

EXHIBIT
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FIRM: RABA KISTNER CONSULTANTS, INC. (“Engineer”)
ADDRESS: 8100 Cameron Road, Suite B-150, Austin, TX 78754

RABA KISTNER CONSULTANTS, INC.

By: _____

Date

CITY OF ROUND ROCK

By: _____
Alan McGraw, Mayor

Date

APPROVED AS TO FORM:

Stephan L. Sheets, City Attorney

ADDENDUM TO EXHIBIT C
Work Schedule

Attached Behind This Page

ON-CALL GEOTECHNICAL ENGINEERING CONSULTING SERVICES

City of Round Rock

2016 Fees

TITLE	HOURLY Rate
Principal	\$ 208.00
Senior Engineer/Consultant	\$ 208.00
Project Manager	\$ 182.00
Project Engineer	\$ 172.00
Engineer	\$ 104.00
Engineer in Training	\$ 93.50
Geotechnical Technician	\$ 62.50
CADD Operator	\$ 83.00
Clerical	\$ 57.00
Geologist	\$ 135.00
Environmental Scientist	\$ 110.00
Lead Technician	\$ 62.50
CMT Technician	\$ 52.00
Archaeologist	\$ 114.50
GIS	\$ 94.00

DIRECT EXPENSES

Mileage (Privately Owned Vehicle)	\$0.56 per mile or current GSA allowable rate
Lodging	At cost up to GSA allowable
Meals and Incidental	At cost up to GSA allowable
Air Travel	Cost + 10%
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
Misc. Non-Travel Expenses	Cost + 10%
Field Expenses	Cost + 10%

2016
ON-CALL GEOTECHNICAL ENGINEERING CONSULTING SERVICES
CITY OF ROUND ROCK
RABA KISTNER CONSULTANTS, INC

Field Drilling Services

-1 Auger Drilling (Does not include logging)		
soil	per ft	\$16.50
soft rock	per ft	\$20.00
-2 Standard Wet Rotary (Does not include logging)		
	per ft	\$22.00
-3 Nx Rock Core (Does not include logging)		
Soft rock (marl, shale)	per ft	\$33.50
Hard rock (limestone, sandstone)	per ft	\$43.50
-4 Non-conventional drilling (barge drilling or unusual time consuming drilling i.e. through bridge)		
	per hr	\$290.50
-5 Field Logging Services		
Geotechnical Technician	per hr	\$62.50
Geologists	per hr	\$135.00
Engineer in Training	per hr	\$93.50
-6 Field Coordination		
Field Engineer	per hr	\$104.00
Flagman	per hr	\$67.50
-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)		
Barge mobilization and rental		
-8 Sampling		
Standard Penetration Test (ASTM D1586)	per test	\$23.00
Shelby Tube (ASTM D1587)	per test	\$23.00
Texas Cone Penetrometer Test (THD, Tex-132-E)	per test	\$27.00
-9 Other Expenses/Charges		
Standby Time	per hr	\$234.00
Mileage - non-drilling equipment	per mile	\$1.00
Grout backfill	per ft	\$3.50
Dozer/clearing cost		
Logger truck charge	per day	\$57.00
Standard pavement coring	each	\$78.00
Concrete/AC patch	each	\$66.50
Traffic control - signs, barricades		
All other outside expenses		

ON-CALL GEOTECHNICAL ENGINEERING CONSULTING**CITY OF ROUND ROCK****2016 LABORATORY TESTING FEES****ASPHALTIC CONCRETE**

<u>REFERENCE</u>	<u>FIELD SERVICES</u>	
ASTM D 75	Sampling Raw Materials of Composite Mix Technician Time.....	\$ 52.00/hr
Asphalt Institute Manual	Asphaltic Plant Observation - To Verify Aggregate Size and Quality, Batch Weights and Temperature Technician Time.....	62.50/hr
Asphalt Institute Manual	Asphaltic Site Observation - To Observe Preparation, Laydown Operations, Asphaltic Concrete Temperatures, Mat Thickness and Mat Density Determination Technician Time.....	62.50/hr
ASTM D 2950	Nuclear Density Test with Inspection	16.50/ea
	Nuclear Density Test.....	26.00/ea
	Coring (See Coring Fee Schedule)	

