

**SUPPLEMENTAL AGREEMENT NO. 1
TO
ENGINEERING SERVICES AGREEMENT OF
OCTOBER 26, 2021
FOR
FORT BEND COUNTY TOLL ROAD AUTHORITY**

This Supplemental Agreement is signed in multiple counterparts to be effective on the date approved by the Fort Bend County Commissioners Court, and modifies the ENGINEERING SERVICES AGREEMENT dated October 26, 2021 (the "Agreement") between the Fort Bend County Toll Road Authority (FBCTRA), a Texas Local Government Corporation (the "Authority"), and DE Corp., (the "Engineer").

The Agreement is hereby modified as follows:

1. The first sentence in Section 1 is replaced with the following sentence:

"The Engineer shall render professional services to FBCTRA related to the Project as defined in the Scope of Services in Attachment A and Attachment A-1.

2. Section 2.a is replaced with the following paragraphs:

"The Maximum Compensation under this Agreement is \$3,483,131.00. The amount paid under this Agreement may not exceed the Maximum Compensation without an approved supplemental agreement.

Compensation for the performance of services within the Scope of Services described in Attachment A will be paid as a lump sum amount not to exceed \$3,302,351.00, as shown in Attachment B.

Compensation for the performance of services within the Scope of Services described in Attachment A-1 will be paid as a lump sum amount not to exceed \$180,780.00, as shown in Attachment B-1.

Progress payments for work detailed in Attachment A and Attachment A-1 will be made when the Engineer has attained a level of completion equal to or greater than agreed upon milestones of completion in the reasonable opinion of the FBCTRA. The Engineer shall furnish satisfactory documentation of such work (e.g. timesheets, billing rates, classifications, invoices, etc.) as may be required by FBCTRA."

This Supplemental Agreement does not alter, modify, or otherwise change any part of the Agreement, except as specifically stated in this Supplemental Agreement.

Supplemental Agreement No.1
To Agreement of October 26, 2021

IN WITNESS WHEREOF, this Supplemental Agreement is hereby executed as of 11/21/22.

FORT BEND COUNTY TOLL ROAD AUTHORITY,
a Texas local government corporation

By: Bobbie Tallas

Name: Bobbie Tallas

Title: Vice Chairman

DE Corp
ENGINEER

By: Nick Bokaie

Name: Nick Bokaie

Title: Chief Operating Officer

EFFECTIVE DATE

THIS AGREEMENT IS EFFECTIVE ON THE DATE IT IS APPROVED BY THE FORT BEND COUNTY COMMISSIONERS COURT, AND IF NOT SO APPROVED SHALL BE NULL AND VOID.

DATE OF COMMISSIONERS COURT APPROVAL: _____

AGENDA ITEM NO.: _____

ATTACHMENT A-1

SERVICES TO BE PROVIDED BY THE ENGINEER

The Engineer shall provide engineering services required for the preparation of plans, specifications, and estimates (PS&E) and related documents, for the Fort Bend County Toll Road Authority (FBCTRA) Phase 3 Westpark Tollway Extension from west of Texas Heritage Parkway to west of Spring Green / FM 723 (Sta 183+00 to Sta 382+00) in Fort Bend County.

The services in Supplemental No. 1 include the following:

- Addition of new proposed Prefab Pedestrian Bridge over Flewellen Creek
- Addition of Main Lane toll gantry near Sta 310+00
- FAA coordination related to the illumination poles at Covey Trails Airport
- Removal of Underpass Lighting under Flewellen Creek Mainlane Bridge.
- Creation of new HEC-RAS model for the Flewellen Creek crossing.
- Channel restoration at Flewellen Creek.
- Addition of Westbound to Eastbound U-turn at Charger Way/Bois D' Arc Lane.
- Additional Surveying at Charger Way/Bois D' Arc Lane.
- Provision for additional surveying at Flewellen Creek to capture existing condition at final design stage. *(This work may not be required and will not commence unless approved by FBCTRA.)*

FUNCTION CODE 145(145, 164) – MANAGING CONTRACTED/DONATED PE

PROJECT MANAGEMENT AND ADMINISTRATION

The Engineer, in association with the Project Manager shall be responsible for directing and coordinating all activities associated with services in Supplemental No. 1 to comply with policies and procedures, and to deliver that work on time.

