



Professional Services Procurement Bulletin 2008-06

Statewide Geotechnical Drilling Services

COUNTY	Statewide
ROUTE	N/A
DISTRICT	Statewide
ITEM NO	N/A
PROJECT DESCRIPTION	To provide geotechnical drilling services.
PROJECT MANAGER	William Broyles, P.E.
USER DIVISION	Structural Design
APPROXIMATE FEE	<\$1,000,000 upset limit (per contract)
PROJECT FUNDING	State & Federal Funds
PURPOSE AND NEED	To provide geotechnical drilling services; to help expedite the completion of projects and effectively handle estimated workload, on a statewide basis.
DBE REQUIREMENT	None

SPECIAL INSTRUCTIONS

Three (3) firms will be selected to provide these services per region. A separate proposal is to be submitted for each region a firm wants to be considered. The contract period is for a one-year period with the option of extending the period for one (1) additional year.

Each criterion will be assigned a maximum point value. The best proposal for each criterion will receive the maximum number of points assigned for that criterion. The best proposal will then be divided into each of the other proposals and the result multiplied times the possible points to determine its point value. This process will be conducted for all line items within a group. The three highest composite scores thus calculated, for supplying all requested line items within the group will be considered the best qualified and be awarded a contract.

Once the three firms per region have been chosen then they will be ranked in consecutive order (1-3) by using their low cost total bid on a subgroup basis for item 1 through 17 for each Region and past record of performance by firm on projects of similar type and complexity. (Low total bid 45 points and Past record of performance by firm 55 points).

Each criterion will be assigned a maximum point value. The best proposal for each criterion will receive the maximum number of points assigned for that criterion. The best proposal will then be divided into each of the other proposals and the result multiplied times the possible points to determine its point value. This process will be conducted for all line items within a group. The composite scores thus calculated for the three firms will determine the numerical order in which projects will be offered to firms with the number one proposal for that region having the first right of refusal. If that firm turns down the project, it will be offered to the number two firm and so on until the project is accepted. If a firm declines a project or does not respond to an invitation to perform services for a project within 2 workdays, from the date the Department offers a project, then documentation shall be placed in the project files noting the project was declined and the next firm in the list shall be offered the project, etc.

Use the forms referenced on page 11 of this advertisement to submit unit prices. This form shall be put in a sealed envelope with the firms name and region that it applies to, written on the outside of the envelope. Do not include this form as part of the bound submittal.

SPECIAL INSTRUCTIONS - Cont'd

If all three firms in a region turn down a project then the Department has the option of increasing the price of the bid items (1 - 17) by 10 % for each firm and offering the project to the firms again in the same order. The Department has the option of continuing to increase by 10% and offering the project to the firms again in the same order until the project is accepted.

Cost of Drilling items on floating equipment shall be paid by taking the land rate for the company doing the drilling plus 50 percent.

Cost of Drilling items for drilling with drilling mud shall be paid by taking the land rate for the company doing the drilling plus 20 percent. All mud drilling must be pre-approved in writing.

Cost of Drilling items for Angle holes shall be paid by taking the land rate for the company doing the drilling plus 40 percent.

Cost of Drilling items for drilling at depths greater than 80 feet shall be paid by taking the land rate for the company doing the drilling plus 30 percent. This will apply to each additional 80 foot interval. See example below. The cost of drilling at depth does not apply to the rock coring price.

Example:

Unit Price of each item from 0 to 80 is (X).

Unit Price of each item from 81 to 160 is (1.3(X)).

Unit Price of each item from 161 to 240 is (1.6(X)).

Unit Price of each item form 241 to 320 is (1.9(X)).

Where X is the unit price of the drilling item on land.

If more than one cost increase applies to an item it shall be done as listed below. Say mud drilling, barge drilling, and depth increases are used.

Unit Price of each item from 0 to 80 is $(X + 0.5X + 0.2X) = 1.7X$

Unit Price of each item from 81 to 160 is $(1.3(X) + 0.5X + 0.2X) = 2X$

Unit Price of each item from 161 to 240 is $(1.6(X) + 0.5X + 0.2X) = 2.3X$

Unit Price of each item form 241 to 320 is $(1.9(X) + 0.5X + 0.2X) = 2.6X$

Floor (lowest allowable) bids have been established by the Department to prevent skewed bids in each region. These are included in the announcement. Bids below these rates will be deemed unacceptable and vendors' bids for these items will be adjusted by the Department to the lowest allowable.

