

WORK AUTHORIZATION

WORK AUTHORIZATION NO. 1

PROJECT: Engineering Design Services for the Repair of San Gabriel Ranch Road

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated April 7, 2016 and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and Freese and Nichols, Inc. (the "Engineer").

Part 1. The Engineer will provide the following Engineering Services set forth in Attachment "B" of this Work Authorization.

Part 2. The maximum amount payable for services under this Work Authorization without modification is \$265,143.00.

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 27, 2016. 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 12th day of April, 2016.

ENGINEER:

Freese and Nichols, Inc.

COUNTY:

Williamson County, Texas

By:



Signature

VICTOR M. VÁSQUEZ

Printed Name

Principal

Title

By:



Signature

DAN A. GATTI

Printed Name

County Judge

Title

LIST OF ATTACHMENTS

Attachment A - Services to be Provided by County

Attachment B - Services to be Provided by Engineer

Attachment C - Work Schedule

Attachment D - Fee Schedule

Attachment A - Services to be Provided by County

COUNTY shall perform the following in a timely manner so as not to delay the services of FNI:

1. Obtain Right-Of-Entry or perform public notifications as needed to conduct survey services, geotechnical investigation, and site visits.
2. Right-of-way and easement document preparation
3. Public Involvement Coordination
4. Onsite resident representation during construction
5. Quality control testing during construction

Attachment B - Services to be Provided by Engineer

A. DESIGN PHASE

Evaluation and Schematic Design

1. Perform survey
 - a. Roadway profile and select cross sections of embankment
 - b. Flow line elevations for existing pipes and channel
 - c. Pond cross sections to determine storage capacity
 - d. 1-ft topo of the spillway approach channel
 - e. 1-ft topo of the river channel from the roadway to 100-feet downstream
2. Perform geotechnical Investigation
 - a. Perform four borings
 - b. Provide geotechnical witness logging of soil strata and characterizations
 - c. Perform geological reconnaissance of soil and bedrock exposures in the Lackey Creek channel between the spillway and its confluence with the North Fork San Gabriel River
 - d. Perform basic soil tests (Atterberg limits, minus 200, moisture contents) and penetrometer tests as appropriate
 - e. Perform preliminary evaluation of dam embankment stability of existing dam in accordance with TCEQ Dam Safety Guidelines for steady-state and rapid drawdown loading conditions.
3. Perform hydrologic and hydraulic (H&H) analyses in accordance with TCEQ Dam Safety Guidelines and City of Austin Drainage Criteria Manual.
 - a. Evaluate drainage area and runoff characteristics for existing and ultimate development
 - b. Develop stage-storage-discharge rating curves to represent existing dam conditions
 - c. Develop peak reservoir stage, storage and discharge for 2 to 100-year recurrence intervals
 - d. Develop peak reservoir stage, storage and discharge for 75% PMF
4. Develop schematic design for three alternative repair concepts as follows:
 - a. Removing embankment at approximate location of original Lackey Creek stream channel and installation of bridge crossing Lackey Creek while keeping same roadway alignment.
 - b. Leaving dam hydraulics and roadway alignment unchanged, replace the principal spillway corrugated metal pipe, re-laying the existing concrete pipe, and providing channel and slope armoring at outfall of the present emergency spillway concrete pipes.
 - c. Removing the existing emergency spillway concrete pipes and installation of an emergency spillway structure to pass flows under the roadway and into a drop structure at the outfall, including armoring the outfall area as needed, replacing the principal spillway corrugated metal pipe. Evaluate and address seepage control and erosion along the embankment interface. Keep roadway elevations unchanged.
5. Evaluate the following for each alternative:
 - a. Peak reservoir stage, storage and discharge for 2-100-year recurrence intervals
 - b. Peak reservoir stage, storage and discharge for 75% PMF
 - c. Increased water levels in Lackey Creek from San Gabriel Ranch Road to confluence with San Gabriel River.
 - d. Opinion of probable construction costs
 - e. Permit requirements
6. Provide documentation of proposed alternatives
 - a. Document geotechnical results in Technical Memorandum
 - b. Document H&H results in Technical Memorandum
 - c. Summarize results of alternative analysis in Summary Report
 - d. Attend up to two (2) meetings with Williamson County staff to present results
 - e. Attend one (1) public meeting to inform area residents of concepts

