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

WILLIAMSON COUNTY ROAD AND BRIDGE PROJECT: On Call Geotechnical and Lab Testing Services

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 February 18, 2015 ("Contract") and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and Raba Kistner Consultants, Inc. (the "Engineer").

WHEREAS, the County and the Engineer executed Work Authorization No. 1 dated effective February 5, 2016 (the "Work Authorization");

WHEREAS, pursuant to 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 maximum amount payable for services under the Work Authorization is hereby increased from $40,000 to $65,000. The revised Work Schedule is attached hereto as Attachment "D".

County believes it has sufficient funds currently available and authorized for expenditure to finance the costs of this Supplemental Work Authorization. Engineer understands and agrees that County's payment of amounts under this Supplemental 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 the Supplemental Work Authorization. It is further understood and agreed by Engineer that County shall have the right to terminate this Supplemental Work Authorization 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.

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

Gabriel Orvelas, Jr.
Printed Name

Senior Vice President
Title

1/30/2018
Date

COUNTY:

By: _____
Signature

Dan Gattis
Printed Name

County Judge
Title

02-08-2018
Date

LIST OF ATTACHMENTS

Attachment D - Fee Schedule

See Attached

Exhibit D – Rate Sheet

Additional Charges:	
Sulfate Testing	$75.00 Per Test
Technician Overtime	$70.00 Per Hour
Certified Welding Inspector	$95.00 Per Hour
Certified Welding Inspector Overtime	$133.00 Per Hour
Non Destructive Testing (Ultrasound)	$104.50 Per Hour
NDT Testing Overtime (Ultrasound)	$146.30 Per Hour
Geotechnical Technician Overtime	$84.00 Per Hour
Asphaltic Plant Observation	$84.00 Per Hour
One Man Coring Overtime	$84.00 Per Hour
Two Man Coring Overtime	$131.60 Per Hour

TITLE	HOURLY Rate
Principal	$ 200.00
Senior Engineer/Consultant	$ 200.00
Project Manager	$ 175.00
Project Engineer	$ 135.00
Engineer	$ 100.00
Engineer in Training	$ 90.00
Geotechnical Technician	$ 60.00
CADD Operator	$ 80.00
Clerical	$ 55.00
Geologist	$ 110.00
Environmental Scientist	$ 105.00
Lead Technician	$ 60.00
CMT Technician	$ 50.00
Archaeologist	$ 110.00
GIS	$ 90.00

DIRECT EXPENSES

Copies 8 1/2 x 11, 11 x 17	$0.16/page
Mylar 11 x 17	$2.10/page
Schematic Plots	$1.58/sq ft

-1 Auger Drilling (Does not include logging)		
soil	per ft	$16.00
soft rock	per ft	$19.00
-2 Standard Wet Rotary (Does not include logging)	per ft	$21.00
-3 Nx Rock Core (Does not include logging)		
Soft rock (marl, shale)	per ft	$32.00
Hard rock (limestone, sandstone)	per ft	$42.00
-4 Non-conventional drilling (barge drilling or unusual time consuming drilling i.e. through bridge)	per hr	$279.30
-5 Field Logging Services		
Geotechnical Technician	per hr	$60.00
Geologists	per hr	$110.00
Engineer in Training	per hr	$90.00
-6 Field Coordination		
Field Engineer	per hr	$100.00
Flagman	per hr	$65.00
-7 Mobilization		
Mobilization or truck-mounted rig, rill crew and support	per mile	$4.00
Field logger trip charge	per mile	$1.00
Mobilization non-standard equipment (4x4 all terrain rig)		At cost
Barge mobilization and rental		At cost
-8 Sampling		
Standard Penetration Test (ASTM D1586)	per test	$22.00
Shelby Tube (ASTM D1587)	per test	$22.00
Texas Cone Penetrometer Test (THD, Tex-132-E)	per test	$26.00
-9 Other Expenses/Charges		
Standby Time	per hr	$225.00
Mileage - non-drilling equipment	per mile	$1.00
Grout backfill	per ft	$3.25
Dozer/clearing cost		At cost
Logger truck charge	per day	$55.00
Standard pavement coring	each	$75.00
Concrete/AC patch	each	$64.00
Traffic control - signs, barricades		At cost
All other outside expenses		At cost

