

BOARD OF SUPERVISORS

MADISON COUNTY, MISSISSIPPI


Department of Engineering/Road Management
Dan Gaillet, P.E., County Engineer/ Road Manager

3137 South Liberty Street, Canton, MS 39046
Office (601) 855-5670 FAX (601) 859-5857

MEMORANDUM

July 21, 2016

TO: Sheila Jones, Supervisor, District I
Trey Baxter, Supervisor, District II
Gerald Steen, Supervisor, District III
David Bishop, Supervisor, District IV
Paul Griffin, Supervisor, District V

FROM: Dan Gaillet, P.E. 
County Engineer/Road Manager

RE: Purvis Bridge-Geotechnical Services
Burns Cooley Dennis, Inc.

As part of the Purvis Bridge Project, geotechnical services are required to develop a foundation/piling design and ensure that the construction is meeting all the geotechnical requirements. The fee for this phase of the project is not to exceed \$13,184.85.

Since this fee now pushes this project beyond my \$50,000.00 authorization for General Engineering Services, I am requesting Board authorization to allow Burns Cooley Dennis, Inc. be tasked with performing the geotechnical services for this project.

SHEILA JONES
District One

TREY BAXTER
District Two

GERALD STEEN
District Three

DAVID BISHOP
District Four

PAUL GRIFFIN
District Five

BURNS GOOLEY DENNIS, INC.

GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

Corporate Office

551 Sunnybrook Road
Ridgeland, MS 39157
Phone: (601) 856-9911
Fax: (601) 856-9774

Mailing Address

Post Office Box 12828
Jackson, MS 39236

www.bcdgeo.com

Materials Laboratory

278 Commerce Park Drive
Ridgeland, MS 39157
Phone: (601) 856-2332
Fax: (601) 856-3552

July 19, 2016

Madison County Board of Supervisors
3137 South Liberty Street
Canton, Mississippi 39046

Proposal No. 16001P-159

Attention: Dan Gaillet, P.E.

Re: Geotechnical Investigation
Bridge over Spring Creek
Madison County, Mississippi

Gentlemen:

We are pleased to submit this revised proposal for conducting a geotechnical investigation for the referenced project. Our general understanding of the project is based on Mr. Brad Griffin's (Mendrop Engineering Resources) e-mail message dated July 13, 2016 and the attached drawings.

We understand that plans are being made for the bridge repair or partial replacement of the bridge over Spring Creek along Purvis Road in Madison County, Mississippi. We understand that that the existing bridge is about 75 ft long and is supported at the abutments and at three interior bents by timber piles. There are two options for the proposed repairs. Both options include adding two 19 ft long concrete spans to the south side. Alternative B also includes removing the middle bent and replacing it with a longer span of about 38 ft. Plans are to support the new portions of bridge on driven piles.

The scope and estimated cost of the geotechnical investigation are described in the following subsections.

Item A. Perform field exploration as necessary to establish proper bridge foundation criteria.

1. Two (2) borings will be made for the bridge replacement to a depth of 70 ft.
2. Soil samples will be obtained in the borings. These samples will be taken at intervals necessary to produce continuous logs. The sampling interval will not exceed 5 feet to a depth of 50 feet and 10 ft beyond this depth.

Undisturbed soil samples will be obtained in cohesive soil zones (AASHTO T207). Standard penetration tests will be conducted in cohesionless soil zones and in cohesive soil zones too hard to sample with a Shelby tube (AASHTO T206).

All soils encountered will be described, and a generalized soil profile will be developed and drawn, showing as a minimum the ground line profile, soil zone stratification, locations of the borings, and results of the standard penetration tests. A detailed log of each boring will be prepared by a professional engineer.

Item B. Perform laboratory tests to determine necessary classification and design parameters.

1. Laboratory testing of the soil samples obtained during field exploration will be performed to adequately determine necessary classification and design parameters. The following characteristics will be determined: Atterberg limits, field moisture content, unit mass, grain size, and cohesive shear strength. A sufficient number of tests will be performed on representative samples from each strata designated in the field exploration to adequately determine its shear strength, settlement potential, gradation, and ultimate bearing capacity.
2. Unconfined compression and unconsolidated-undrained triaxial compression tests will be used to determine the shear strength characteristics of cohesive soils. A wide range of confining pressures will be used with representative samples from each zone to develop a Mohr's failure envelope.

