

**SUPPLEMENTAL WORK AUTHORIZATION NO. 4**  
**TO**  
**WORK AUTHORIZATION NO. 2**

**WILLIAMSON COUNTY LONG RANGE TRANSPORTATION CORRIDOR**  
**PROJECT:**  
**CORRIDOR H – SAM BASS ROAD**

This Supplemental Work Authorization No. 4 to Work Authorization No. 2 is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated March 13, 2017 (“Contract”) and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and K FRIESE + ASSOCIATES, INC. (the "Engineer").

WHEREAS, the County and the Engineer executed Work Authorization No. 2 dated effective February 19, 2019 (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” (must be attached).
- II. The Work Authorization shall terminate on June 30, 2022. 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” (must be attached).
- III. The maximum amount payable for services under the Work Authorization is hereby increased from \$898,755.93 to \$926,555.93. The revised Fee Schedule is attached hereto as Attachment “D” (must be attached).

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

Thomas M. Owens, P.E.  
Printed Name

Executive Vice President  
Title

29 SEP 21  
Date

**COUNTY:**

By: \_\_\_\_\_  
Signature

Bill Gravell, Jr.  
Printed Name

County Judge  
Title

\_\_\_\_\_  
Date

**LIST OF ATTACHMENTS**

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 TRANSPORTATION CORRIDOR H – SAM BASS**  
**ROAD**

**PROJECT DESCRIPTION**

This Supplemental Work Authorization adds the following items to the previously contracted scope of work.

Given the vicinity of the proposed roadway improvements to the existing toe of the Upper Brushy Creek Dam 13A, which is owned by the Upper Brushy Creek WCID (District), the District has requested that the slope stability of the dam embankment be evaluated per TAC 299.16.

1. Upper Brushy Creek Dam 13A Stability Analysis

a. Task 1 – Research of Existing Dam Information and Development of Parameters

Review existing plans and engineering documents for Dam 13A and develop the following:

i. Cross-section geometry for the dam section at project Station 276+00 (near Dam Station 40+00) from the 90% plans. Cross-section geometry will be based on 1960 as-built drawings, plans from the 2005 dam modernization, and details from the proposed roadway improvements.

ii. Material types and engineering properties (seepage and strength) for the dam embankment and underlying soil and rock. Soil type and seepage and strength properties will be estimated based on material descriptions from the 1960 as-built drawings, the 2004 NRCS Soil Mechanic Report, plans from the 2005 dam modernization, and Kleinfelder's 2011 Geotechnical Study Report. With limited soil testing information near Dam Station 40+00, material properties will be estimated based on lab testing data from other areas of the embankment. Shear strength parameters for the materials encountered will be determined based on shear strength data used in previous investigations, published correlations, and engineering judgment.

b. Task 2 – Engineering Analysis

A. Perform seepage and slope stability analysis for steady-state seepage condition at one roadway cut cross-section (near Sta. 276+00) using following water levels:

1. Normal pool
2. Top of the auxiliary spillway
3. Top of dam (top of parapet wall)

Analyses will be performed for the current/existing condition and for the proposed condition. The analysis will also account for a temporary construction condition to be evaluated at normal pool and top of auxiliary spillway water levels. Analyses will only be for the downstream slope of the dam since the upstream slope will not be impacted by the proposed road improvements. Evaluation of the local stability of the wall is not included in this scope. Evaluation of the excavation stability for the storm sewer or detention pond walls are not included in this scope.

B. For the critical water condition identified in Section A above, perform seepage and stability analysis for a “during-construction” case considering the temporary excavation for the storm sewer.

C. Perform seepage analyses for a section including the detention pond (near Station 275+00) and perform checks on seepage exit gradients.

D. Review the Ultimate Schematic Roll Plots (dated 6/20/2019) and consider the ultimate build-out. Identify any concerns or future activities that should be restricted/require re-permitting (i.e., do not add ditches along the dam in future phases of build out, underground utility installations, etc).

E. In the interest of time, the previous tasks A-D can be performed using the Interim Review 90% Submittal drawings, dated August 16, 2021. Once updated, FNI will review the updated plans to confirm no changes to the grade, planned storm sewer system or shared use path (SUP) have been made from the previous plans that would impact the seepage and stability analysis.

c. Task 3 – Memorandum

A. Prepare a Geotechnical Memorandum that documents the following:

- i. Discussion of developed embankment cross-section and assumptions made based on existing data.
- ii. Discussion of subsurface conditions and soil properties developed from existing data.
- iii. Seepage and slope stability analysis for steady-state seepage condition at normal pool and top-of-wall water levels for current/existing conditions, for the proposed changed condition, for the temporary condition, and at the detention pond.
- iv. Discussion of proposed ultimate build-out.

