WORK AUTHORIZATION

WORK AUTHORIZATION NO. 1 PROJECT: Engineering Design Services for the Repair of San Gabriel Ranch Road

- 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 \$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 <u>December 27, 2016</u>. 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	_, 20/6.
ENGINEER:	COUNTY:
Freese and Nichols, Inc.	Williamson County, Texas
By: Thit graphing	Ву:
Signature /	Signature
Victor M. VASQUEZ	VAN A GATTI
Printed Name	Printed Name
Principal	County July-
Title	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-I 00-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

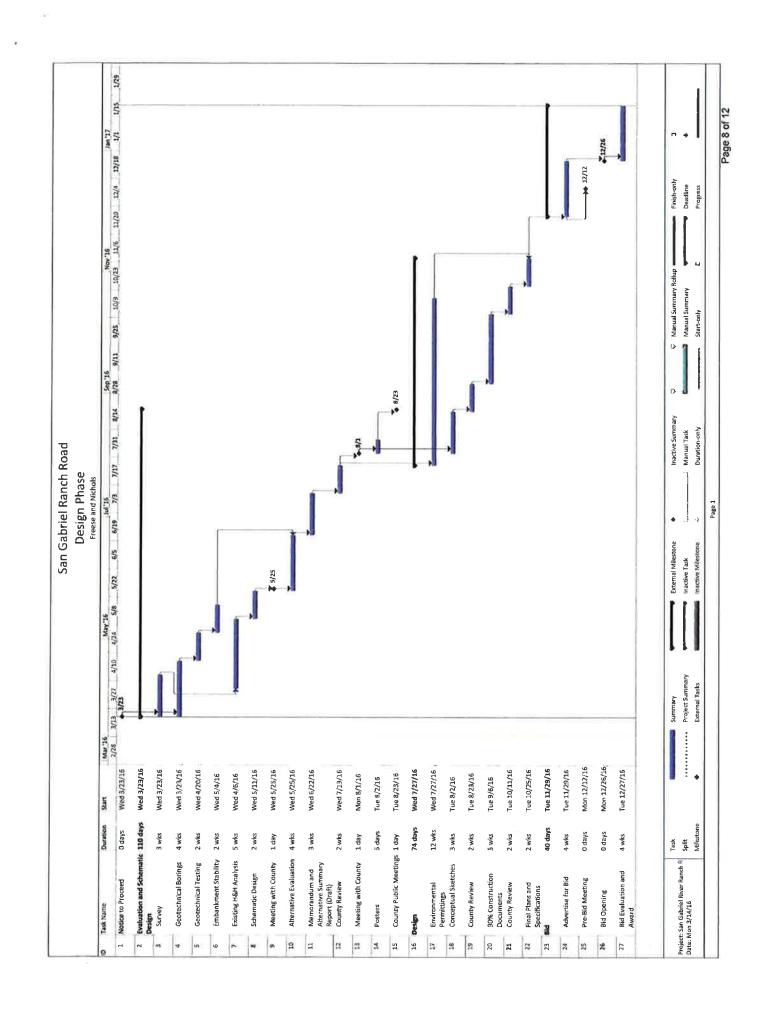
- 1. Environmental Permitting
 - a. Develop permitting strategy for selected alternative.
 - b. Site visit by Environmental Scientist
 - c. Coordination with Texas Historical Commission (THC).
 - d. Develop and submit a pre-construction notification (PCN) to USACE.
- 2. Prepare conceptual set of sketches 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. 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