7. Deliverables
 - a. Geotechnical Results Technical Memorandum
 - b. Hydrology and Hydraulics Technical Memorandum
 - c. Alternative Summary Report
 - d. Posters for public meeting

Design

1. Environmental Permitting
 - a. Develop permitting strategy for selected alternative.
 - b. Site visit by Environmental Scientist
 - c. Coordination with Texas Historical Commission (THC).
 - d. Develop and submit a pre-construction notification (PCN) to USACE.
2. Prepare conceptual set of sketches for either alternative 4.b or 4.c based upon County's selection. The County has indicated previously that the bridge alternative is unlikely to be selected.
 - a. Provide proposed typical section and cross sections
 - b. Provide proposed plan and profile sketches
 - c. Provide proposed drainage feature sketches
 - d. Provide table of contents for technical specifications
3. Prepare 90% set of construction documents
 - a. Finalize
 1. Roadway grades and cross sections
 2. Grading plans
 3. Roadway details
 4. Detailing of all drainage structures
 5. Environmental Controls
 - b. Provide complete set of draft specifications
 - c. Provide opinion of probable construction cost
 - d. Submit plans and specifications to TCEQ Dam Safety
4. Develop final plans and specifications for bidding that incorporate County's latest comments
5. Submit Issued for Bid plans and specifications to County and TCEQ Dam Safety
6. Update OPCC for Issued for Bid set
7. Deliverables
 - a. Conceptual sketches, specification outline
 - b. 90% Plans, Specifications and Opinion of Probable Construction Cost
 - c. Issued-For-Bid Plans, Specifications and Opinion of Probable Construction Cost