Project Management and Coordination. The Engineer shall coordinate all subconsultant activity associated with services in Supplemental No. 1 to include quality of and consistency of plans and administration of the invoices and monthly progress reports.

FUNCTION CODE 160(150) - ROADWAY DESIGN

DESIGN SURVEYS AND CONSTRUCTION SURVEYS

150.1 Design Survey at Charger Way/Bois D' Arc Lane

The Engineer's Surveyor shall provide linear topographic survey from Station 165+00 to Sta 175+00, including the intersection of Westpark Tollway and Charger Way/Bois D' Arc Lane. Deliverable will be updated Microstation DGN and TIN files.

November 2022

150.2 Design Survey at Flewellen Creek

The Engineer's Surveyor shall provide topographic survey along Flewellen Creek to include Cross Sections at 50'-100' intervals from Top of Bank to Top of Bank, plus 25' on each side with detailed Erosion Areas. Limits will begin 100' North of Existing North right-of-way line of Westpark Tollway and proceed south to 100' South of Existing South right-of-way line of Westpark Tollway. Deliverable will be updated Microstation DGN and TIN files.

FUNCTION CODE 160(161) - ROADWAY DESIGN

DRAINAGE

161.2. Hydrologic Studies.

The Engineer shall provide the following services **related to the Flewellen Creek bridge crossing**:

1. Review report and models for Master Drainage Plan for Fort Bend County Texas by Half Associates, Inc., Jones Creek Watershed Study by Costello, Inc., and 3,199 Acre Cross Creek Ranch by BGE (original 2014 and 2019 update)
2. The hydrologic parameters from the Costello report will be used as the basis for the modeling effort. However, the routing reaches within the Costello model that represent the detention ponds will not be used, with the exception of the Tamarron routing reach, which will be used as it exists within the Costello Model. No changes will be made to the HEC-HMS basins parameters from the provided Costello model

161.3. Complex Hydraulic Design and Documentation.

The Engineer shall provide the following services **related to the Flewellen Creek bridge crossing**:

1. Review additional provided models for Flewellen Creek completed by Costello, BGE RPS, and Half Associates.
2. Create Existing Condition Unsteady HEC-RAS model for Flewellen Creek from Cross Creek Bend Lane to McKinnon Rd. This will include the area as it is today, with the exception of the erosion within Flewellen Creek at the proposed roadways. The existing condition model will include incorporating the detention for Cross Creek Ranch Development into the HEC-RAS model as it was modeled in the 2019 Cross Creek Ranch model by BGE along with the existing bridges upstream of Westpark. The existing Westpark will be incorporated based on survey data since the existing frontage roads are not included in any of the reviewed models.

3. The Existing Condition Unsteady HEC-RAS model will be modified to include the proposed roadway crossing, and railroad bridge. No modifications will be made to the inflow hydrographs used as the flow impact analysis from the proposed roadway are not part of this analysis. Any impact to flows or water surface elevations will be quantified.
4. A letter report will be created to detail the creation of the existing condition model to document the source of the inputs for the HEC-RAS model.

161.6. Scour Analysis.

The Engineer shall provide the following services related to the Flewellen Creek mainlane bridge crossing:

1. Perform scour analysis of the new proposed Prefab Pedestrian Bridge (in addition to the mainlane bridge).

161.7. Plans, Specifications and Estimates (PS&E) Development for Hydraulics.

The Engineer shall provide the following services related to the Flewellen Creek channel:

1. Prepare Channel Plan & Profile plan sheets with the intent to restore Flewellen Creek within the right-of-way to pre-frontage road project conditions.
2. Prepare Channel Details to support the channel design as necessary, such as riprap and toe wall details, outfall tie-in, grading or other geometry details, etc.

FUNCTION CODE 160(163) - ROADWAY DESIGN

ROADWAY DESIGN

163.1 Roadway Design.

The Engineer shall provide roadway plan and profile drawings for a Westbound to Eastbound U-turn at Charger Way/Bois D' Arc Lane.

