wider footings with unique designs. Changing the footing bearing stratum requires the walls to be re-designed, the design tables, quantities and estimated construction costs to be updated,

and wall layout sheets to be modified to reflect the design changes. *(7 sheets require modification)*

7.3 Change TCP design to incorporate a new runaround at the north end of Great Oaks Drive, allowing Brushy Creek Rd to remain open to traffic during all phases of construction. Revise the Horizontal Alignment, Detour Plans, Profile and Sections for Layout. *(12 sheets)*

7.4 Revise Sequence of Construction narrative. *(1 sheet)*

7.5 Revise TCP Layouts to reflect different work areas. *(up to 24 sheets)*

7.6 Design a temporary built-up "ramp" for roadway surface to transition from the lower elevations at the north end of the existing Great Oaks bridge to the higher elevations of the proposed Oak Ridge pavement. Incorporate "ramp" into construction sequencing and traffic control plan.

7.7 Update Construction Schedule to reflect new sequencing.

7.8 For traffic phasing, and to limit construction effort and amount of temporary pavement needed, the traffic control plan requires temporary special shoring in four (4) locations. The shoring at one location can be a laid-back cut, temporary MSE wall shoring is required at two locations, and sheet pile shoring is required at one location. Each location requires a temporary special shoring layout with plan, elevation and design criteria. Four (5) additional sheets are anticipated. New bid codes, quantities, estimated construction costs, specifications and general notes will be required. *(4 new sheets)*

7.9 Coordinate updated riprap plans, quantities and estimated construction costs to reflect new riprap types/sizes and limits per updated scour analysis and riprap design (updated to incorporate Atlas14). *(1 sheet)*

7.10 Update channel grading as needed once Atlas14 has been incorporated into H&H design. *(4 sheets)*

7.11 Determine locations where existing fence will remain, be re-used or be demolished. Develop notes describing re-use of fence and guardrails to match. Determine quantities and cost for non-TxDOT item. *(~10 sheets)*

7.12 Revise Retaining Wall Layouts for changes to culvert and storm sewer designs once Atlas14 has been incorporated into design. *(~19 sheets)*

## TASK 8 – BRIDGE DESIGN

8.1 Provide additional coordination with the Geotechnical Engineer, Surveyor and Hydraulic Engineer as needed to determine new boring locations, facilitate geotechnical and survey field work, and support the Hydraulic Engineer to refine the scour analysis. Review survey

and aerials to determine accessibility and feasible drilling locations. Prepare exhibit showing proposed boring locations.

8.2 Work with Williamson County's Utility Coordinator to identify conflicts with existing utilities, understand which existing utilities can and cannot be relocated, request and review better-quality SUE records for select utilities. Prepare up to three (3) exhibits to document utilities in conflict with bridge, wall and drainage structures. *Additional SUE survey work to be performed by County's Utility Coordinator.*

8.3 Incorporate notes provided by Utility Coordinator onto plans for proposed manhole extensions and treatment of abandoned existing lines. Calculate quantities and construction costs for proposed manhole extensions and treatment of abandoned lines and incorporate into summary sheets and estimated project construction cost. *(4 sheets)*

8.4 Study survey and as-built plans for existing 54" WW utility. Assess conflict with Bent 2 foundation (utility runs parallel with and directly below Bent 2) and consider feasible solutions. Estimate construction costs for each and compare the potential solutions (consider Bent 2 spread footing, Bent 2 straddle footing foundation, and relocation of conflicting 54" WW utility). Coordinate with HNTB and Utility Coordinator to determine preferred solution.

8.5 Evaluate Bent 2 foundation conflict with existing manhole. Consider feasible solutions and determine best option. Coordinate with HNTB and Utility Coordinator to determine best solution. Move east column of Bent 2 to miss manhole if it is determined to be the best solution. Moving east column will require cap and column redesign (effort is not included here).

8.6 Re-configure Bent 2 from typical multi-column foundation system (single shafts below each column) to avoid conflict with 54" WW utility. Develop layout for straddle footing and dual shaft foundation. Note that straddle footings below each column are expected to be unique (6 unique designs). Design straddle footings. Re-design bent columns for taller heights (to extend down to footing). Review quantities and cost estimate.

8.7 Update Interior Bent 2 Detail Sheets for revised foundation system. Develop up to six (6) new footing detail sheets to show the unique straddle footings at each column. *(assume 7 sheets)*

8.8 Update Bridge Layouts and Typical Sections to reflect revised column locations and to depict the new foundation system for Bent 2. *(13 sheets)*

8.9 Update Foundation Layout to reflect revised column and drilled shaft locations and to depict the new foundation system for Bent 2. *(1 sheet)*

8.10 Relocate abutment drilled shafts to miss utilities, update abut designs/details to miss 54"WW pipe. *(4 sheets)*

8.11 Update 3-D models previously developed to add more detail, and provide renderings from new perspectives up to an additional 60 man hours per direction from the GEC. *(2 sheets)*

## TASK 9 – ENVIRONMENTAL/PERMITTING

No additional environmental or permitting services will be required per the following assumptions:

- An update to the Phase I Environmental Site Assessment (ESA) based on a new database and Atlas14 design revisions will not be required. The previously developed Phase I ESA is only valid for 180 days after it was finalized; however it is our understanding that the County does not require a resubmittal.

- Relative to the current design, there will be no changes to the Project Boundary.