Attachment D - Fee Schedule

Attached behind this Page

Purray Contray Cont	Hourty Bill Rate 130000 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2	1	Detailed Co.	Detailed Cost Breakdown Sale Serv	San Sances	-				H		Total Labor	d d d d d d d d d d d d d d d d d d d	Special Total Project	38 3
Prompty Programming in the controlled in the co	8 3					2137.00	S Breadown	Services Services	1 1							o year		265
Para Control of the c	8 3					00 7513		Services Spent Test						3	0	Concept Tribute		
Parenty Controlled in three tigation Fig. 100 Fig. 10	§ 1					2137.00		Printers !				1			_	Total Evhance		
Principal at the segment of control of the control of control of the control of control	<u>, </u>					\$137.00			Ī	City Instrument Congres 2	On language			Total Hours		acuad Expense	Total Sub Effort	Total Effort
Part 20, 1991 TO Conference of the condition of conference of the condition of conference of the condition o			a www w	e jaken maaja c	৪৬ টিজনের লেনে ই		\$148.00	\$92.00			198.00			-	_	Effort		
Project or analytical and delia consistent and are an are also year. See yea			n eyes e	we for the first to	৪০ টাজনের লেনে ই					*					1 365 1	20	10,384	\$ 11,790
Fig. 10 periods part borney bogging, byg produced (before) produced to the periods of the period			n 2000 o	. αυβαν	8 · (2000 - 1000 - 3		2	2			1			11	2:00 3	ż	3	2
Opposition of the control of the con			n nom	_w ← →	in Bone wan 3									0	240	10.5		2
Supper statistics and interprets are inferent Preference of the control of the co			n non e	jacken anana a	(2)0,0/4) (M/M/M 2		Ī	,						12	286	111		169
Politicality (Med II callippe) Beleavy Consideron ED Total of Reality (Med II callippe)			Major in	w c w w w c	(SI 60,00 00 00 00 00 00 00 00 00 00 00 00 00	ž								92	2511 5	2		3
Page Detainments Figing Conditions BD Finish of Flowards Finish of Flo	B		M016 10	ம்.⇔ ம்.லம் d	প্রভাগের ক্রেন্ড ই									-				
Extraction of the control of the con	e!		elekt	w. ≠ .00,00 to .0	uon orain I	2								2	4554	X.		\$ 4,839
Prof. Electronic Control of Electronic Contr	1		MWW W	- 10/30/10 (d	N.W. (WOLD) \$	N.								9	6330	Ş		
Develop Alternative Repair Concepts Renner Estimative and Add Biolog Renner Estimative and Add Biolog Renner Estimative and Add Biolog Renner Add Renner Adders Renner Add Renner Renner Renner Adders Renner	e:		MON N	;e0[e0]e0 (d	erele \$	D 09								2 62		2 5		
Device Statemann Paper Coccepts Innered Editorial Paper Coccepts Innered Editorial Paper Coccepts Innered Paper Coccepts Innered Paper Coccepts Device Device Paper Coccepts Device Device Paper Coccepts Device Paper Device Devi	ĕ		ester je	; m m m	ल्लाल इ				1					*				
Name to Enterprise and An Act Office of Lana Hydrate Chromopol, Paparse Enterprise Spiking. Alternative Regard Evolution of Alternative Spiking. Alternative Regard Evolution of Alternative Spiking. Descriptor Program Control Spiking. Control Program Control Memoratum. Control Program Control Memoratum. Control Program Control Memoratum. Alternative Regard Control Memoratum. Control Program Control Memoratum. Control Program Control Memoratum. Alternative Memoratum. Control Program Control Memoratum. Control Program Control Memoratum. Control Program Control Memoratum. Control Program Control Memoratum. Side Vid. Control Memoratum. Control Program Control Specifications (State of Control Memoratum.) Control Program Control Specifications (State of Control Memoratum.)	e.		merica ica	10 10 10 10	reala 3				ļ					-				
Oppose formation of Colorador American Science of Colorador Marianto Cortes Colorador Marianto Colorador Oppose of Colorador O			Y164 (4	φ[<i>α</i> ς ε	ales 2									Z I	9009	27.2		6369
Programme Residence of the second sec					. 2		1	1	1		-	1	1	R	7,070	100		1,40
Alter California (1700-1904) For Early Electronia (1700-1904) For			~	a	*										1			
2 to 700 part, "This Date founds for the found for t					7									-				
December 1 Control of			2			15								40	6,752 5	266		7,006
Contains permit (regardinates) Constitution and Bendings Constitution and Bendings Constitution (Secretaria Internation Constitution (Secretaria Internation Constitution (Secretaria Internation Constitution (Secretaria) Secretaria (Secretaria)				***	*	(0								z	4 006 \$	200		4 280
Constitution and illustration of Constitution and International Internat		H		8	1	-								R	2500 3	170		-
Cooperious I retrainal Memoradum Summary Rescribe Memoradum Concept Summary Rescribe Memoradum Concept Summary Summary Summary Poort Title Control Memoradum Summary Poort Title Control Memoradum Summary Poort Title Control Memoradum Summary Poort Title Summa												-		-				us
Half I before the Wenterstein Seminary Report Townson Present Townson Present Amend two remembers are also per absences Amend two remembers and Carety Service systems of Carety Service systems of Carety Service systems of Carety Service systems of Carety Connection of Carety Connection of Carety This Connection of Carety Take of Carety of Carety Take of Carety of Services Take of Services Ta			,		9	12				40		1		90	4,835	83		
Contract Floors: James per Jahrensen Alterd four commission with Carety Alterd four permittings with Carety Alterd four permittings Contractor		l		23	R	22								9	8 802 8	505		0.010
Almost from treatings with Complete Almost from public streeting Consistential Personal Streeting Consistential Co				10 10	.,	10				n (4	-	-		44	0.400	140		4
Alterd on public shreeting Devices promitting Service of promitting strategy THC Conclusion Conceptual Statemen Talks of Comment Strategy Talks of Services Strategy Talks of Services Strategy Talks of Services Strategy			,			0								3	6.027	100		2
Environmental Permitting Consist permitting strange San Vot The Constitution Consequent Statemer San Vot Title of Content Title of	1			10	es.	,		2						×	0.664 \$	187		
Consisty parameters for the control of the control			-		1								-	-				
Sea vice The Condition Consequent Statemen Talks of Comman Promotion 18th of Comman Promotions	0			8										2	5 5542	272		6.516
TITE Constitution Develop PCIA Conceptual Startine Santons Table of Contents - Textines Specification INY House and Specifications				22	-	100								127	2138 4	136		\$ 2
Overlop PCN Conceptual Statether Sections Table of Contacts - Technical Specification 1989, Plans and Specifications	2			8										24	\$ 356 ×	200		0297
Conceptual Statisher Sentors Table of Contacts - Technical Specification 1979. Plans and Specifications	9			18	R									110	20,00	435		8
Sentions Table of Centeria - Technical Specification WY, Visus and Specifications			1		1													
Table of Certains - Technical Specification 90% Plans and Specifications	ľ			10	155	4				52	91			100		757		14,370
NO's Plans and Specifications	15			g	c	49								×	5,633	239		1 650
The last of the la						-	1									I		
Man	18			R	22	8				65	20		1	191	1 29.95	1,815		2
Speciforium	35	8		7		H								18	14572	988		15,261
0900	•			16	- 55	7			7					t t	\$200	Q.		9
The of Ohme and Lancillo of the		-				15				8		1		2	10770	776		200
					-									3				2
Mid Phase					۲.									9	215 \$	\$		
Pre-Cid Meeting	9 5	0 0	1	4 0	1	700				U				K S	9 090 9	A M		
Bid Opening	9													10	215 5	110		\$ 2270
Brd Evaluation	**			ŵ!										9	712	3 .		
TO THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS		8		1						/				10				
Total Besic Services Hours	Г	l	25	111	185	334		10	11	155	22			1,362 3	230,500 3	12,244	1 20,959	1 245,143

