

COUNTY	Statewide	
ROUTE	N/A	
DISTRICT	Statewide	
ITEM NUMBER	N/A	
PROJECT DESCRIPTION	Statewide Geotechnical Engineering and Laboratory Testing	
PROJECT MANAGER	William Broyles, P.E.	
USER DIVISION	Materials	
APPROXIMATE FEE	<\$750,000 Upset Limit per contract	
PURPOSE AND NEED	<p>To provide geotechnical engineering and laboratory testing services to help expedite the completion of projects and effectively handle the workload on a statewide basis during FY 2005 and 2006.</p> <p>Some projects may require limited surveying and roadway design necessary to prepare a complete set of roadway plans for the design of landslide and rockfall corrections. <i>(A pre-qualified subconsultant may be used on these projects.)</i> Prequalification in the areas of Rural Roadway Design and Surveying and/or the name of subconsultant are not required to be identified in the Response to Announcement; these issues will be addressed at a later time.</p>	
PROJECT SCHEDULE & PROJECT SCHEDULE MILESTONES	RESPONSE DATE	March 25, 2004 4:30 P.M. Frankfort Time
	SELECTION COMMITTEE DATE	April 7, 2004
	TENTATIVE DEADLINE FOR CONSULTANT FEE PROPOSAL	April 15, 2004

CONTRACT NEGOTIATIONS	April 29, 2004
NOTICE TO PROCEED	July 1, 2004
COMPLETION OF SERVICES	June 30, 2006
The selected consultants are expected to meet the scheduled milestone dates.	
EVALUATION FACTORS	<ol style="list-style-type: none"> 1. Project approach and proposed procedures to accomplish the services for the project (10 points) 2. Relative experience of consultant personnel assigned to project team with highway projects for KYTC and/or for federal, local or other state governmental agencies. (10 points) 3. Capacity to comply with project schedule. (10 points) 4. Past record of performance on project of similar type and complexity. (10 points) 5. Consultant has Kentucky offices

		<p>where work is to be performed. (2 points)</p> <p>75% - 100% of work accomplished in Kentucky offices – 2 points</p> <p>26% - 74% of work accomplished in Kentucky offices – 1 point</p> <p>0% - 25% of work accomplished in Kentucky office - 0 points</p>
	<p>SELECTION COMMITTEE MEMBERS</p>	<ol style="list-style-type: none"> 1. Bart Asher, P.E., User Division 2. Darrin Beckett, P. E., User Division 3. Jeff Jasper, Secretary's Pool 4. Don Breeding, Secretary's Pool 5. Paul Gravely, Governor's Pool
<p>DBE REQUIREMENT</p>	<p>None</p>	
<p>SPECIAL INSTRUCTIONS</p>	<p>The Department reserves the option to modify the selected consultant's agreement to include any necessary engineering and/or related services for this project. At that time, the firm (s) will be pre-qualified by the Department in the required area (s).</p> <p>Four (4) firms will be selected to provide these services. The contract period is each firm receiving a one-year contract with the option of extending the period for (1) year. The firms will</p>	

be placed in a pool, randomly drawn and listed in consecutive order (1-4). This order will determine the numerical order in which projects will be offered to firms on a rotating basis. Firms will not be offered an additional project until the remaining firms on the list have been offered a project. If a firm declines to accept a project, that firm shall not be eligible to accept another project until the remaining firms on the list are offered a project. If a firm declines a project or does not respond to an invitation to perform services for a project within 7 calendar days, documentation shall be placed in the project files and the next firm on the list shall be offered the project. If the next firm on the list declines, the project shall be offered to the next firm, etc.

The selected firms must be capable of performing a variety of geotechnical engineering and laboratory testing services. A few projects may require capability of performing surveying and rural roadway design.