- Design changes will not increase environmental impact. Relative to the current design, there will be no changes to areas impacting wetlands or disturbed area/linear feet impacted below the Ordinary High Water Mark (OHWM). No mitigation will be required based on the total impacts anticipated in the current design.

- Cultural resource services will not be required to perform a field re-visit due to revised file search area.

- Cultural resource services will not be required to perform map or report updates due to Atlas14 design revisions.

## TASK 10 – PROJECT MANAGEMENT

10.1 Project management for additional scope (invoicing, budget tracking, progress reports).

10.2 Facilitate and support additional Geotechnical effort. Coordinate partial lane closure plan, scheduling and documentation for Geotechnical Engineer's fieldwork. Distribute and review updated foundation design & scour recommendations, coordinate any comments or questions.

10.3 Facilitate and support additional Survey effort. Coordinate with the Surveyor to perform fieldwork as needed to survey new boring locations. Distribute new survey files to design team. Coordinate any comments or questions.

10.4 Coordinate and attend meeting with Williamson County's Utility Coordinator to address conflicts with existing utilities. Coordinate changes to utility locations from 30% and 60% submittals. Prepare exhibit illustrating discrepancies. Coordinate changes to plans to address abandoned lines and existing manholes to be extended.

10.5 Coordinate with Geotechnical Engineer to obtain foundation recommendations and design parameters for temporary special shoring walls.

10.6 Coordination of all changes in design and/or permitting caused by the incorporation of NOAA Atlas14 data.

10.7 Coordinate new left-turn lane into proposed parking lot. Prepare documentation/exhibits for design exception(s). Coordinate new roadway taper needed with the Hairy Man Project design team.

10.8 Coordinate internally with design team and with the Hairy Man Project design team to connect roadway at Brushy Creek Rd and Hairy Man Rd project limits.

# ATTACHMENT C
# WORK SCHEDULE

## PS&E for the Great Oaks Bridge at Brushy Creek

This Work Authorization shall terminate on April 30, 2020, unless amended by a separate Supplemental Agreement.

**Work Schedule to Date:**

- Notice to Proceed ..... May 1, 2017
- Route & Design Studies ..... May 2017 – Dec 2017
- Geotechnical Services ..... May 2017 – Aug 2018
- Field Surveying ..... May 2017 – Aug 2018
- Roadway Design ..... May 2017 – Oct 2018
- Drainage ..... May 2017 – Oct 2018
- Signing, Marking ..... July 2017 – Oct 2018
- Miscellaneous Services ..... May 2017 – Oct 2018
- Bridge Design ..... May 2017 – Oct 2018
- Traffic Signal Development ..... Jan 2018 – Oct 2018
- Environmental and Permitting
- (includes 12 months for ACOE IP) ..... May 2017 – Sept 2019

**Work Schedule Moving Forward:**

- Incorp SWA#3, Complete Design (all Disciplines)** ..... Apr 2019 – Aug 2019
- Bidding and Award Phase ..... Oct 2019 – Nov 2019
- Begin Construction ..... January 2020

***Assumes NTP for SWA#3 is received in early April 2019*

**PS&E Submittals:**

- 30% Submittal ..... Oct 3, 2017
- 60% Submittal ..... Aug 1, 2018
- 95% Submittal ..... June 28, 2019
- 100% Submittal ..... Aug 16, 2019
- Final Submittal ..... Aug 30, 2019

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1)

SUMMARY OF PROPOSED FEES

**PRIME PROVIDER NAME: P.E. Structural Consultants, Inc.**
**Date: 03/20/2019**
**PROJECT NAME: Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)**

| TASK DESCRIPTION | P.E. Structural Consultants, Inc. | Kennedy Consulting, Inc. | AECOM | Raba Kistner Consultants, Inc. | Cobb Fendley & Assoc, Inc. | Total Cost |
|---|---|---|---|---|---|---|
| Task 1 - ROUTE & DESIGN STUDIES | | | | | | $0.00 |
| Task 2 - GEOTECHNICAL SERVICES AND PAVEMENT DESIGN | | | | $8,800.00 | | $8,800.00 |
| Task 3 - FIELD SURVEYING | | | | | $10,500.00 | $10,500.00 |
| Task 4 - ROADWAY DESIGN CONTROLS | | $16,298.00 | | | | $16,298.00 |
| Task 5 - DRAINAGE | $6,900.00 | | $58,000.00 | | | $64,900.00 |
| Task 6 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION | | | | | | $0.00 |
| Task 7 - MISCELLANEOUS SERVICES | $38,000.00 | $28,002.00 | | | | $66,002.00 |
| Task 8 - BRIDGE DESIGN | $73,200.00 | | | | | $73,200.00 |
| Task 9 - ENVIRONMENTAL AND/OR PERMITTING SERVICES | | | $0.00 | | | $0.00 |
| Task 10 - PROJECT MANAGEMENT | $31,650.00 | | | | | $31,650.00 |
| LABOR COSTS | $149,750.00 | $44,300.00 | $58,000.00 | $8,800.00 | $10,500.00 | $271,350.00 |
| OTHER DIRECT EXPENSE COSTS | $0.00 | $0.00 | $0.00 | $9,200.00 | $0.00 | $9,200.00 |
| TOTAL LABOR + ODE COSTS | $149,750.00 | $44,300.00 | $58,000.00 | $18,000.00 | $10,500.00 | |
| | | | | | SWA3 TOTAL: | $280,550.00 |

| | |
|---|---|
| WA1 Original Amount: | $976,000.00 |
| SWA1: | $375,000.00 |
| SWA2: | $35,700.00 |
| SWA3: | $280,550.00 |
| New Total for WA1: | $1,667,250.00 |
| Current PSA Total Amount (per Amendment 1): | $1,575,000.00 |
| Deficit in PSA (after SWA3): | -$92,250.00 |
| Reserve for add'l design services: | $50,000.00 |
| Reserve for Construction Phase Services: | $100,000.00 |
| PSA AMENDMENT 2 ADD'L TOTAL INCREASE: | $250,000.00 |
| PROPOSED PSA AMOUNT (AMENDMENTS 1 AND 2): | $1,825,000.00 |