1	Task Expenses				7	Maria Maria Maria Maria Maria	- 70						
1. 1. 1. 1. 1. 1. 1. 1.	Task Expenses	1				Detailed Co.	out Granindon						
1 Section Control		_				Finding (each)	Lg Format - Bond - B&W	Cecay Mylar		Lg Format - Gassyfayer -	Lg Format - VinydAdheare	Other	Total Exp Effort
Project interprotection 1	- 0	*							1				95
Control State Control Stat	11												, E
Section of Control o	Field geology And bonny lagging, by production		88									0.00	SE G
Participation Participatio	Geologic grafile and cross sections, Stope stability and seepage analysis												出海
1 1 1 1 1 1 1 1 1 1													
Trigger Content Trigger Co	Xyde Personelin	8		1						1			\$\$2 **
The Profession of the Profession The	2-100 of Results	72											9 2
Control Cont		15											201 .
Variety Proteins University Variety Variety Variety Variety Variety Variety Vari	1	æ											
Automatic Report Section Automatic Report Se	Leave Mydraulica Unchanged, Replace Culverta		8										38
Statement Right Contact Live Statement		×											Q.
Control March	~												
Contains person requirements 20 1 1 1 1 1 1 1 1 1	Crowing Proteste Cests	7 %			-		1						200
4 Countrication and Materials 20 Countricat	Evaluate periorit requirements	8											170
Control Cont													
Control Page	HLM Technical Manufactum	R St											200
Admittation with Carefront	Summary Report Develop Figures 2 cheets per alternative												215
Exceptionist Permitty 1 1 1 1 1 1 1 1 1	Attant the meetings with County Attant one bubbe meeting		200									150	1 307
Environmental Parintings 1													
Contract positional paralogy Contract positional paralogy													
Tric Consistence Tric Consis	Develop committee strategy	J.	9										22.
Converge PCIT 1100	THC Coordination	П											305
Secretarial Statistics Secretarial Statist	Develop PCK	110											\$ 808
Their Connects - Teamon Speciations	~												
3 Vor. Plans and development 101 500 500 5 50 5 10	Table of Centerts - Technical Specifications	8 14											E 2
2			-(30)										
Control Cont	6			-									
Control Cont	Speciations	5 4		8	8		3						1 1,615
Figure Prince And Specifications Fig. Spin	OPCC	0	1										\$ 400
Sel Phase Sel		3		300	S	No.	8						[S]
Fre-bit Matering	8d Phus	U											10
Elex General 10 60 11 12 12 12 12 12 12 12 12 12 12 12 12			8										Z Z
			8										1118
Total Basic Services (sens. 1,342 1,300 1,000 10 170	Total Basic Services Items	П	1,340	1,000	1,000			ľ				556	Ŋ,