FIELD AND LABORATORY UNIT FEES

ASPHALTIC CONCRETE

REFERENCE	FIELD SERVICES	
ASTM D 75	Sampling Raw Materials of Composite Mix Technician Time	$ 50.00/hr
Asphalt Institute Manual	Asphaltic Plant Observation - To Verify Aggregate Size and Quality, Batch Weights and Temperature Technician Time	60.00/hr
Asphalt Institute Manual	Asphaltic Site Observation - To Observe Preparation, Laydown Operations, Asphaltic Concrete Temperatures, Mat Thickness and Mat Density Determination Technician Time	60.00/hr
ASTM D 2950	Nuclear Density Test with Inspection	16.00/ea
	Nuclear Density Test	25.00/ea

REFERENCE	LABORATORY SERVICES	
ASTM D 2172; TxDOT, TEX-210-F	Extraction Test, Bitumen Content and Aggregate Sieve Analysis of Asphaltic Concrete	$ 190.00/ea
ASTM D 2172; TxDOT, TEX-210-F	Extraction Test, Bitumen Content Only	131.00/ea
	Asphaltic Concrete Extraction; Bitumen Content and Aggregates; Sieve Analysis of Asphaltic Concrete; Molding Specimens (Hveem or Marshall); Laboratory Density (Molded Specimen); Stability Test (Hveem); and Maximum Theoretical Specific Gravity (Rice Gravity)	459.00/set
Hveem, TxDOT, TEX-206-F; Marshall, ASTM D 1559	Molding Specimens Hveem or Marshall	60.00/set
	Superpave (2 per set)	124.00/set
TxDOT, TEX-207-F; ASTM D 2726	Laboratory Density Test	60.00/set
	a) Molded Specimen	60.00/set
	b) Asphalt Core	51.00/ea
	c) Superpave (2 per set)	72.00/set
Hveem, TxDOT, TEX-208-F; Marshall, ASTM D 1559	Stability Test Marshall	58.00/set
	Hveem	73.00/set
Asphalt Institute Manual and TxDOT; Mix Designs	Corp of Engineers or FAA	1,914.00/ea
	TxDOT Quality Control/Quality Assurance	1,914.00/ea
	TxDOT CMHB	2,719.00/ea
	TxDOT Calibration Mix and Pans	320.00/ea
	TxDOT Black Base Design, Item 345	1,433.00/ea

ASPHALTIC CONCRETE, continued

REFERENCE	LABORATORY SERVICES		
TxDOT, TEX-200-F; ASTM C 136	Sieve Analysis of Aggregate	$	39.00/ea
TxDOT, TEX-203-F; ASTM D 2419	Sand Equivalent Test		83.00/ea
AASHTO TP 33	Fine Aggregate Angularity		49.00/ea
ASTM D 4791-95	Flat and Elongated Particle		49.00/ea
TxDOT, TEX-201-F; ASTM C 127	Specific Gravity (Coarse or Fine Aggregate)		39.00/ea
TxDOT, TEX-201-F; ASTM C 127	Absorption (Coarse or Fine Aggregate) (Includes Specific Gravity)		60.00/ea
TxDOT, TEX-411-A; ASTM C 88	Sulfate Soundness (Time and Test)		
	Preparation Time		51.00/hr
	a) Magnesium - 5 Cycle		484.00/ea
	b) Sodium - 5 Cycle		431.00/ea
ASTM C 131; ASTM C 535	Los Angeles Abrasion Test (Time and Test)		
	Los Angeles Abrasion Test (Small or Large Coarse Aggregate)		187.00/ea
Asphalt Inst. SP-2 TxDOT, Item 3066 AASHTO PP 28-95	Superpave TM Mix Design (Includes Aggregate, Specific Gravity and Sieve Analysis) (Does Not Include TSR)		5,913.00/ea
TxDOT, TEX-227-F; AASHTO T 209; ASTM D 2041	Maximum Theoretical Specific Gravity (Rice Gravity)		90.00/ea
TxDOT, TEX-226-F; AASHTO T 283; ASTM D 4867	Moisture Sensitivity Test (Tensile Strength Ratio Test)		
	with Freeze/Thaw		513.00/ea
	without Freeze/Thaw		401.00/ea
TxDOT, Item 3157	Cold Processed – Recycled Paving Material (RPM)		
	Mixture Design		As Requested
	Mixture Verification (QC) Strength, Stability (Hveem, Modified Marshall)		755.00/set
TxDOT, TEX-126-E (Modified)	Molding and Strength		367.00/set
TxDOT, TEX-208-F (Modified)	Molding and Hveem		139.00/set
ASTM D 1559	Molding and Marshall		131.00/set
TxDOT, TEX-103-E	Molded Moisture Content		13.00/ea