SCOPE

2008 GENERAL SPECIFICATIONS

Region 1 - (Districts 1,2,3 and 4)

Region 2- (Districts 5, 6, 7, 8 and 9)

Region 3- (Districts 10, 11 and 12)

1. The Department of Highways will provide the boring plan, and staking of holes for the projects. The drilling firms shall provide their own traffic control. The drilling firms shall provide their own traffic control. The traffic control shall be provided by a certified traffic control firm or the Drilling company if they have certified traffic control personnel.

Flagging by the Department will only be made available when personnel and time schedule can be coordinated.

All flagging shall be done according to the Manual on Uniform Traffic Control Devices. Guidelines can be found at the following web site: <http://mutcd.fhwa.dot.gov/pdfs/2003r1/pdf-index.htm>. If a consultant's drill crew wants to provide their own flag-personnel, then they must follow the guidelines listed below.

Traffic Control (In House)

This activity shall be paid at a daily rate/price (\$350.00 a day) for two laborers, including expenses and travel, plus the cost of any necessary rental equipment (include copy of invoice) to provide flagging for the geotechnical drill and crew. Provide a copy of certification for each flag-personnel on the job. The following materials or others not listed may also be used when necessary, but will require approval from the Department. Rental materials are paid for at actual cost (with receipts).

1. Moveable Signs
2. Electronic Message Boards
3. Traffic Cones
4. Barrels

Subcontracted Traffic Control-This item shall be paid as invoiced by the vendor (include actual invoices), plus \$100.00 to account for any administrative expenses. Time shall not be included for the drill or drill crew. Vendor personnel shall be certified and provide all necessary equipment, including mobilization and demobilization, lodging, meals necessary to provide flagging for the geotechnical drill and crew.

The drilling firms must obtain written permission from the Department prior to obtaining a traffic control firm.

The drilling firms will be responsible for obtaining all utilities locations, right of entry from the property owners; however, in case of refusal, the firm should request assistance from the Pre-Construction Engineer in the applicable District.

SCOPE—Cont'd

Property owner permissions

The Department will pay 2 hours per parcel needed to be entered on for drilling operations. The rate shall be \$20.00 per hour.

If guard rail is required to be removed the Department will pay \$200.00 for the removal and temporary replacement per location.

The drilling firms must obtain written permission from the Department prior to removing guard rail.

2. The drilling work cannot be subcontracted without written approval from the Department and only to a pre-qualified firm.
3. Drilling shall begin on a project within ten (10) calendar days from the date of notification unless otherwise agreed to by the Department.
4. If the firm and the Department of Highways are in agreement, more than one drill crew may be utilized at the same time on larger projects. A minimum crew is considered to be two people, drill, and all equipment needed to perform drilling operations.
5. Drilling will not be required during the months of January and February, unless agreed to by the firm in their proposal.
6. Drilling and sampling procedures, materials, and all items necessary to complete the work shall meet the specifications as outlined in the *Geotechnical Manual*. **All split spoon samples obtained on any projects shall be obtained by use of an Automatic Hammer.**
7. Firms are responsible for completing the scope of work on time. A time and/or date of completion will be established in writing for each project. If the Department delays drilling operations six months beyond the expiration date of the Notification for Drilling Services (Form TC 66- 203 or old form TC64-523), the firm is not obligated to complete the scope of work.
8. The contract is effective for one year. However, the expiration date may be extended one additional year if agreeable to the Department and firm.
9. The method of payment will be made as described in Section GT-903-3 Of the *Geotechnical Manual* for: **(A)**. Mobilization of Equipment. Mobilization and demobilization of drill equipment will be paid per drill crew as follows: \$250.00 administrative fee plus \$4.00 per mile, from the drilling firms office to the project site, up to a maximum of 500 miles (round trip) A drill crew is defined as personnel, drill rig, equipment, materials, and all items necessary to drill and sample in accordance with the Specifications. Mileage will be determined using the Official Kentucky Highway Map. **(B)**. Mobilization (including demobilization) costs for a sub-contracted dozer or track hoe and operator shall be paid at the hourly rate bid price, for a total of two hours for each project. The two hours applies to subcontracted dozer company only. **(C)**. Mobilization (including demobilization) costs for a company owned dozer or track hoe and operator shall be paid as follows: \$250.00 administrative fee plus \$4.00 per mile, from the drilling firms office to the project site, up to a maximum of 500 miles (round trip) Mileage will be determined using the Official Kentucky Highway Map.