Item C. Perform pertinent engineering analyses and prepare a report.

1. Foundation conditions, together with typical bent loads and elevations furnished by Mendrop Engineering Resources will be analyzed, to develop feasible foundation support systems and general foundation designs.
2. Capacity curves will be developed in tons vs. feet for various sizes and types of piles. The curves will be developed for all bent locations and will take into account scour depth, if applicable. The sizes and types of piles, bent locations, and scour depths are to be suggested by the Mendrop Engineering Resources. Construction considerations pertaining to pile construction will be provided.
3. Analyses will be performed to evaluate global stability for the spill-through slope. Cross sections to be used in the analyses will be provided by Mendrop Engineering Resources.
4. A report will be prepared describing the results of the investigation, with specific recommendations as to foundation design and construction, and embankment design and construction. The report will be prepared and signed by an engineer licensed in the State of Mississippi with a minimum of 10 years experience in the practice of geotechnical engineering. The report will contain:
 - a. A copy of the boring logs.
 - b. Results of the laboratory tests.
 - c. Locations of the boreholes referenced to the centerline survey and vertical control datum.

Item D. Excluded from this scope of work are:

1. Survey location and elevation of the borings.
2. The design of measures to prevent and/or mitigate liquefaction.
3. Design of any retaining walls.

We would perform the scope of work outlined in the preceding paragraphs for an estimated fee of \$13,184.85. We would only invoice for the services provided not to exceed this amount, unless the scope of services is expanded. We would invoice at the rates included in the Agreement for Professional Services between the Madison County Board of Supervisors and Burns Cooley Dennis, Inc. dated May 16, 2016. If it becomes necessary to expand the scope of services, we would estimate the additional charges and request approval before proceeding. The estimated fee does not include any special consultation services beyond that required to clarify the recommendations presented in the report.

Burns Cooley Dennis, Inc. will retrieve the proper sample type, and establish a laboratory testing program which will meet the project requirements. Burns Cooley Dennis, Inc. will exercise the degree of skill ordinarily practiced in the field of geotechnical engineering to determine the type of sample retrieval and laboratory testing program.

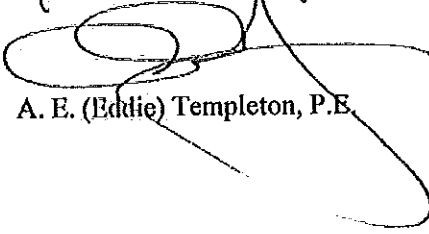
In developing the cost estimate for this proposal, we assumed that the site would be accessible to truck-mounted drilling equipment. We also assumed there would not be any inordinate delays for the drill crew related to locating and avoiding underground utilities. It should be noted that our estimated charges do not include any costs for boring layout and for determining ground surface elevations at the boring locations. We would require the assistance of Mendrop Engineering Resources to accomplish those tasks.

We appreciate the opportunity to submit this proposal. A copy of this letter and attached agreement for professional services by and between Madison County Board of Supervisors and Burns Cooley Dennis, Inc. for Geotechnical and Pavement Engineering Services, dated May 16, 2016, have been provided via e-mail for review. If the scope of services and estimated fee described in the preceding paragraphs are acceptable, please issue your executed agreement. We look forward to conducting the geotechnical investigation for this project.

Very truly yours,

BURNS COOLEY DENNIS, INC.


Marcos V. F. Rodrigues, P.E.


A. E. (Eddie) Templeton, P.E.

AET/MR/dar
Copy Submitted: (via e-mail)
Attachments

AGREEMENT FOR PROFESSIONAL SERVICES
BY AND BETWEEN
MADISON COUNTY BOARD OF SUPERVISORS
AND
BURNS COOLEY DENNIS, INC.
FOR
GEOTECHNICAL AND PAVEMENT ENGINEERING SERVICES

THIS AGREEMENT, made effective this the *May 16*, 2016 by and between MADISON COUNTY BOARD OF SUPERVISORS, hereafter called the OWNER, and BURNS COOLEY DENNIS, INC., Consulting Engineers, having its principal place of business at 551 Sunnybrook Road in Ridgeland, Mississippi 39157, hereinafter called the GEOTECHNICAL ENGINEER

WITNESSETH :