<u>REFERENCE</u>	<u>LABORATORY SERVICES</u>	
ASTM D 2172; TxDOT, TEX-210-F	Extraction Test, Bitumen Content and Aggregate Sieve Analysis of Asphaltic Concrete	\$ 197.50/ea
ASTM D 2172; TxDOT, TEX-210-F	Extraction Test, Bitumen Content Only	136.50/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).....	477.50/set
Hveem, TxDOT, TEX-206-F; Marshall, ASTM D 1559	Molding Specimens Hveem or Marshall	62.50/set
	Superpave (2 per set)	124.00/set
TxDOT, TEX-207-F; ASTM D 2726	Laboratory Density Test..... a) Molded Specimen..... b) Asphalt Core	62.50/set 62.50/set 53.00/ea
	c) Superpave (2 per set)	75.00/set
Hveem, TxDOT, TEX-208-F; Marshall, ASTM D 1559	Stability Test Marshall..... Hveem	60.50/set 60.50/set
Asphalt Institute Manual and TxDOT; Mix Designs	Corp of Engineers or FAA..... TxDOT Quality Control/Quality Assurance..... TxDOT CMHB	1,990.50/ea 1,990.50/ea 2,828.00/ea
	TxDOT Calibration Mix and Pans	333.00/ea
	TxDOT Black Base Design, Item 345	1,490.50/ea
TxDOT, TEX-200-F; ASTM C 136	Sieve Analysis of Aggregate	40.50/ea

ASPHALTIC CONCRETE (Continued)

<u>REFERENCE</u>	<u>LABORATORY SERVICES</u>	
TxDOT, TEX-203-F; ASTM D 2419	Sand Equivalent Test	\$ 86.50/ea
AASHTO TP 33	Fine Aggregate Angularity.....	51.00/ea
ASTM D 4791-95;	Flat and Elongated Particle	51.00/ea
TxDOT, TEX-201-F; ASTM C 127	Specific Gravity (Coarse or Fine Aggregate).....	40.50/ea
TxDOT, TEX-201-F; ASTM C 127	Absorption (Coarse or Fine Aggregate) (Includes Specific Gravity).....	62.50/ea
TxDOT, TEX-411-A; ASTM C 88	Sulfate Soundness (Time and Test) Preparation Time.....	52.00/hr
	a) Magnesium - 5 Cycle.....	503.50/ea
	b) Sodium - 5 Cycle	448.50/ea
ASTM C 131; ASTM C 535	Los Angeles Abrasion Test (Time and Test) Los Angeles Abrasion Test (Small or Large Coarse Aggregate)	194.50/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).....	6,149.50/ea
TxDOT, TEX-227-F; AASHTO T 209; ASTM D 2041	Maximum Theoretical Specific Gravity (Rice Gravity)	93.50/ea
TxDOT, TEX-226-F; AASHTO T 283; ASTM D 4867	Moisture Sensitivity Test (Tensile Strength Ratio Test) with Freeze/Thaw	533.50/ea
	without Freeze/Thaw	417.00/ea
TxDOT, Item 3157	Cold Processed – Recycled Paving Material (RPM) Mixture Design	As Requested
	Mixture Verification (QC) Strength, Stability (Hveem, Modified Marshall).....	785.00/set
TxDOT, TEX-126-E (Modified)	Molding and Strength	381.50/set
TxDOT, TEX-208-F (Modified)	Molding and Hveem	144.50/set
ASTM D 1559	Molding and Marshall.....	136.50/set
TxDOT, TEX-103-E	Molded Moisture Content.....	13.50/ea