SCOPE—Cont'd

(D). Grouting intervals are paid for by price per foot and includes all labor and materials necessary to seal the hole. Grouting material shall be cement or bentonite.

(E). Drilling operations on property of the railroad, Forest Service, Corps of Engineers, etc. may require additional time and effort. Any required costs or fees (i.e., flagmen) shall be invoiced as charged. Also an administrative fee of \$1000.00 per project will be allowed for dealing with these entities.

(F). Mobilization (including demobilization) costs for Company-Owned Floating Equipment, shall be negotiated per project.

(G). Subcontracted Towboat and/or Barge and crew shall be paid for at invoiced cost. An administrative fee of \$1000.00 shall be allowed to cover communications with towboat/barge contractor and all necessary coordination, permits, etc., required by the Corps of Engineers and/or others.

(H). Company-Owned Towboat and/or Barge and its crew shall be negotiated per project. An administrative fee of \$1000.00 shall be allowed to cover all necessary coordination, permits, etc., required by the Corps of Engineers and/or others.

For items E, G and H if vendor cost exceeds \$1000.00 and the extra cost can be justified the extra cost may be reimbursed.

(I). Reclamation Materials are paid for at actual cost (with receipts for materials). The receipts shall only show items & cost for materials purchased & used for each individual project. These materials include the following:

1. Seed
2. Straw
3. Rock (Crushed Aggregate #57)

The following materials or others, may also be used when necessary, but will require written approval from the Department.

1. Temporary Silt Fence
2. Bag of Top Soil
3. Sheet of 3/4" Plywood
4. Pipe

Pipe-Any overhead or administrative fee for buying reclamation materials shall be included in your unit bid price for Reclamation.

(J). Pavement Cores- shall be paid at the unit price per/foot. Unit bid price covers all diameter size samples (4", 6", 8" & 10"). The price shall include auguring the DGA out if a tube is required in the sub-grade and back-filling the hole with asphalt or concrete.

(K). Mobilization (including demobilization) costs for a company owned water truck and operator shall be paid as follows: \$250.00 administrative fee plus \$4.00 per mile, from the drilling firms office to the project site, up to a maximum of 500 miles (round trip) Mileage will be determined using the Official Kentucky Highway Map. If water has to be purchased from a water company it shall be paid as invoiced to the Drilling Company.

SCOPE—Cont'd

On Slope Incliner holes the backfill material will be provided by KYTC.

10. Rock cores and samples shall be delivered to the Geotechnical Branch in Frankfort, Kentucky by the drilling due date as specified in the Notification for Drilling Services (Form TC 66-203 or old form TC 64-523) unless otherwise specified by the Geotechnical Branch.

All logs for any type hole drilled on a project will be done in a software package called gINT, the Department will provide the data template to the Drilling firm and they are to fill it out and submit it back to the department electronically. A \$250.00 administrative fee per project will be allowed for the completion of logs electronically. For rock cores only, the Branch wants one hard copy put in the first box of each core hole and one additional hard copy delivered with the cores.

11. Pay invoices for the work shall be submitted directly to the Geotechnical Branch, Division of Structural Design. This shall include the following where applicable:

A. Tabulation of Soil and Subsurface Quantities for Pay Estimate.

B. Cost Items for Subsurface Investigation. Authorized personnel shall sign this form.

C. Subsurface Logs- All logs shall be done in gINT using the Data Template provided by the Department.

D. Cased Observation Well Data, including 7 day water table readings.

E. Summary of Mileage for mobilization and demobilization routes from the drilling firms office to the project site, drill rig identification numbers and dates.

F. Documentation of time records for the dozer or track hoe working time. If a subcontracted dozer or track hoe is used, an invoice of subcontracted dozer or track hoe working time is required.

G. Documentation of records for reclamation activity with receipts for materials.

H. A Company invoice letter on an official letterhead signed by the responsible party, and with a Company invoice number.