WHEREAS, the OWNER desires to employ the services of the GEOTECHNICAL ENGINEER for the purpose of supporting, supplementing and advising the OWNER in matters of planning and construction by third party interests as such matters are governed by the OWNER's ordinances in effect at the time of review, and

WHEREAS, the OWNER further desires to employ the services of the GEOTECHNICAL ENGINEER for the purpose of supporting and supplementing the OWNER's mission to construct, re-construct, modify or improve its municipal system, sewer system, streets, roads, bridges, drainage facilities and such other matters that are the corporate responsibility of Madison County, MS, and

WHEREAS, the OWNER desires the GEOTECHNICAL ENGINEER to perform the necessary services on a case by case or project by project basis within the scope defined by

the OWNER at the time of assignment of the work to the GEOTECHNICAL ENGINEER,
and

WHEREAS, the GEOTECHNICAL ENGINEER desires to provide all necessary services that may be required by the OWNER,

NOW THEREFORE, BE IT MUTUALLY AGREED, by and between the OWNER and the GEOTECHNICAL ENGINEER that the GEOTECHNICAL ENGINEER shall perform all assignments in a timely and efficient manner.

OWNER and the GEOTECHNICAL ENGINEER further agree that compensation to the GEOTECHNICAL ENGINEER shall be on an hourly basis and unit rates plus direct related expenses as set forth hereinafter and that the terms and conditions also set forth hereinafter shall govern the services provided by the GEOTECHNICAL ENGINEER.

Part I. GEOTECHNICAL ENGINEERING CHARGES

HOURLY RATES SCHEDULE

A. In accordance with the Terms and Conditions of this Agreement, the GEOTECHNICAL ENGINEER shall provide professional services for which the OWNER shall compensate the GEOTECHNICAL ENGINEER on the basis of the attached unit fee schedule.

SEE ATTACHED STANDARD FEE SCHEDULE 2016

Part II. TERMS AND CONDITIONS

Article 1 GEOTECHNICAL ENGINEER'S SERVICES

1.1 Basic Services

The GEOTECHNICAL ENGINEER agrees to perform professional services in connection with the assigned Projects, including normal geotechnical, pavement and construction phase engineering related thereto, as set forth below and contained within this Agreement.

1.1.1 GEOTECHNICAL ENGINEERING Report (If Applicable)

During the GEOTECHNICAL ENGINEERING Report Phase the GEOTECHNICAL ENGINEER shall:

1.1.1.1 Furnish soils data including but not limited to reports, test borings, test pits, probings, subsurface exploration, soil bearing values, percolation tests, ground corrosion and resistivity tests, all with appropriate professional interpretation.

1.1.2 Construction Phase (If Applicable)

1.1.2.1 Furnish construction observation and materials testing of asphalt, concrete, earthwork or related construction materials to check materials incorporated into the work for compliance with the Project Specifications.

1.1.2.2 The GEOTECHNICAL ENGINEER shall not be responsible for the defects or omissions in the work result of the Contractors, or any Subcontractors, or any of the Contractor's or Subcontractor's employees, or that of any other persons or entities responsible for performing any of the work result as contained in the Construction Contract.

Article 2 OWNER'S RESPONSIBILITIES

The OWNER shall:

2.1 Provide to the GEOTECHNICAL ENGINEER all criteria, design and construction standards and full information as to the OWNER'S requirements for the Project.

2.2 Designate in writing a person authorized to act as the OWNER'S representative. The OWNER or his representative shall receive and examine documents submitted by the GEOTECHNICAL ENGINEER; interpret and define the OWNER'S policies and render decisions and authorizations in writing promptly to prevent unreasonable delay in the progress of the GEOTECHNICAL ENGINEER'S services.

2.3 Guarantee full and free access for the GEOTECHNICAL ENGINEER to enter upon all property required for the performance of the GEOTECHNICAL ENGINEER'S services under this Agreement.

2.4 Give prompt written notice to the GEOTECHNICAL ENGINEER whenever the OWNER observes or otherwise becomes aware of any defect in the Project or other event which may substantially affect the GEOTECHNICAL ENGINEER'S performance of services under this Agreement.

2.5 Compensate the GEOTECHNICAL ENGINEER for services rendered under this Agreement.

Article 3 PAYMENTS TO THE GEOTECHNICAL ENGINEER

3.1 Payments shall be made for the services rendered and as indicated within this Agreement and shall be due and owing within thirty days of the GEOTECHNICAL ENGINEER'S submittal of his monthly statement.