CEMENT TREATED BASE

<u>REFERENCE</u>	<u>FIELD SERVICES</u>	
PCA	Sampling Raw Materials for Mix Verification Technician Time.....	\$ 52.00/hr
	Sampling Contractor Processed Material Technician Time.....	52.00/hr

CEMENT TREATED BASE (Continued)

REFERENCE

LABORATORY SERVICES

PCA	Molding Controlled Processed Material	\$ 72.00/ea
PCA	Unconfined Compressive Strength Testing.....	32.50/ea
ASTM D 559; ASTM D 560	Durability (2 Specimens per Set) (Percent Loss in 12 Cycles) Wet Dry/Freeze Thaw.....	612.50/set
	<u>Mix Design</u>	
PCA; TxDOT, TEX-120-E; ASTM D 558	Mix Design - Cement Treated Base (Does Not Include Durability)	\$ 1,218.00/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..... Pick-Up of Test Specimen	\$ 52.00/hr 52.00/hr 52.00/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)..... b) 3x6 - Lightweight Insulating Cellular (Minimum of 6 - Includes Two Dry Densities)..... c) "Hold" Cylinder (Additional Charge)	17.50/ea 26.00/ea 11.50/ea 13.50/ea 25.00/ea 46.00/ea
ASTM C 78	Flexural Strength Testing and Reporting (In Conjunction with Sampling Beams).....	51.00/ea
ASTM C 231 ASTM C 173 AASHTO T 199	Air Content (In Conjunction with Sampling) a) Pressure	33.50/ea 39.50/ea 17.50/ea
ASTM C 138	Unit Weight	30.00/ea
ASTM C 143	Additional Slump Test.....	25.00/ea
ACI 311; ACI 304	Concrete Plant Observation - To Observe and Record Aggregate Types, Batch Weights, Concrete Consistency and Mixing Time Technician Time.....	52.00/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.....	52.00/hr
ACI 211.1	Hardrock Concrete Mix Design Calculations and Proportioning to Include Six Confirmatory Cylinders (Physical Properties Not Included)	313.00/ea

CONCRETE (Continued)

<u>REFERENCE</u>	<u>FIELD SERVICES</u>	
ACI 211.1 (303.R)	Architectural Mix Design	343.00/ea
ACI 211.2	Lightweight Structural Mix Design	322.50/ea
ASTM C 270	Masonry Mortar Mix Design Including Six Cubes and Water Retention (Physical Properties Not Included)	\$ 343.00/ea
ASTM C 1202	Chloride Ion Permeability	272.50/set
ASTM C 39	Cylinders Compressive Strength Testing and Reporting F.O.B. Cylinders to Our Laboratory	29.00/ea
ASTM C 496	Splitting Tensile Strength of Concrete Cylinders Tensile Test	45.50/ea
ASTM C 666	Freeze-Thaw Test	378.50/set
ASTM C 469	Determination of Young's Modulus of Elasticity (Time, Test and Set-Up)	86.50/ea
ASTM C 803	Windsor Probe (Includes Surface Preparation)	88.50/hr
ASTM C 805	Schmidt Rebound Number	88.50/hr

CONCRETE AGGREGATES

<u>REFERENCE</u>	<u>FIELD SERVICES</u>	
ASTM D 75; TxDOT, TEX-400-A	Sampling Concrete Aggregates Technician Time	\$ 52.00/hr