The pay invoices may be submitted monthly if desired. A percent retainage fee will not be applicable to this contract. Payment will only be permitted after delivery of cores, samples, logs, observation well data, etc. Approval of the final pay invoice will only be permitted after all reclamation is completed; a review by the Department and evaluation is completed.

12. The Department does not guarantee work will be assigned under this contract. The unit quantities indicated in this proposal are estimates only and are not to be implied or inferred as being guaranteed. The Department will order only those quantities required by the Project as determined by the Department.

13. Payment for labor, materials, equipment, and all items necessary to complete the work shall be made only at the contract unit prices unless otherwise stated.

14. Hole locations cannot be moved without prior approval from the Geotechnical Branch. Hole locations moved without prior approval of the Geotechnical Branch are subject to be re-drilled. The unapproved hole location will not be eligible for payment.

15. Drill crew supervisors shall be subject to the approval of the Geotechnical Branch. The company shall submit completed Drill Crew Supervisor Information for each supervisor.

SCOPE—Cont'd

16. Form TC 66-203 or old form TC 64-523, Notification for Drilling Services, must be signed indicating acceptance or rejection of the option and returned to the Geotechnical Branch within 7 working days. A verbal commitment must be offered within two working days. Failure to follow these procedures will result in forfeiture of the offered project.

17. Failure to comply with the General Specifications may result in cancellation of the contract in accordance with the penalty clause as outlined.

18. Bidders must be pre-qualified, have an office within the state or have an office within 100 miles of a region being bid upon, in order to be eligible for award of contract. To be eligible to do work in Region 1 provide evidence of having a drill rig with automatic hammer able to sample to 130 feet, and must demonstrate proficiency in mud drilling. To be eligible to do work in Region 2 provide evidence of having a drill rig with automatic hammer able to sample 100 feet, demonstrate proficiency in mud drilling, and has at least one skid or track mounded drill rig. To be eligible to do work in Region 3 provide evidence of having at least one skid or track mounded drill rig with automatic hammer and tooling able to do a 300-foot core hole.

SEALING GEOTECHNICAL BORE HOLES

All subsurface borings shall be completely back-filled to prevent damage to property or injury to people or animals. Sealing drill holes shall be in accordance with the Departments' plan (see attachment) with the following exceptions.

1. Drill holes within 100 feet of a private well shall be sealed with grout through the water-bearing strata (Must get department permission before hand).

By a special request of coal companies, core holes penetrating commercial coal seams shall be sealed with grout. Packers may be required.

If a firm chooses to grout any other borings the maximum payment of grouting interval will be 2 to 3 feet per boring depending on the depth of boring drilled.

RECLAMATION

Reclamation of drill sites, dozer and/or track hoe roads shall be protected from erosion by utilizing grass seed and straw. The cost shall be paid by the daily 8 hour bid rate price for two man crew plus the material costs. A receipt of materials shall reflect the actual cost of materials. Maximum reimbursement for materials will not exceed the maximum amount outlined in the General Specifications.

Cut off trenches, water bars, or ditches may be required for long, steep grades of dozer and/or track hoe roads to prevent excessive erosion. Dozer and track hoe time required for these functions will be paid by the bid price and documented within the form for Dozer Working Time or Track Hoe Working Time.

Reclamation costs for negligent operations (cut fences, deep ruts in soft ground, crop damages, and clean up (trash) operations) are the responsibility of the firm and are not included in this item.

SCOPE—Cont'd

PLAN FOR SEALING GEOTECHNICAL BORINGS

The Groundwater protection Regulation: 401KAR 5:307 defines a bore hole as (1) "a hole drilled in the soil for exploratory or sampling purposes" and (2) a core hole as "a hole drilled for the purpose of obtaining a rock core." The Geotechnical Branch routinely drills these type holes for proposed roadway projects.

A boring plan is made for each roadway project by engineers and geologists and reviewed in the field before any drilling operations begin. If, during the field review, any contaminated areas, close proximity to water wells, springs, septic tanks, or any geologic hazards are noted, then the boring plan is altered accordingly. Most of these borings are cut out or filled over when the project is constructed.