CEMENT TREATED BASE

REFERENCE	FIELD SERVICES	
PCA	Sampling Raw Materials for Mix Verification	
	Technician Time	$ 60.00/hr
	Sampling Contractor Processed Material	
	Technician Time	50.00/hr

REFERENCE	LABORATORY SERVICES	
PCA	Molding Controlled Processed Material	$ 69.00/ea
PCA	Unconfined Compressive Strength Testing	31.00/ea
ASTM D 559; ASTM D 560	Durability (2 Specimens per Set) (Percent Loss in 12 Cycles) Wet Dry/Freeze Thaw	589.00/set
	Mix Design	
PCA; TxDOT, TEX-120-E; ASTM D 558	Mix Design - Cement Treated Base (Does Not Include Durability)	$ 1,171.00/ea

CONCRETE

REFERENCE	FIELD SERVICES	
ASTM C 31; ASTM C 172; ASTM C 143	Sampling Concrete to Conduct Slump Test, Measure Concrete Temperature, Cast Test Specimen and Transport Test Specimen to Laboratory Next Day	
	Technician Time	$ 50.00/hr
	Pick-Up of Test Specimen	50.00/hr
	Standby Time	50.00/hr
ASTM C 39; ASTM C 617	Cylinder Compressive Strength Testing and Reporting (In Conjunction with Sampling)	
	a) 6x12 or 4x8 - Normal Weight or Lightweight Structural (Minimum of 4)	17.00/ea
	b) 3x6 - Lightweight Insulating Cellular (Minimum of 6 - Includes Two Dry Densities)	25.00/ea
	c) "Hold" Cylinder (Additional Charge)	11.00/ea
	d) "Strip" Cylinder (Additional Charge)	13.00/ea
	e) Compressive Strength - 2x2 Cubes	24.00/ea
	f) Dry Density - Concrete Cylinder	44.00/ea
ASTM C 78	Flexural Strength Testing and Reporting (In Conjunction with Sampling Beams)	49.00/ea
	Air Content (In Conjunction with Sampling)	
ASTM C 231	a) Pressure	32.00/ea
ASTM C 173	b) Volumetric	38.00/ea
AASHTO T 199	c) Chase	17.00/ea
ASTM C 138	Unit Weight	29.00/ea
ASTM C 143	Additional Slump Test	24.00/ea

CONCRETE, continued

ACI 311; ACI 304	Concrete Plant Observation - To Observe and Record Aggregate Types, Batch Weights, Concrete Consistency and Mixing Time Technician Time	50.00/hr
ACI 311; ACI 304	Concrete Site Observation - To Record the Consistency of Concrete, Verify and Adjust Slump within Project Specifications and Sample for Test Specimens Technician Time	50.00/hr

REFERENCE	LABORATORY SERVICES	
ACI 211.1	Hardrock Concrete Mix Design Calculations and Proportioning to Include Six Confirmatory Cylinders (Physical Properties Not Included)	$ 301.00/ea
ACI 211.1 (303.R)	Architectural Mix Design	330.00/ea
ACI 211.2	Lightweight Structural Mix Design	310.00/ea
ASTM C 270	Masonry Mortar Mix Design Including Six Cubes and Water Retention (Physical Properties Not Included)	$ 330.00/ea
ASTM C 1202	Chloride Ion Permeability	282.00/set
ASTM C 39	Cylinders Compressive Strength Testing and Reporting F.O.B. Cylinders to Our Laboratory	28.00/ea
ASTM C 496	Splitting Tensile Strength of Concrete Cylinders Tensile Test	44.00/ea
ASTM C 666	Freeze-Thaw Test	364.00/set
ASTM C 469	Determination of Young's Modulus of Elasticity (Time, Test and Set-Up)	83.00/ea
ASTM C 803	Windsor Probe (Includes Surface Preparation)	85.00/hr
ASTM C 805	Schmidt Rebound Number	85.00/hr

CONCRETE AGGREGATES

REFERENCE	FIELD SERVICES	
ASTM D 75; TxDOT, TEX-400-A	Sampling Concrete Aggregates Technician Time	$ 50.00/hr

REFERENCE	LABORATORY SERVICES	
ASTM C 566	Moisture Content	$ 13.00/ea
ASTM C 29; TxDOT, TEX-404-A	Unit Weight (Coarse or Fine) a) Loose b) Rodded	33.00/ea 33.00/ea