MISCELLANEOUS (ROADWAY)

163.2 Illumination.

The Engineer shall coordinate with the FAA to determine the height of the lighting structures which involves. Should the height require adjustment, the Engineer will perform a photometric analysis to determine the lighting spacing to ensure sufficient illumination along the mainlines near the airport approach corridor.

Underpass Lighting under Flewellen Creek Mainlane Bridge is removed from the project.

FUNCTION CODE 160(165) – ROADWAY DESIGN

Traffic Management Systems (Permanent)

The Engineer shall prepare design and plans for proposed main lane toll gantry at approx. Station 310+50 to include:

- TOLL GANTRY CONDUIT LAYOUT (1 SHEET)
- IN PAVEMENT CONDUIT LAYOUT (1 SHEET)
- ELECTRICAL POWER RISER DIAGRAM (1 SHEET)
- TOLL GANTRY LIGHTNING / GROUNDING PLAN (1 SHEET)
- TOLL GANTRY OVERHEAD CONDUIT LAYOUT (1 SHEET)
- TOLL GANTRY UNDERGROUND CONDUIT LAYOUT (1 SHEET)
- SITE LAYOUT (1 SHEET)
- TXDOT STANDARDS - ELECTRICAL DETAILS (12 SHEETS)
- SUMMARY OF TOLLING QUANTITIES (1 SHEET)
- TRUSS SPAN ELEVATION (1 SHEET)
- TOLL GANTRY BRIDGE COLUMNS (2 SHEETS)
- TOLL GANTRY TRUSS SUPPORT DETAILS (2 SHEETS)
- TOLL GANTRY TRUSS DETAILS (1 SHEET)
- PERFORATED PANEL DETAILS (1 SHEET)
- TOLL GANTRY AESTHETIC DETAILS (1 SHEET)
- TXDOT STANDARD - OSBC (1 SHEET)

FUNCTION CODE 160(170) – ROADWAY DESIGN

BRIDGE DESIGN

170.1. Bridge Layout. The Engineer shall prepare a bridge layout plan sheet for the new Prefab Pedestrian Bridge over Flewellen Creek.

The Engineer shall comply with all relevant sections of the latest edition of *TxDOT's LRFD Bridge Design Manual, Bridge Project Development Manual, Bridge Detailing Guide, and AASHTO LRFD Bridge Design Specifications and respective checklists*. Each bridge layout sheet must include bridge typical sections, structural dimensions, abutment and bent locations, superstructure and substructure types. The Engineer shall locate and plot all soil borings and utilities, show proposed retaining walls, and, for staged construction, indicate limits of existing bridge for removal and reconstruction.

170.2. Bridge Detail Summary. The Engineer shall prepare total bridge quantities, estimates, and summary sheets for the new railroad bridge over Flewellen Creek.

170.3. Bridge Structural Details. The Engineer shall prepare each structural design and develop detailed structural drawings of all required details in compliance with above-listed manuals and guidelines. The Engineer shall assemble and complete all applicable TxDOT Standard Details sheets.

Additionally, the Engineer shall:

- Perform calculations for design of bridge abutments.
- Perform necessary design to identify prefab pedestrian bridge across Flewellen Creek.
- Perform calculations to determine elevations of bridge substructure and super structure elements.
- Prepare necessary foundation details and plan sheets.
- Prepare plan sheets for abutment design.
- Prepare plan sheets for additional abutment details.
- Prepare special provisions and special specifications in accordance to the above-listed manuals and guidelines.

ATTACHMENT B-1
SUPPLEMENTAL NO. 1 - FEE PROPOSAL SUMMARY
Westpark Tollway Extension Phase 3
Texas Heritage Parkway to FM 723/Spring Green (3.77 Miles)

Description of Work Task	Consultant	Proposal
<i>Final PS&E Engineering and Management</i>		
Segment 1 PS&E Design	DEC	\$20,755.00
Segment 2 PS&E Design	CobbFendley	\$106,508.00
Illumination	CobbFendley	\$1,528.00
Toll Gantry Design	CobbFendley	\$37,584.00
<i>Additional Services</i>		
Survey	Weisser	\$14,405.00
Total Management & Engineering Fees		\$180,780.00