<u>REFERENCE</u>	<u>LABORATORY SERVICES</u>	
ASTM C 566	Moisture Content	\$ 13.50/ea
ASTM C 29; TxDOT, TEX-404-A	Unit Weight (Coarse or Fine) a) Loose	34.50/ea
	b) Rodded	34.50/ea
ASTM C 127; ASTM C 128; TxDOT, TEX-201-F	Specific Gravity (Coarse or Fine)	40.50/ea
ASTM C 123	Lightweight Particles (Plus Cost of Materials)	60.50/test
	Absorption	
ASTM C 127; ASTM C 128; TxDOT, TEX-201-F	a) Normal Weight Aggregate (Coarse or Fine)	26.00/ea
	b) Lightweight Aggregate (Coarse)	29.00/ea
ASTM C 136; TxDOT, TEX-401-A	Sieve Analysis (Dry) for ASTM C 33 Specifications a) Coarse, Per Sample	45.50/ea
	b) Fine, Per Sample	54.00/ea
ASTM C 117; TxDOT, TEX-406-A	Amount Finer than No. 200 (Decantation)	38.50/ea
ASTM C 131; ASTM C 535	Los Angeles Abrasion (Time and Test)	195.00/ea

CONCRETE AGGREGATES (Continued)

<u>REFERENCE</u>	<u>FIELD SERVICES</u>	
ASTM C 88; TxDOT, TEX-411-A	Sulfate Soundness (Time and Test) Preparation Time.....	52.00/hr 503.50/ea
	a) Magnesium - 5 Cycle.....	448.50/ea
	b) Sodium - 5 Cycle	
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 Conducted Separate from Concrete Mix Design.....	150.00/ea 194.50/ea
ASTM C 40; TxDOT, TEX-408-A	Organic Impurities	39.50/ea
ASTM C 2419; TxDOT, TEX-203-F	Sand Equivalent Values.....	86.50/ea
ASTM C 142	Clay Lumps and Friable Particles	\$ 58.50/ea
ASTM C 641	Staining Materials in Lightweight Concrete Aggregate	58.50/ea

CORING

<u>REFERENCE</u>	<u>FIELD SERVICES</u>	
ASTM C 42; ACI 318	Technician Time and Equipment a) One Man..... b) Two Men	\$ 62.50/hr 97.50/hr
	c) Reinforcing Steel Detector.....	30.00/day
	d) Coring	95.50/day
	e) Generator	99.00/day
	Bit Wear a) Limestone Aggregate	6.50/in.in.
	b) Quartz Aggregate (River Gravel).....	7.50/in.in.

<u>REFERENCE</u>	<u>LABORATORY SERVICES</u>	
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	26.00/ea
	Report Photographs	Cost +15%
	Laboratory Air-Dried Unit Weight.....	17.50/ea

LIME

<u>REFERENCE</u>	<u>FIELD SERVICES</u>		
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.....	\$	52.00/hr

<u>REFERENCE</u>	<u>LABORATORY SERVICES</u>		
ASTM D 422; TxDOT, TEX-101-E, Pt. II	Sieve Analysis of Pulverized Materials for Gradation Compliance.....	\$	65.50/ea
ASTM D 4318; TxDOT, TEX-112-E	Lime Series Curve Determination Including Five Atterberg Limits.....		452.50/ea

PORTLAND CEMENT

<u>REFERENCE</u>	<u>LABORATORY SERVICES</u>		
ASTM C 183	Standard Method of Sampling Hydraulic Cement	\$	52.00/hr
ASTM C 109	Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50mm Cube Specimen)		25.00/ea
ASTM C 185	Air Content of Hydraulic Cement Mortar		51.00/ea
ASTM C 266; ASTM C 191	Time of Setting of Hydraulic Cement by Gillmore/Vicat Needles		61.50/ea
ASTM C 151	Autoclave Expansion of Portland Cement		205.00/ea
ASTM C 187	Normal Consistency of Hydraulic Cement		51.00/ea
ASTM C 188	Specific Gravity of Hydraulic Cement		59.50/ea
ASTM C 430	Fineness of Hydraulic Cement by the No. 325 Sieve		59.50/ea
ASTM C 451	Early Stiffening of Portland Cement (Paste Method)		51.00/ea
ASTM C 114	Chemical Analysis		375.50/ea
ASTM C 91	Water Retention of Masonry Cement		95.50/ea
ASTM C 150	Chemical Analysis		375.50/ea
	Physical Analysis		745.50/ea