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1)

**PRIME PROVIDER NAME: P.E. Structural Consultants, Inc.**
**Date: 03/20/2019**
**PROJECT NAME: Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)**

| TASK DESCRIPTION | Principal Engineer | Senior QC Engineer | Senior Project Manager | Senior Engineer | Project Engineer | Design Engineer | Eng-in-Training (EIT II) | Senior CAD Manager | CAD Technician | Admin/ Clerical | Total hours | Cost per Line Item |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 5 - DRAINAGE** | | | | | | | | | | | | |
| 5.1 Preliminary Review of NOAA Atlas 14 and written summary of impacts | 4 | 4 | 24 | 12 | | | | | | | 44 | $6,900.00 |
| | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 4 | 4 | 24 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | |
| CONTRACT RATE PER HOUR | $200.00 | $165.00 | $155.00 | $145.00 | $120.00 | $105.00 | $95.00 | $120.00 | $85.00 | $60.00 | | |
| TOTAL LABOR COSTS | $800.00 | $660.00 | $3,720.00 | $1,720.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $6,900.00 | |
| *% DISTRIBUTION OF STAFFING* | *9.1%* | *9.1%* | *54.7%* | *27.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *100%* | |
| **SUBTOTAL (Task 7)** | | | | | | | | | | | | **$6,900.00** |
| **Task 7 - MISCELLANEOUS SERVICES** | | | | | | | | | | | | |
| 7.1 Review new/revised wall design recommendations per new Geotech and scour/riprap rqmnts | 1 | | 4 | 4 | | | 8 | | | | 17 | $2,160.00 |
| 7.2 Reconfigure/redesign 4 walls; update wall layouts, sections and tables (mod 7 shts) | 2 | 4 | 8 | 4 | 12 | | 16 | 4 | 20 | | 70 | $8,020.00 |
| 7.8 Design/detail temp spl shoring for constr phasing (5 new sheets), revise per new TCP | 2 | 5 | 10 | 10 | | | 10 | 15 | 30 | | 82 | $9,525.00 |
| 7.9 Coordinate updated riprap plans, quantities, estimates per refined scour analysis | 1 | 1 | 8 | 8 | | | | 4 | 8 | | 30 | $3,925.00 |
| 7.10 Update channel grading as needed per Atlas 14 changes to H&H | 1 | 2 | 12 | 12 | 12 | | 8 | 2 | 4 | | 53 | $6,910.00 |
| 7.11 Determine portion of fence to remain/demo; dev fence/guardrail notes; calc qty's and costs | 1 | 2 | 8 | 8 | 4 | | 4 | 2 | 4 | | 33 | $4,370.00 |
| 7.12 Revise wall layouts for changes to storm sewer design | 1 | 2 | 4 | 4 | | | 4 | 2 | 8 | | 25 | $3,090.00 |
| | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 9 | 16 | 54 | 50 | 28 | 0 | 50 | 29 | 74 | 0 | 310 | |
| CONTRACT RATE PER HOUR | $200.00 | $165.00 | $155.00 | $145.00 | $120.00 | $105.00 | $95.00 | $120.00 | $85.00 | $60.00 | | |
| TOTAL LABOR COSTS | $1,845.00 | $2,640.00 | $8,370.00 | $7,250.00 | $3,360.00 | $0.00 | $4,750.00 | $3,480.00 | $6,305.00 | $0.00 | $38,000.00 | |
| *% DISTRIBUTION OF STAFFING* | *3.0%* | *5.2%* | *17.4%* | *16.1%* | *9.0%* | *0.0%* | *16.1%* | *9.3%* | *23.9%* | *0.0%* | *100%* | |
| **SUBTOTAL (Task 7)** | | | | | | | | | | | | **$38,000.00** |
| **Task 8 - BRIDGE DESIGN** | | | | | | | | | | | | |
| 8.1 Add'l bridge-geotech-hydraulic coord (locate borings, prep exhibit) | 1 | | 8 | 8 | | | 8 | 2 | 4 | | 31 | $3,940.00 |
| 8.2 Add'l bridge-util coord (review util docs, request add'l info needed for redesign, prep exhibits) | 1 | | 12 | 8 | | | 8 | 4 | | | 33 | $4,460.00 |
| 8.3 Incorporate manhole extensions per Utility Coordinator (summary sheets and cost estimates) | 1 | 2 | 8 | 4 | | | | 2 | 2 | | 19 | $2,760.00 |
| 8.4 Investigate options & costs/select new Bent 2 fndn (e.g., bent w/ straddle footing & 2 DS's) | 4 | 2 | 16 | 12 | | | 8 | | | | 42 | $6,110.00 |
| 8.5 Evaluate Bent 2 conflict with manhole and develop solution | 2 | 2 | 12 | 8 | | | | | | | 24 | $3,750.00 |
| 8.6 Design straddle footings; redesign taller bent columns for reconfigured Bent 2 | 2 | 8 | 16 | 16 | 16 | | 24 | | | | 82 | $10,720.00 |
| 8.7 Update Bent 2 Details (add up to 6 new sheets for straddle footing details) (assume 7 shts) | 1 | 8 | 12 | 12 | 8 | | 8 | 30 | 60 | | 139 | $15,540.00 |
| 8.8 Update Bridge Layouts & Typ Sects to reflect column/shaft relocations & Bent 2 (13 shts) | 1 | 8 | 12 | 4 | | | 16 | 12 | 36 | | 89 | $9,980.00 |
| 8.9 Update Foundation Layout to reflect column/shaft relocations (1 sht) | 1 | 2 | 4 | 4 | | | 4 | 4 | 8 | | 27 | $3,270.00 |
| 8.10 Relocate abutment drilled shafts to miss utilities, update abut designs/details (4 shts) | 2 | 2 | 4 | 8 | | | 4 | 8 | 16 | | 44 | $5,220.00 |
| 8.11 Update 3-D models and prepare additional renderings | 2 | 2 | 16 | | | | | 24 | 16 | | 60 | $7,450.00 |
| | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 18 | 36 | 120 | 84 | 24 | 0 | 80 | 86 | 142 | 0 | 590 | |
| CONTRACT RATE PER HOUR | $200.00 | $165.00 | $155.00 | $145.00 | $120.00 | $105.00 | $95.00 | $120.00 | $85.00 | $60.00 | | |
| TOTAL LABOR COSTS | $3,600.00 | $5,940.00 | $18,600.00 | $12,180.00 | $2,880.00 | $0.00 | $7,600.00 | $10,320.00 | $12,080.00 | $0.00 | $73,200.00 | |
| *% DISTRIBUTION OF STAFFING* | *3.1%* | *6.1%* | *20.3%* | *14.2%* | *4.1%* | *0.0%* | *13.6%* | *14.6%* | *24.1%* | *0.0%* | *100%* | |
| **SUBTOTAL (Task 8)** | | | | | | | | | | | | **$73,200.00** |