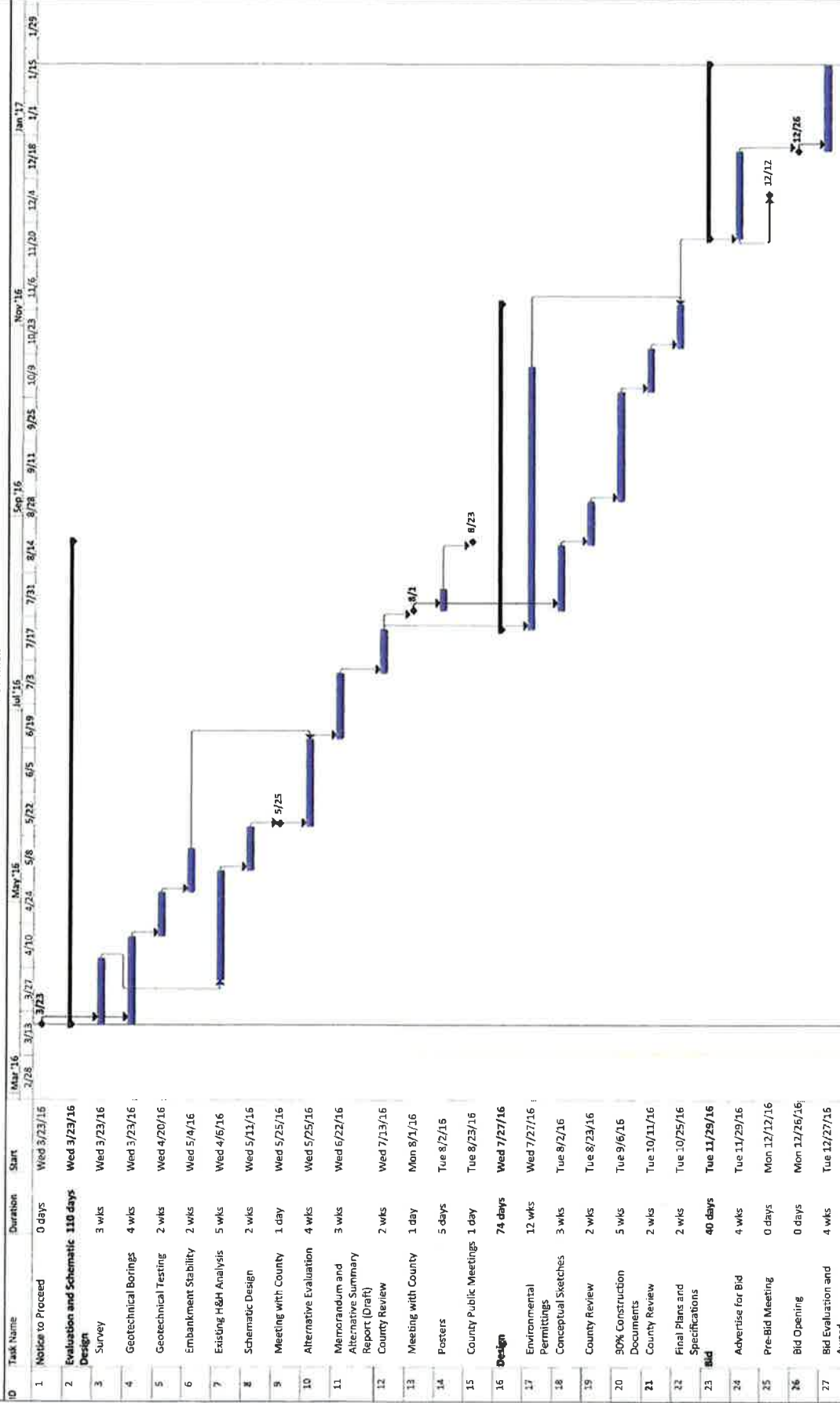
Bid Phase

1. Attend Pre-Bid Meeting
2. Prepare any necessary addenda
3. Attend Bid Opening
4. Assist County with bid evaluations

Attachment C - Work Schedule

Attached behind this Page

San Gabriel Ranch Road Design Phase Freese and Nichols



Project: San Gabriel River Ranch

Date: Mon 3/14/16

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Deadline

Progress

Attachment D - Fee Schedule

Attached behind this Page

[illegible]

Total Basic Services Items

Williamson County San Gabriel Ranch Road - Design Phase 14-481-16 Detailed Cost Breakdown									
Phase	Task	Subcontractants	Gorondona	Hot					Total Sub Effort
Study	1	Survey							3
	2	Geotechnical Investigation	9,440	9,660					10,304
		Project submittal and other coordination							3
		Site Visit							3
		Field geology and boring logging log production							3
Study	3	Hydrology and water resources analysis							3
		Hydrology and water resources analysis							3
		Hydrology and water resources analysis							3
		Hydrology and water resources analysis							3
		Hydrology and water resources analysis							3
Study	4	Develop Alternative Repair Concept							3
		Remove Embankment and Add Bridge							3
		Leave Hydraulic Unchanged, Replace Culverts							3
		Upgrade Emergency Easement							3
		Upgrade Emergency Easement							3
Study	5	Alternative Repair Evaluation							3
		2 to 100-year, 75% PMF Results							3
		Develop Possible Costs							3
		Evaluate permit requirements							3
		Evaluate permit requirements							3
Study	6	Documentation and Mapping							3
		Geotechnical Technical Memorandum							3
		Hydrology Technical Memorandum							3
		Summary Report							3
		Design Report							3
Design	1	Environmental Permitting							3
		Develop permit strategy							3
		Develop permit strategy							3
		Develop permit strategy							3
		Develop permit strategy							3
Design	2	Conceptual Sketches							3
		Sketches							3
		Table of Contents - Technical Specifications							3
		Table of Contents - Technical Specifications							3
		Table of Contents - Technical Specifications							3
Design	3	30% Plans and Specifications							3
		Plans							3
		Specifications							3
		Specifications							3
		Specifications							3
Design	4	Final Plans and Specifications							3
		Final Plans and Specifications							3
		Final Plans and Specifications							3
		Final Plans and Specifications							3
		Final Plans and Specifications							3
Bid	1	Bid Phase							3
		Bid Phase							3
		Bid Phase							3
		Bid Phase							3
		Bid Phase							3
Total Basic Services Subcontractors Cost			9,440	9,660					3
Total Basic Services Subcontractors Effort			10,304	10,304					3

Williamson County
San Gabriel Ranch Road - Design Phase
14-481-16
Detailed Cost Breakdown

Project Fee Summary			
Basic	\$	265,143	
Special	\$	-	
Total Project	\$	265,143	