SOILS

<u>REFERENCE</u>	<u>FIELD SERVICES</u>		
ASTM D 75	Sampling Subgrade, Fill or Base Technician Time.....	\$	52.00/hr
	In-Place Moisture-Density Test Technician Time.....		52.00/hr
ASTM D 2922	Nuclear Density		26.00/ea
ASTM D 2167; ASTM D 1556	Volumetric Density (Sand Cone)		75.00/ea

SOILS (Continued)

<u>REFERENCE</u>	<u>FIELD SERVICES</u>	
	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)	52.00/hr
ASTM D 2922	Proof Rolling Observation.....	52.00/hr
	Nuclear Density Test with Observation	16.50/ea
ASTM D 2216; TxDOT, TEX-103-E	Moisture Content	\$ 13.50/ea
	Atterberg Limits	
ASTM D 4318	a) ASTM or TxDOT (TEX-104, TEX-105-E, TEX-106-E)	86.50/ea
	Shrinkage Limit in Conjunction with Atterberg Limits	
ASTM D 427	a) Volumetric	106.00/ea
	b) Linear (TxDOT, TEX-107-E)	106.00/ea
ASTM D 422; TxDOT, TEX-101-E; TxDOT, TEX-110-E;	Sieve Analysis	
	a) Washed through No. 40 (Up to 5 Sieves).....	58.50/ea
	b) Washed through No. 200 (Up to 5 Sieves).....	86.50/ea
	c) Additional Sieves	13.50/ea
ASTM D 1140	Amount Finer Than No. 200 Sieve	58.50/ea
	Moisture-Density Relationship	
	Preparation Time	52.00/hr
ASTM D 698; ASTM D 1557	ASTM	259.00/ea
AASHTO T 99; AASHTO T 180	AASHTO	259.00/ea
TxDOT, TEX-113-E; TxDOT, TEX-114-E	TxDOT	259.00/ea
MIL STD CE 55A	Corp of Engineers	259.00/ea
ASTM C 131; ASTM C 535	Los Angeles Abrasion (Time and Test)	194.50/ea
ASTM D 1883	California Bearing Ratio - Short Method; Includes Moisture-Density Relationship and One Test Specimen.....	822.50/set
	Each Additional Specimen	169.50/ea
TxDOT, TEX-117-E	TxDOT Triaxial – Short Method; Includes Moisture-Density Relationship and Up to Six Test Specimens	
	Part I	\$ 1,366.50/set
	Part II	1,254.50/set
	Each Additional Specimen	154.00/ea
ASTM D 854; TxDOT, TEX-108-E	Specific Gravity	86.50/ea
ASTM D 422; TxDOT, TEX-110-E	Hydrometer Analysis (Includes Sample Preparation, Grain Size Curve and Specific Gravity)	284.00/ea
ASTM D 5084	Hydraulic Conductivity.....	438.00/ea
ASTM D 2166	Unit Weight	30.00/ea
TxDOT, TEX-116-E	Wet Ball Mill	214.50/ea

SOILS (Continued)

REFERENCE

FIELD SERVICES

Water Content and Visual Classification.....	13.50/ea
Unconfined Compression (includes unit dry weight)	
a) Soil Shelby Tube Specimens.....	45.00/ea
b) Rock Core Specimens	53.00/ea
(1) Sawed Specimen Ends	11.50/end
Triaxial Compression	
a) Unconsolidated-Undrained, Per Specimen.....	81.00/ea
b) Unconsolidated-Undrained, Multistage	284.00/ea
Direct Shear	
a) Unconsolidated-Undrained	217.00/ea
b) Consolidated-Drained (Sand).....	459.00/ea
Consolidation (Not Including Specific Gravity)	587.50/ea
Swell Test	
a) Pressure Method	308.00/ea
b) Free Swell	162.50/ea