All selected firms must have staffs who demonstrate proficiency in the field of geotechnical engineering and laboratory testing for transportation facilities on highway projects for KYTC and/or for federal, local or other state governmental agencies; experience on challenging projects and applicable continuing education are desirable. The firms must clearly demonstrate qualifications, experience, and capabilities in the areas below; they may not necessarily meet all these criteria, but the criteria do represent a benchmark.

Additional Staff Qualifications

- One or more Professional Geologists, licensed in Kentucky, with two or more years of experience in engineering geology on highway projects for KYTC and/or for federal, local or other state governmental agencies, and licensed to practice in Kentucky.
- One or more CADD operators proficient with Microstation, with one or more years of experience in geotechnical drafting on highway projects for KYTC and/or for federal, local or other state governmental agencies.

Laboratory staff meeting the proficiency requirements necessary for AASHTO Accreditation according to AASHTO R18.

Conventional Geotechnical Engineering Experience & Capabilities

- Preparing geotechnical submittals in accordance with KYTC format, including: Boring, Laboratory Testing, and Engineering Analysis Plans; Cost Estimates and Invoices for Engineering and Laboratory Testing Services.
- Preparing CADD drawings including roadway soil profile sheets, embankment and cut stability sheets, structure subsurface data sheets, geotechnical note sheets, and other related drawings in accordance with KYTC format, with the capability of preparing full size 22" x 36" and reduced size 11" x 17" CADD drawings.
- Preparing and Interpreting Subsurface Logs in accordance with KYTC format.
- Preparing Geotechnical Engineering Reports for roadways and structures in accordance with KYTC format.
- Analyzing and/or designing embankments, soil and rock cuts, reinforced soil slopes, and landslide and rockfall corrections for transportation facilities.
- Performing geotechnical engineering analyses for deep foundations (e.g. driven piles and drilled shafts) and non-conventional retaining structures (e.g. mechanically stabilized earth, tieback, and soil nail walls) for transportation facilities.
- Monitoring geotechnical construction of transportation facilities, including but not limited to: compaction of embankments and soil subgrades, excavation for roadway cuts and structure foundations, construction of non-conventional retaining structures, and installation of deep foundations.

Interpreting data from geotechnical instrumentation installed in slopes, retaining walls, deep foundations and other related facilities.

Seismic Geotechnical Engineering Experience & Capabilities

- Performing seismic geotechnical engineering analyses for the design of bridges, embankments, dams, and/or other major structures, including: Simplified Seismic Site Response, Equivalent-Linear One Dimensional Site Response, Liquefaction, Earthquake Induced Settlement, Pseudo-Static Seismic Slope Stability, and other related analyses.

Geotechnical Laboratory Qualifications & Capabilities

- AASHTO Accreditation (R18) for the following AASHTO test methods: T87, T88, T89, T90, T99, T100, T193, T208, T216, T296, T297, T265; and capable of performing KM 64-501 (CBR by Kentucky Method) KM 64-513 (Slake Durability), KM-64-514 (Jar Slake), and ASTM D 2938 or KM 64-523 (Unconfined Compression Test on Rock).
- Refer to the Schedule of Laboratory Tests and Fees below for a list of laboratory tests. The selected firms will be expected to have the capability to perform tests included in Items 1-11 in this schedule. Items 12-19 may be used on rare occasions; so, the capability to perform these tests is desirable, but not necessary in order to be selected to receive a contract. Firms should indicate which tests they are capable of performing in their response.

SCOPE

Services will be performed in general accordance with the KYTC Geotechnical Manual and other applicable KYTC and/or FHWA documents, with exceptions, clarifications, or additions identified during negotiations and/or on a project-by-project basis. The services will include, but are not necessarily limited to the following:

CONVENTIONAL GEOTECHNICAL ENGINEERING

ANALYSES: Slope Stability, Settlement, Deep Foundation, Wave Equation Drivability, Negative Skin Friction, Bearing Capacity, Retaining Wall.