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1)

**PRIME PROVIDER NAME:** P.E. Structural Consultants, Inc.
**Date:** 03/20/2019
**PROJECT NAME:** Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)

| Task 10 - PROJECT MANAGEMENT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.1 Project management for add'l scope (invoicing, budget tracking, progress reports) | 6 | | 16 | 12 | | | | | | 24 | 58 | $6,860.00 |
| 10.2 Facilitate/support/coordinate geotech effort | 1 | | 12 | 4 | | | | | | | 17 | $2,640.00 |
| 10.3 Facilitate/support/coordinate add'l Survey effort | 1 | | 12 | 4 | | | | | | | 17 | $2,640.00 |
| 10.4 Coordinate w/ County Utility Coordinator to address conflicts/changes, attend 1 meeting | 2 | | 12 | 8 | | | 4 | | | | 26 | $3,800.00 |
| 10.5 Coordinate w/ Geotech re: fndn rec's & design parameters for temp spec shoring | 1 | 2 | 12 | 4 | | | 4 | | | | 23 | $3,350.00 |
| 10.6 Coordinate design/permitting changes due to Atlas14 | 2 | 2 | 16 | 12 | | | 4 | | | | 36 | $5,330.00 |
| 10.7 Coordinate new left-turn lane into parking lot with Rdwy & Drainage | 2 | | 8 | 8 | | | | | | | 18 | $2,700.00 |
| 10.8 Coordinate with Team and Atkins re: tie-ins for Brushy Creek/Hairy Man | 4 | | 12 | 8 | | | 5 | | | | 29 | $4,330.00 |
| | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 19 | 4 | 100 | 60 | 0 | 0 | 17 | 0 | 0 | 24 | 224 | |
| CONTRACT RATE PER HOUR | $200.00 | $165.00 | $155.00 | $145.00 | $120.00 | $105.00 | $95.00 | $120.00 | $85.00 | $60.00 | | |
| TOTAL LABOR COSTS | $3,700.00 | $660.00 | $15,500.00 | $8,730.00 | $0.00 | $0.00 | $1,620.00 | $0.00 | $0.00 | $1,440.00 | $31,650.00 | |
| *% DISTRIBUTION OF STAFFING* | *8.3%* | *1.8%* | *44.7%* | *26.9%* | *0.0%* | *0.0%* | *7.6%* | *0.0%* | *0.0%* | *10.7%* | *100%* | |
| **SUBTOTAL (Task 10)** | | | | | | | | | | | | **$31,650.00** |

| LABOR SUMMARY | | | | | | | | | | TOTAL MH BY TASK | TOTAL COST BY TASK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task 5 - DRAINAGE | | | | | | | | | | 44 | $6,900.00 |
| Task 7 - MISCELLANEOUS SERVICES | | | | | | | | | | 310 | $38,000.00 |
| Task 8 - BRIDGE DESIGN | | | | | | | | | | 590 | $73,200.00 |
| Task 10 - PROJECT MANAGEMENT | | | | | | | | | | 224 | $31,650.00 |
| | | | | | | | | | | | |
| **SUBTOTAL LABOR EXPENSES** | | | | | | | | | | **1,168** | **$149,750.00** |

| OTHER DIRECT EXPENSES | UNIT | # OF UNITS | COST/UNIT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| n/a | | | | | | | | | | | $0.00 |
| | | | | | | | | | | | |
| **SUBTOTAL DIRECT EXPENSES** | | | | | | | | | | | **$0.00** |

| | |
|---|---|
| TOTAL LABOR COSTS | $149,750.00 |
| NON-SALARY (OTHER DIRECT EXPENSES) | $0.00 |
| **GRAND TOTAL** | **$149,750.00** |