ASTM C 127; ASTM C 128; TxDOT, TEX-201-F	Specific Gravity (Coarse or Fine)	39.00/ea
ASTM C 123	Lightweight Particles (Plus Cost of Materials)	58.00/test
	Absorption	
ASTM C 127; ASTM C 128; TxDOT, TEX-201-F	a) Normal Weight Aggregate (Coarse or Fine)	25.00/ea
	b) Lightweight Aggregate (Coarse)	28.00/ea
ASTM C 136; TxDOT, TEX-401-A	Sieve Analysis (Dry) for ASTM C 33 Specifications	
	a) Coarse, Per Sample	44.00/ea
	b) Fine, Per Sample	52.00/ea
ASTM C 117; TxDOT, TEX-406-A	Amount Finer than No. 200 (Decantation)	37.00/ea
ASTM C 131; ASTM C 535	Los Angeles Abrasion (Time and Test)	187.00/ea
ASTM C 88; TxDOT, TEX-411-A	Sulfate Soundness (Time and Test)	
	Preparation Time	51.00/hr
	a) Magnesium - 5 Cycle	484.00/ea
	b) Sodium - 5 Cycle	431.00/ea
ASTM C 117; ASTM C 29; ASTM C 127; ASTM C 128; ASTM C 566; TxDOT, TEX-406-A; TxDOT, TEX-404-A; TxDOT, TEX-201-F; TxDOT, TEX-401-A	Physical Properties of Aggregates - Includes Decantation, Rodded Unit Weight, Specific Gravity, Absorption, Sieve Analysis and Moisture Content (Per Aggregate Type and Size)	
	Conducted in Conjunction with Concrete Mix Design	144.00/ea
	Conducted Separate from Concrete Mix Design	187.00/ea
ASTM C 40; TxDOT, TEX-408-A	Organic Impurities	38.00/ea
ASTM C 2419; TxDOT, TEX-203-F	Sand Equivalent Values	83.00/ea
ASTM C 142	Clay Lumps and Friable Particles	56.00/ea
ASTM C 641	Staining Materials in Lightweight Concrete Aggregate	56.00/ea

CORING

REFERENCE	FIELD SERVICES	
ASTM C 42; ACI 318	Technician Time and Equipment	
	a) One Man	$ 60.00/hr
	b) Two Men	94.00/hr
	c) Reinforcing Steel Detector	29.00/day
	d) Coring	92.00/day
	e) Generator	95.00/day
	Bit Wear	
	a) Limestone Aggregate	6.00/in.in.
	b) Quartz Aggregate (River Gravel)	7.00/in.in.

REFERENCE	LABORATORY SERVICES		
ASTM C 42	Sawed Ends for Compressive Strength Test a) Limestone Aggregate	2.00/sq.in.	
ASTM C 39; ASTM C 42; ASTM C 174; ASTM C 617	Compressive Strength of Concrete Core Includes Measurements, Capping and Testing		25.00/ea
	Report Photographs		At Cost
	Laboratory Air-Dried Unit Weight		17.00/ea

LIME

REFERENCE	FIELD SERVICES		
National Lime Association	Continuous Observation to Monitor and Record Equipment Functions, Specific Gravity of the Lime Slurry and Observation of Stabilization Location and Depth Technician Time	$	50.00/hr

REFERENCE	LABORATORY SERVICES		
ASTM D 422; TxDOT, TEX-101-E, Pt. II	Sieve Analysis of Pulverized Materials for Gradation Compliance	$	63.00/ea
ASTM D 4318; TxDOT, TEX-112-E	Lime Series Curve Determination Including Five Atterberg Limits		435.00/ea

PORTLAND CEMENT

REFERENCE	LABORATORY SERVICES		
ASTM C 183	Standard Method of Sampling Hydraulic Cement	$	50.00/hr
ASTM C 109	Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50mm Cube Specimen)		24.00/ea
ASTM C 185	Air Content of Hydraulic Cement Mortar		49.00/ea
ASTM C 266; ASTM C 191	Time of Setting of Hydraulic Cement by Gillmore/Vicat Needles		59.00/ea
ASTM C 151	Autoclave Expansion of Portland Cement		197.00/ea
ASTM C 187	Normal Consistency of Hydraulic Cement		49.00/ea
ASTM C 188	Specific Gravity of Hydraulic Cement		57.00/ea
ASTM C 430	Fineness of Hydraulic Cement by the No. 325 Sieve		57.00/ea
ASTM C 451	Early Stiffening of Portland Cement (Paste Method)		49.00/ea
ASTM C 114	Chemical Analysis		361.00/ea