Borings are not made by the Geotechnical Branch in areas where soil contamination is present or suspected. If contamination of any type is noted while drilling, the work is immediately stopped and the Division of Environmental Analysis is notified. Environmental Bore Holes, if deemed necessary by the Geotechnical Branch, will be furnished by certified drilling consultants.

I. BORE-HOLES

Bore-holes are made for the purpose of obtaining a soil sample or to define a rock line profile. These borings are usually made with a 4-inch auger and will normally be 5 feet or more in depth unless rock is encountered first.

The present procedure for back-filling these holes is to use drill cuttings from the hole or adjacent soils that have a texture and permeability similar to the materials encountered in the hole. The bore hole is completely filled from bottom depth to the original ground surface, and tamping or compacting of the backfill material is performed as necessary to minimize voids or backfill subsidence. Back-filling is performed in a timely manner after completion of the bore hole in order to prevent groundwater contamination.

II. CORE HOLES

Core holes are made for the purpose of obtaining a rock core sample in proposed roadway locations where rock is encountered. These borings are made with a 6 inch auger from the surface to the rock line and then extended to a pre-determined depth with a 3 inch diamond core bit. The present procedure for back-filling these holes is the same as for a bore hole, except small rock fragments and soil are used to fill the hole to prevent backfill subsidence.

III. OBSERVATION WELLS

One-inch diameter PVC perforated pipe or casing is installed in holes where the water table is encountered and water table readings are needed over a period of time. Once the pipe is installed, the hole is back-filled with drill cuttings to the original ground surface. The pipes are capped to prevent the entrance of surface water.

SCOPE—Cont'd

IV. HOLES FOR INCLINOMETER CASING

Slope Incliner Casing is installed in 6-inch diameter holes to monitor slope movement. Gravel or chip stone is used to backfill around the casing to approximately 3 feet below the surface and the remainder of the hole is filled with cuttings from the boring and adjacent soil if necessary. The backfill material is sloped-off at the surface to prevent the infiltration of surface water.

V. IMPLEMENTATION, TRAINING, AND INSPECTION

The back-filling of geotechnical borings as described herein, is the current policy of the Geotechnical Branch and has already been implemented. The Groundwater Protection Plan has been explained and discussed with drillers and geotechnical personnel.

Training sessions are held with drillers on an annual basis. New employees are trained in the field under an experienced driller for one (1) year or more before they become drillers. The chief driller is responsible for the activities of the crew and works directly under the supervision of an engineer or geologist.

An engineer or geologist will make spot checks to ensure that borings have been properly back-filled in accordance with the Groundwater Protection Plan.

CONCLUSION

Borings made for the design of a roadway project are destroyed (cut out) in the cut areas and filled over with compacted soils in the embankment areas when the project is constructed. Considering the small diameter of the holes (4-6 inches) drilled by the Geotechnical branch and the extra effort made in back-filling these holes, there is little chance of any groundwater contamination resulting from geotechnical borings.

PREQUALIFICATION REQUIREMENTS

GEOTECHNICAL SERVICES

- Drilling

PROPOSAL FOR GEOTECHNICAL DRILLING SERVICES ON LAND

- Region 1
- Region 2
- Region 3
- Contract Rates for July 1, 2006 - June 30, 2008 KYTC drilling contracts.

PROJECT SCHEDULE & MILESTONES

RESPONSE DATE February 12, 2008 4:30 p.m. (Frankfort Time)

SELECTION COMMITTEE MEETING January 30, 2008

NOTICE TO PROCEED March 1, 2008

COMPLETION OF SERVICES June 30, 2010

EVALUATION FACTORS

1. The ability for a firm to supply more than one track drill with an automatic hammer. (10 points) Firms with only one track drill with an automatic hammer (5 points).
2. Past record of performance by firm on projects of similar type and complexity. (70 points)
3. Ability to provide drilling services in January and February. (10 points)
4. Number of crews a firm can supply with automatic hammers, up to a maximum of three crews. (A minimum crew is considered to be two people, drill and all equipment needed to perform drilling operations. (10 points)

SELECTION COMMITTEE MEMBERS

1. Michael Blevins, P.E., User Division
2. William Broyles, P.E., User Division
3. Ed McCracken, Secretary's Pool
4. Patty Dunaway, Secretary's Pool
5. Edwin Dyer, Governor's Pool