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1)

**PRIME PROVIDER NAME: P.E. Structural Consultants, Inc.**
**Sub Provider Name: Kennedy Consulting, Inc.**
**Date: 03/20/2019**
**PROJECT NAME: Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)**

| TASK DESCRIPTION | Principal Engineer | Project Manager | Senior Prof 2 | Senior Prof 1 | Prof 2 / Sr Eng Tech | Prof 1 / Eng Tech | Admin / Clerical | | | Total hours | Cost per Line Item |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 4 - Roadway** | | | | | | | | | | | |
| 4.1 Incorporate drainage changes into roadway plans (P&P, Parking Lot plans) | | 4 | | | 16 | | | | | 20 | $3,168.00 |
| 4.2 Incorporate drainage changes into cross sections | | 4 | | | 16 | | | | | 20 | $3,168.00 |
| 4.3 Add loc's & notes onto P&P's for utility work (fill pipes, move/extend MH's), add to quants/est | | 2 | | 4 | 8 | | | | | 14 | $2,248.00 |
| 4.4 Incorporate turn lane into parking lot | | 4 | | | 8 | 10 | | | | 22 | $3,140.00 |
| 4.5 Tie-in Brushy Creek/Hairy Man project ends with Atkins project | | 8 | | 2 | 8 | 12 | | | | 30 | $4,574.00 |
| | | | | | | | | | | | |
| HOURS SUB-TOTALS | 0 | 22 | 0 | 6 | 56 | 22 | 0 | 0 | 0 | 106 | $16,298.00 |
| CONTRACT RATE PER HOUR | $220.00 | $208.00 | $192.00 | $172.00 | $146.00 | $114.00 | $68.00 | | | | |
| TOTAL LABOR COSTS | $0.00 | $4,576.00 | $0.00 | $1,032.00 | $8,152.00 | $2,538.00 | $0.00 | $0.00 | $0.00 | $16,298.00 | |
| *% DISTRIBUTION OF STAFFING* | *0.0%* | *20.7%* | *0.0%* | *5.7%* | *52.6%* | *21.0%* | *0.0%* | *0.0%* | *0.0%* | | |
| **SUBTOTAL (Task 4)** | | | | | | | | | | | **$16,298.00** |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 7 - Miscellaneous Services** | | | | | | | | | | | |
| 7.3 Revise TCP runaround design (HAL, Detour Layout, Detour Profile & Sections) | 1 | 8 | | 20 | 8 | 8 | | | | 45 | $7,404.00 |
| 7.4 Revise Sequence of Construction | | 4 | | 8 | | 8 | | | | 20 | $3,120.00 |
| 7.5 Revise TCP Layout Sheets to reflect new design | 1 | 8 | | 16 | 24 | 16 | | | | 65 | $9,964.00 |
| 7.6 Design temp pavement "ramp" for north end of Great Oaks to match proposed Oak Ridge | | 1 | | 8 | 4 | | | | | 13 | $2,168.00 |
| 7.7 Update construction schedule to reflect new sequencing | 1 | 2 | | 8 | 4 | | | | | 15 | $2,596.00 |
| 7.10 Update channel grading as needed per Atlas 14 changes to H&H | | 2 | | 8 | | 8 | | | | 18 | $2,750.00 |
| | | | | | | | | | | | |
| HOURS SUB-TOTALS | 3 | 25 | 0 | 68 | 40 | 40 | 0 | 0 | 0 | 176 | $28,002.00 |
| CONTRACT RATE PER HOUR | $220.00 | $208.00 | $192.00 | $172.00 | $146.00 | $114.00 | $68.00 | | | | |
| TOTAL LABOR COSTS | $660.00 | $5,250.00 | $0.00 | $11,696.00 | $5,840.00 | $4,556.00 | $0.00 | $0.00 | $0.00 | $28,002.00 | |
| *% DISTRIBUTION OF STAFFING* | *1.7%* | *14.3%* | *0.0%* | *38.6%* | *22.7%* | *22.7%* | *0.0%* | *0.0%* | *0.0%* | | |
| **SUBTOTAL (Task 7)** | | | | | | | | | | | **$28,002.00** |

| **LABOR SUMMARY** | | | | | | | | | **TOTAL MH BY TASK** | **TOTAL COST BY TASK** |
|---|---|---|---|---|---|---|---|---|---|---|
| Task 4 - Roadway | | | | | | | | | 106 | $16,298.00 |
| Task 7 - Miscellaneous Services | | | | | | | | | 176 | $28,002.00 |
| | | | | | | | | | | |
| **SUBTOTAL LABOR EXPENSES** | | | | | | | | | 282 | **$44,300.00** |

| **OTHER DIRECT EXPENSES** | **UNIT** | **# OF UNITS** | **COST/UNIT** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| n/a | | | | | | | | | | $0.00 |
| | | | | | | | | | | |
| **SUBTOTAL DIRECT EXPENSES** | | | | | | | | | | **$0.00** |

| | |
|---|---|
| TOTAL LABOR COSTS | $44,300.00 |
| NON-SALARY (OTHER DIRECT EXPENSES) | $0.00 |
| **GRAND TOTAL** | **$44,300.00** |