	Option Cont Distriction
Subscriptibility Control Principality Control Princ	
2 Generational Investigation Project sets adjusted in the consistence in The Consistence in Consist	
2 Conceptions in the signature of Project substitution	
7 4 W W - M A 4 -	
4 20 20 - 10 10 4 -	
4 20 4 - 10 10 4 -	
4 8 8 - 8 6 7	
4 20 0 - 00 1	
* * * - * * -	
[
**	
N 25 25 3 17 N 26 26 16 16 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	
型 克里 排 排 海 高	
33 H N R R B B M 22 H M 22 2 2 2 2 3 2 3 3 3 3 3 4 4 5 4 5 5 5 5 5 5 5 5 5 5 5	
3	
[
N N N N N N N N N N	
1 3 3 4 4 6 6 3 4 5 3 5 5 6 6 6 6 6 6 6 6 6	
1 3 3 3 6 6 6 3 3 3 3 3 3 5 6 6 6 6 6 6 6 	
排放 副 经国金 统 第三 医 次 自然 经 经报 化 期 第三:	
# # # = = # # = 5 # # # # # # # # # = + = :	
7 Accorda	
4 DIG ENTANDO	
	A STATE OF THE PARTY OF THE PAR
Total Basic Services Subconstitution Coart 3 9,440 3 9,550 3 . 1 . 1 . 1 . 1	