B. Submit a draft Geotechnical Memorandum to the County, the District, and TCEQ for review. Revise Geotechnical Memorandum based on comments, if needed, and submit final Geotechnical Memorandum to the County, the District, and TCEQ.

#### DELIVERABLES

- Draft Geotechnical Memorandum
- Final Geotechnical Memorandum

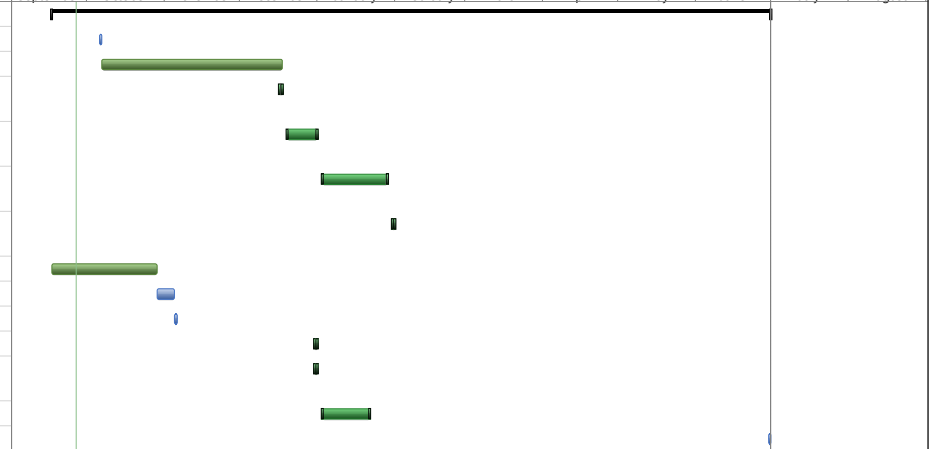
#### Exclusions

The following additional services are not included in the Basic Services described above and will require a supplemental work authorization and additional compensation:

- A. Field Exploration
- B. Laboratory Testing

**WILLIAMSON COUNTY  
TRANSPORTATION CORRIDOR H  
SWA#2 to WA#2 ATTACHMENT C - WORK SCHEDULE**

ID	Task Name	Duration	Start	Finish	Predecessors	2022													
						September	October	November	December	January	February	March	April	May	June	July	August		
1	<b>Corridor H (Sam Bass Road) -SWA #3</b>	<b>202 days</b>	<b>Fri 9/17/21</b>	<b>Thu 6/30/22</b>															
2	Notice to Proceed (NTP)	1 day	Wed 10/6/21	Wed 10/6/21															
3	Dam Stability Analysis	50 days	Thu 10/7/21	Fri 12/17/21	2														
4	Dam Stability - Submit Draft Geotechnical Memorandum	1 day	Fri 12/17/21	Fri 12/17/21	3FF														
5	Dam Stability - County/GEC, UBWCID, TCEQ Review	10 days	Mon 12/20/21	Fri 12/31/21	4														
6	Dam Stability - Prepare Final Geotechnical Memorandum	20 days	Mon 1/3/22	Fri 1/28/22	5														
7	Dam Stability - Submit Final Geotechnical Memorandum	1 day	Mon 1/31/22	Mon 1/31/22	6														
8	100% Roadway Design	30 days	Fri 9/17/21	Thu 10/28/21															
9	100% QA/QC	5 days	Fri 10/29/21	Thu 11/4/21	8														
10	100% Preliminary PS&E Submittal	1 day	Fri 11/5/21	Fri 11/5/21	9														
11	100% Ross Road UTM Waterline Design (CORR)	1 day	Fri 12/31/21	Fri 12/31/21															
12	100% Utility Relocation Plans Complete (by others)	1 day	Fri 12/31/21	Fri 12/31/21															
13	100% Final (Sealed) PS&E Submittal	15 days	Mon 1/3/22	Fri 1/21/22	12,11														
14	<b>Work Authorization Termination Date</b>	<b>1 day</b>	<b>Thu 6/30/22</b>	<b>Thu 6/30/22</b>															



Attachment D - Fee Schedule  
 Transportation Corridor H  
 K Friese Associates, Inc.

TASK	FNI	Total Labor Cost
<b>I. Upper Brushy Creek Dam 13A Stability Analysis</b>	\$ 27,800.00	\$ 27,800.00
<b>LABOR COST:</b>	<b>\$ 27,800.00</b>	<b>\$ 27,800.00</b>
<b>TOTAL DIRECT EXPENSES COST:</b>	<b>\$ -</b>	<b>\$ -</b>
<b>TOTAL PROJECT COST:</b>	<b>\$ 27,800.00</b>	<b>\$ 27,800.00</b>