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1)

**PRIME PROVIDER NAME: P.E. Structural Consultants, Inc.**
**Sub Provider Name: AECOM**
**Date: 03/20/2019**
**PROJECT NAME: Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)**

| TASK DESCRIPTION | QA/QC | CAD Tech | Senior CAD Tech | Admin/ Clerical | Cultural Resources Lead | Field Tech/ Investigator | Principal Engineer | Senior PM/ Senior Engineer | Senior Transportation Engineer | Project Engineer (PE) | Design Engineer | Engineer-in-Training | Total hours | Cost per Line Item |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 5 - DRAINAGE** | | | | | | | | | | | | | | |
| 5.1 Preliminary Review of NOAA Atlas 14 and written summary of impacts | | | | | | | 4 | | 8 | | | 8 | 20 | $2,648.00 |
| 5.2 Update Brushy Creek H&H Models with Atlas 14 Rainfall data | | | | | | | | | | | | | | |
| a. Update Hydrologic HEC-HMS model | 2 | | | | | | | | 8 | | | 16 | 26 | $2,756.00 |
| b. Update Hydraulic HEC-RAS model | 2 | | | | | | | | 6 | | | 12 | 20 | $2,130.00 |
| c. Update Floodplain maps | 2 | 6 | 2 | | | | | | 4 | | | 16 | 30 | $2,874.00 |
| d. Update Drainage Report | 2 | 4 | 2 | | | | | | 8 | | | 16 | 32 | $3,312.00 |
| 5.3 Update Scour Analysis, Design, and Documentation | | | | | | | | | | | | | | |
| a. Update Scour Analysis calculations | 1 | | | | | | 2 | | 6 | | | 12 | 21 | $2,396.00 |
| b. Update riprap design, quantities and summaries | 1 | 8 | 2 | | | | 4 | | 12 | | 4 | 16 | 47 | $5,342.00 |
| c. Update Scour Analysis Documentation | 1 | | | | | | 2 | | 6 | | | 8 | 17 | $2,076.00 |
| 5.4 Additional Storm Drain Design | | | | | | | | | | | | | | |
| a. Update Hydrologic Calculations | 2 | | | | | | 2 | | 4 | | 4 | 8 | 20 | $2,308.00 |
| b. Re-design Storm Drain System using GeoPak Drainage | 2 | | | | | | 1 | | 4 | | 8 | 40 | 55 | $5,084.00 |
| c. Locate and Re-size Storm Drain Inlets | 1 | | | | | | 1 | | 4 | | 8 | 20 | 34 | $3,358.00 |
| d. Optimize Re-design Based on Hydraulic Grade Line (HGL) | 1 | | | | | | 1 | | 4 | | 8 | 16 | 30 | $3,038.00 |
| e. Identify Locations Requiring Trench Excavation Protection | 1 | | | | | | | | 2 | | 12 | 8 | 23 | $2,308.00 |
| 5.5 Additional Water Quality Design | | | | | | | | | | | | | | |
| a. Update Water Quality Design and BMP calculations/devices | 2 | | | | | | 2 | | 4 | | 9 | 16 | 32 | $3,360.00 |
| 5.6 Additional Drainage Ditch Design | | | | | | | | | | | | | | |
| a. Revise ditch capacities, Re-design Dmg Ditches; update P&P/calc shts | 1 | 4 | | | | | | | 2 | | 8 | 16 | 31 | $2,884.00 |
| 5.7 Additional Pond Design | | | | | | | | | | | | | | |
| a. Review Additional Project Survey of Pond | | | | | | | | | 2 | | 4 | | 6 | $718.00 |
| b. Update Hydrologic Calculations per Atlas 14 | 2 | | | | | | | | 2 | | 4 | 10 | 18 | $1,770.00 |
| 5.8 Update Cross-Drainage Structure Designs | | | | | | | | | | | | | | |
| a. Update Design of Cross-drainage Structures per Atlas 14 | 2 | 4 | 2 | | | | 1 | | 2 | | 8 | 16 | 35 | $3,414.00 |
| b. Update grading, culvert layouts, H&H calc shts for cross-dmg str's | 2 | 4 | 2 | | | | 1 | | 2 | | 16 | 40 | 67 | $6,122.00 |
| | | | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 27 | 30 | 10 | 0 | 0 | 0 | 21 | 0 | 90 | 0 | 93 | 294 | 565 | $57,898.00 |
| CONTRACT RATE PER HOUR | $126.00 | $87.00 | $104.00 | $82.00 | $112.00 | $73.00 | $196.00 | $135.00 | $153.00 | $94.00 | $103.00 | $80.00 | | |
| TOTAL LABOR COSTS | $3,402.00 | $2,610.00 | $1,040.00 | $0.00 | $0.00 | $0.00 | $4,116.00 | $0.00 | $13,770.00 | $0.00 | $9,578.00 | $23,484.00 | $58,000.00 | |
| **SUBTOTAL (Task 5)** | | | | | | | | | | | | | | **$58,000.00** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 9 - ENVIRONMENTAL PERMITTING SERVICES** | | | | | | | | | | | | | | |
| n/a | | | | | | | | | | | | | 0 | $0.00 |
| | | | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0.00 |
| CONTRACT RATE PER HOUR | $126.00 | $87.00 | $104.00 | $82.00 | $112.00 | $73.00 | $196.00 | $135.00 | $153.00 | $94.00 | $103.00 | $80.00 | | |
| TOTAL LABOR COSTS | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | |
| **SUBTOTAL (Task 9)** | | | | | | | | | | | | | | **$0.00** |