SEISMIC GEOTECHNICAL ENGINEERING ANALYSES:

Simplified Seismic Site Response, Equivalent-Linear One-Dimensional Site Response, Liquefaction, Earthquake Induced Settlement, Pseudo-Static Seismic Slope Stability.

DRAFTING: Preparing Microstation CADD drawings of roadway soil profile sheets, embankment and cut stability sheets, structure subsurface data sheets, geotechnical note sheets, and other related drafting.

PRELIMINARY PLANS

MEETINGS: Preliminary, Rock Core, and Final Meetings.

REPORTS: Writing and publishing Geotechnical Engineering Reports. The Geotechnical Branch will indicate the number of report copies required for each project.

LOGGING ROCK CORES

GEOTECHNICAL LABORATORY TESTING: Refer to the Schedule of Laboratory Tests and Fees below for a list of laboratory tests. Tests included in Items 1-11 in this schedule may be required on a regular basis; Items 12-19 will be used rarely. Upon request, provide laboratory test reports according to KYTC format.

RURAL ROADWAY DESIGN AND SURVEYING: Performing Rural Roadway Design and Surveying as necessary to prepare a complete set of roadway plans for the design of landslide and rockfall corrections.

ENGINEERING SERVICES FEES	Fees for engineering services will be paid by the hour, using the hourly rates from the firms' most recent KYTC audits and a 10% operating margin.
LABORATORY TESTING FEES	Fees for laboratory testing services will be paid according to the Schedule of Laboratory Tests and Fees below.
EXPENSES	Expenses will be reimbursed according to Departmental Policy.
PREQUALIFICATION REQUIREMENTS	<p><u>GEOTECHNICAL SERVICES</u></p> <ul style="list-style-type: none"> • Engineering • Laboratory Testing

Schedule of Laboratory Tests and Fees

	Test Description	Applicable Test Method (s) and/or Comments	Pay Unit	Unit Price
1	Moisture Content	T265	Test	\$8.00
2	Soil Classification	KM519, T89, T90, T100 & Classify (plastic soil)	Sample	\$160.00

3	Wash Gradation	% finer that #200, sieve gradation, & classify (non-plastic soil)	Sample	\$45.00
4	Moisture-Density	KM 511	Sample	\$120.00
5	Moisture-Density, CBR, & Soil Classification	KM511, KM501, KM519, T89, T90, T100	Sample	\$415.00
6	Unconfined Compression Test on Soil	KM522	Test	\$45.00
7	UU Triaxial Test	KM521	Test	\$85.00
8	CU Triaxial Test w/ Pore Pressure Measurements	KM502	Test (1 stress path)	\$275.00
9	One-Dimensional Consolidation Test	T216	Test	\$390.00
10	Slake Durability Index & Jar Slake Test	KM513, KM514	Sample	\$55.00
11	Unconfined Compression Test on Rock	KM523 or D2938 w/ stress-strain curve, includes sawing and capping sample	Sample	\$120.00
12	Direct Shear Test	T236	Test (1 normal force)	\$150.00
13	Remolding Sample for Permeability or Triaxial Testing	Includes moisture adjustments, remolding, & extrusion	Sample	\$45.00
14	Constant Head Permeability Test on Granular Soil	D2434	Test	\$200.00

15	Falling Head Permeability Test on Cohesive Soil (Flexible Wall)	D5084	Test	\$340.00
16	Falling Head Permeability Test on Rock (Flexible Wall)	D5084	Test	\$540.00
17	CU Triaxial Test w/Pore Pressure Measurements (Large Scale)	T297, aggregate, 6 inch dia. x 12 inch	Test (1 stress path)	\$395.00
18	Direct Shear Test (Large Scale)	T236, aggregate, 18 inch x 18 inch	Test (1 normal force)	\$395.00
19	Resilient Modulus Test	T307	Test	\$410.00

T=AASHTO Test Methods, D=ASTM Test Methods, KM= Kentucky Methods