ASTM C 91	Water Retention of Masonry Cement	92.00/ea
ASTM C 150	Chemical Analysis	361.00/ea
	Physical Analysis	717.00/ea

SOILS

REFERENCE	FIELD SERVICES	
ASTM D 75	Sampling Subgrade, Fill or Base	
	Technician Time	$ 50.00/hr
	In-Place Moisture-Density Test	
	Technician Time	50.00/hr
ASTM D 2922	Nuclear Density	25.00/ea
ASTM D 2167; ASTM D 1556	Volumetric Density (Sand Cone)	72.00/ea
	Fill and Embankment Observation - Testing for Compliance with the Project Specifications to Verify Proper Moisture and Compaction Conditions in Order to Produce a Quality Fill and Uniform Workmanship (Time, Test and Mileage)	
	Technician Time (Hourly Rate)	50.00/hr
	Proof Rolling Observation	50.00/hr
ASTM D 2922	Nuclear Density Test with Observation	16.00/ea

REFERENCE	LABORATORY SERVICES	
ASTM D 2216; TxDOT, TEX-103-E	Moisture Content	$ 13.00/ea
	Atterberg Limits	
ASTM D 4318	a) ASTM or TxDOT (TEX-104, TEX-105-E, TEX-106-E)	83.00/ea
	Shrinkage Limit in Conjunction with Atterberg Limits	
ASTM D 427	a) Volumetric	102.00/ea
	b) Linear (TxDOT, TEX-107-E)	102.00/ea
ASTM D 422; TxDOT, TEX-101-E; TxDOT, TEX-110-E	Sieve Analysis	
	a) Washed through No. 40 (Up to 5 Sieves)	56.00/ea
	b) Washed through No. 200 (Up to 4 Sieves)	83.00/ea
	c) Additional Sieves	13.00/ea
ASTM D 1140	Amount Finer than No. 200 Sieve	56.00/ea
	Moisture-Density Relationship	
	Preparation Time	51.00/hr
ASTM D 698; ASTM D 1557	ASTM	249.00/ea
AASHTO T 99; AASHTO T 180	AASHTO	249.00/ea
TxDOT, TEX-113-E; TxDOT, TEX-114-E	TxDOT	249.00/ea
MIL STD CE 55A	Corps of Engineers	249.00/ea
ASTM C 131; ASTM D 535	Los Angeles Abrasion (Time and Test)	187.00/ea

ASTM D 1883	California Bearing Ratio - Short Method; Includes Moisture-Density Relationship and Three Test Specimens	$	791.00/set
	Each Additional Specimen		163.00/ea
TxDOT, TEX-117-E	TxDOT Triaxial – Short Method; Includes Moisture-Density Relationship and Up to Six Test Specimens		
	Part I		1,314.00/set
	Part II		1,206.00/set
	Each Additional Specimen		148.00/ea
ASTM D 854; TxDOT, TEX-108-E	Specific Gravity		83.00/ea
ASTM D 422; TxDOT, TEX-110-E	Hydrometer Analysis (Includes Sample Preparation, Grain Size Curve and Specific Gravity)		273.00/ea
ASTM D 5084	Hydraulic Conductivity		421.00/ea
ASTM D 2166	Unit Weight		29.00/ea
TxDOT, TEX-116-E	Wet Ball Mill		206.00/ea
	Water Content and Visual Classification		13.00/ea
	Unconfined Compression (includes unit dry weight)		
	a) Soil Shelby Tube Specimens		43.00/ea
	b) Rock Core Specimens		51.00/ea
	(1) Sawed Specimen Ends		11.00/end
	Triaxial Compression		
	a) Unconsolidated-Undrained, Per Specimen		78.00/ea
	b) Unconsolidated-Undrained, Multistage		273.00/ea
	Direct Shear		
	a) Unconsolidated-Undrained		217.00/ea
	b) Consolidated-Drained (Sand)		459.00/ea
	Consolidation (Not Including Specific Gravity)		566.00/ea
	Swell Test		
	a) Pressure Method		296.00/ea
	b) Free Swell		156.00/ea

GENERAL EXPENSES

Vehicle Trip Charge	$	40.00/trip