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1)

**PRIME PROVIDER NAME: P.E. Structural Consultants, Inc.**
**Sub Provider Name: AECOM**
**Date: 03/20/2019**
**PROJECT NAME: Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)**

| LABOR SUMMARY | | | | | | | | | | | | TOTAL MH BY TASK | TOTAL COST BY TASK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Task 5 - DRAINAGE | | | | | | | | | | | | 565 | $58,000.00 |
| Task 9 - ENVIRONMENTAL PERMITTING SERVICES | | | | | | | | | | | | 0 | $0.00 |
| | | | | | | | | | | | | | |
| **SUBTOTAL LABOR EXPENSES** | | | | | | | | | | | | 565 | **$58,000.00** |

| OTHER DIRECT EXPENSES | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n/a | | | | | | | | | | | | | $0.00 |
| | | | | | | | | | | | | | |
| **SUBTOTAL DIRECT EXPENSES** | | | | | | | | | | | | | **$0.00** |

| | |
|---|---|
| TOTAL COSTS | $58,000.00 |
| NON-SALARY (OTHER DIRECT EXPENSES) | $0.00 |
| **GRAND TOTAL** | **$58,000.00** |

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1

**PRIME PROVIDER NAME: P.E. Structural Consultants, Inc.**
**Sub Provider Name: Raba Kistner Consultants, Inc.**
**Date: 03/20/2019**
**PROJECT NAME: Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)**

| TASK DESCRIPTION | Principal Engineer | Senior Engineer | Project Manager | Project Engineer | Eingineer In Training | Senior CAD Tech | CAD Tech | Admin/ Clerical | Geologist (log/staking) | Environmental Scientist | Senior Technician | Total hours | Cost per Line Item |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 2 - GEOTECHNICAL SERVICES AND PAVEMENT DESIGN** | | | | | | | | | | | | | |
| 2.1 Add'l borings/documentation to further delineate limestone surface elev | | | 4 | 2 | 6 | | | | 16 | | | 28 | $3,270.00 |
| 2.2 Add'l borings to provide supplemental fndn rec's for Bent 2 shaft/ftg | | | 4 | 8 | 12 | | | | 24 | | | 48 | $5,530.00 |
| | | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 0 | 0 | 8 | 10 | 18 | 0 | 0 | 0 | 40 | 0 | 0 | 76 | |
| CONTRACT RATE PER HOUR | $200.00 | $200.00 | $175.00 | $135.00 | $90.00 | $95.00 | $80.00 | $55.00 | $110.00 | $105.00 | $60.00 | | |
| TOTAL LABOR COSTS | $0.00 | $0.00 | $1,400.00 | $1,350.00 | $1,620.00 | $0.00 | $0.00 | $0.00 | $4,430.00 | $0.00 | $0.00 | $8,800.00 | |
| *% DISTRIBUTION OF STAFFING* | *0.0%* | *0.0%* | *10.5%* | *13.1%* | *23.6%* | *0.0%* | *0.0%* | *0.0%* | *52.8%* | *0.0%* | *0.0%* | *100%* | |
| **SUBTOTAL (Task 2)** | | | | | | | | | | | | | $8,800.00 |

| **LABOR SUMMARY** | TOTAL MH BY TASK | TOTAL COST BY TASK |
|---|---|---|
| Task 2 - GEOTECHNICAL SERVICES AND PAVEMENT DESIGN | 76 | $8,800.00 |
| | | |
| **SUBTOTAL LABOR EXPENSES** | 76 | $8,800.00 |

| **OTHER DIRECT EXPENSES** | UNIT | # OF UNITS | COST/UNIT | ODE COST BY ITEM |
|---|---|---|---|---|
| **Drilling Operations** | | | | |
| Mobilization of Drill Rig (Min Charge) | mile | 69 | $4.00 | $280.00 |
| Augering (soil) (7 borings to Avg depth of 10-15 ft) | l.f. | 105 | $16.00 | $1,680.00 |
| Augering (soft rock) (7 borings auger into limestone 1 ft) | l.f. | 7 | $19.00 | $140.00 |
| Nx Core Drilling - (Soft Rock) | l.f | 0 | $32.00 | $0.00 |
| Nx Core Drilling - (Hard Rock) | l.f. | 0 | $42.00 | $0.00 |
| Wet Rotary (2 Borings to 70 ft for Bent 2) | l.f. | 140 | $21.00 | $2,940.00 |
| SPT Field Penetrations | each | | $22.00 | $0.00 |
| TCP Field Penetrations | each | 35 | $26.000 | $910.00 |
| Grout Backfill (Backfill the upper 10 ft of each boring) - 9 borings total | l.f. | 90 | $3.250 | $300.00 |
| Driller Standby | hour | 1 | $225.000 | $230.00 |
| Traffic Control (at cost) | day | 2 | $950.000 | $1,900.00 |
| **Staking/Logging/Coordination** | | | | |
| Logger Truck Charge | each | 4 | $57.20 | $230.00 |
| **Laboratory Tests** | | | | |
| Atterberg Limits | each | 2 | $83.00 | $170.00 |
| Moisture Content (at 5 ft intervals) | each | 10 | $13.00 | $130.00 |
| Minus 200-mesh Sieve | each | 2 | $56.00 | $120.00 |
| Unconfined Compression (Soil) | each | 0 | $43.00 | $0.00 |
| Unconfined Compression (Rock) | each | 0 | $51.00 | $0.00 |
| Hydrometer | each | 0 | $273.00 | $0.00 |
| Sieve Analysis washed through No. 40 | each | 0 | $56.00 | $0.00 |
| Sieve Analysis washed through No. 200 | each | 2 | $83.000 | $170.00 |
| Soil Box Resistivity | each | 0 | $254.000 | $0.00 |
| CBR(M/D with 3 Specimen) | each | 0 | $791.000 | $0.00 |
| **SUBTOTAL DIRECT EXPENSES** | | | | $9,200.00 |

| | |
|---|---|
| TOTAL LABOR COSTS | $8,800.00 |
| NON-SALARY (OTHER DIRECT EXPENSES) | $9,200.00 |
| **GRAND TOTAL** | **$18,000.00** |

## ATTACHMENT D - FEE SCHEDULE FOR SUPPLEMENTAL WORK AUTHORIZATION NO. 3 (SWA3 TO WA1)

**PRIME PROVIDER NAME: P.E. Structural Consultants, Inc.**
**Sub Provider Name: Cobb Fendley & Associates, Inc.**
**Date: 03/20/2019**
**PROJECT NAME: Supplemental No. 3 - Great Oaks Bridge at Brushy Creek (SWA3)**

| TASK DESCRIPTION | Project Manager | Senior Engineer | Project Engineer | Techician I | Technician II | Technician III | LSLS | RPLS | 3-Man Crew | 2-Man Crew | 1-Man Crew | Total hours | Cost per Line Item |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task 3 - FIELD SURVEYING** | | | | | | | | | | | | | |
| 3.1 Locate 9 Bore Holes along Hairy Man Rd & Gr Oaks Blvd | | | 2 | | | 8 | | | | 12 | | 22 | $2,900.00 |
| 3.2 Topogr & Design Survey of Pond at CR174 and Gr Oaks Blvd | | | 4 | | | 32 | | | 20 | | | 56 | $7,600.00 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 0 | 0 | 6 | 0 | 0 | 40 | 0 | 0 | 20 | 12 | 0 | 78 | |
| CONTRACT RATE PER HOUR | $210.00 | $260.00 | $125.00 | $90.00 | $110.00 | $120.00 | $225.00 | $160.00 | $160.00 | $140.00 | $120.00 | | |
| TOTAL LABOR COSTS | $0.00 | $0.00 | $750.00 | $0.00 | $0.00 | $4,800.00 | $0.00 | $0.00 | $3,200.00 | $1,680.00 | $0.00 | $10,500.00 | |
| *% DISTRIBUTION OF STAFFING* | *0.0%* | *0.0%* | *7.6%* | *0.0%* | *0.0%* | *51.0%* | *0.0%* | *0.0%* | *26.0%* | *15.4%* | *0.0%* | *100%* | |
| **SUBTOTAL (Task 3)** | | | | | | | | | | | | | **$10,500.00** |
| **Task 6 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION** | | | | | | | | | | | | | |
| n/a | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CONTRACT RATE PER HOUR | $210.00 | $260.00 | $125.00 | $90.00 | $110.00 | $120.00 | $225.00 | $160.00 | $160.00 | $140.00 | $120.00 | | |
| TOTAL LABOR COSTS | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | |
| *% DISTRIBUTION OF STAFFING* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0%* | |
| **SUBTOTAL (Task 6)** | | | | | | | | | | | | | **$0.00** |
| **Task 7 - MISCELLANEOUS SERVICES** | | | | | | | | | | | | | |
| n/a | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| HOURS SUB-TOTALS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CONTRACT RATE PER HOUR | $210.00 | $260.00 | $125.00 | $90.00 | $110.00 | $120.00 | $225.00 | $160.00 | $160.00 | $140.00 | $120.00 | | |
| TOTAL LABOR COSTS | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | |
| *% DISTRIBUTION OF STAFFING* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0%* | |
| **SUBTOTAL (Task 7)** | | | | | | | | | | | | | **$0.00** |

| LABOR SUMMARY | TOTAL MH BY TASK | TOTAL COST BY TASK |
|---|---|---|
| Task 3 - FIELD SURVEYING | 78 | $10,500.00 |
| Task 6 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION | 0 | $0.00 |
| Task 7 - MISCELLANEOUS SERVICES | 0 | $0.00 |
| | | |
| **SUBTOTAL LABOR EXPENSES** | 78 | $10,500.00 |

| OTHER DIRECT EXPENSES | UNIT | # OF UNITS | COST/UNIT | |
|---|---|---|---|---|
| n/a | | | | $0.00 |
| | | | | |
| **SUBTOTAL DIRECT EXPENSES** | | | | **$0.00** |

| | |
|---|---|
| TOTAL COSTS | $10,500.00 |
| NON-SALARY (OTHER DIRECT EXPENSES) | $0.00 |
| **GRAND TOTAL** | **$10,500.00** |