3.2 If the Project is delayed or if the GEOTECHNICAL ENGINEER'S services for the Project are delayed or suspended for more than three months for reasons beyond the GEOTECHNICAL ENGINEER'S control, the GEOTECHNICAL ENGINEER may, after giving seven days written notice to the OWNER, terminate this Agreement and the OWNER shall compensate the GEOTECHNICAL ENGINEER in accordance with the termination provision contained hereafter in this Agreement.

Article 4 GENERAL PROVISIONS

4.1 Ownership of Documents

All Drawings, Specifications and other work product of the GEOTECHNICAL ENGINEER for this Project are instruments of service for this Project only and are the property of the OWNER. GEOTECHNICAL ENGINEER shall have the right to retain copies of all documents and drawings for its files. Reuse of any of the instruments of service of the GEOTECHNICAL ENGINEER by the OWNER on extensions of this Project or on any other project shall be at the OWNER'S risk and the OWNER agrees to defend, indemnify and hold harmless the GEOTECHNICAL ENGINEER from all claims, damages, and expenses including attorney's fees arising out of such unauthorized reuse of the GEOTECHNICAL ENGINEER'S instruments of service by the OWNER OR BY OTHERS ACTING THROUGH THE OWNER. Any reuse or adaptation of the GEOTECHNICAL ENGINEER'S instruments of service occurring after the written agreement of the GEOTECHNICAL ENGINEER shall entitle the GEOTECHNICAL ENGINEER to further compensation in amounts to be agreed upon by the OWNER and the GEOTECHNICAL ENGINEER.

4.2 Delegation of Duties

Neither the OWNER nor the GEOTECHNICAL ENGINEER shall delegate his duties under this Agreement without the written consent of the other.

4.3 Termination

Either party may terminate this Agreement without cause upon thirty (30) days' notice in writing. If either party breaches this Agreement, the non-defaulting party may terminate this Agreement after giving seven (7) days' notice to remedy the breach. On termination of this Agreement, the OWNER shall forthwith pay GEOTECHNICAL ENGINEER for the services performed to the date of termination. OWNER may terminate for convenience, in which case GEOTECHNICAL ENGINEER shall be paid for work completed to date.

4.4 Extent of Agreement

This Agreement represents the entire and integrated agreement between the OWNER and the GEOTECHNICAL ENGINEER and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both the OWNER and the GEOTECHNICAL ENGINEER.

4.5 Governing Law

Unless otherwise specified within this Agreement, this Agreement shall be governed by the law of Madison County and the State of Mississippi.

4.6 General

4.6.1 Should litigation or arbitration occur between the two parties relating to the provisions of this Agreement, all litigation or arbitration expenses, collection expenses, witness fees, court costs and attorneys' fees incurred by the prevailing party shall be paid by the non-prevailing party to the prevailing party.

4.6.2 Neither party shall hold the other responsible for damages or delay in performance caused by acts of God, strikes, lockouts, accidents, or other events beyond the control of the other or the other's employees and agents.

4.6.3 In the event any provisions of this Agreement shall be held to be invalid and unenforceable, the remaining provisions shall be valid and binding upon the parties. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of a subsequent breach of the same by the other party.

4.6.4 The GEOTECHNICAL ENGINEER intends to render his services under this Agreement in accordance with generally accepted professional practices for the intended use of the Project and makes no warranty either express or implied.


Article 5. INSURANCE

6.1. GEOTECHNICAL ENGINEER represents that it and its agents, staff and consultants employed by it, is and are protected by workers' compensation insurance, commercial general and umbrella liability insurance, automobile liability insurance and professional liability insurance which we deem to be adequate. Certificates of insurance for all such policies shall be provided to Owner upon request in writing. Within the limits and conditions of such insurance, BCD agrees to indemnify and save Owner harmless from and against any loss, damage or liability arising from any negligent acts by BCD and its agents, staff and consultants employed by Geotechnical Engineer. Geotechnical Engineer shall not be responsible for any loss, damage, or liability beyond the amounts, limits and conditions of such insurance. Geotechnical Engineer shall not be responsible for any loss, damage or liability arising from any acts by Owner, its agents, staff and other consultants employed by Owner.

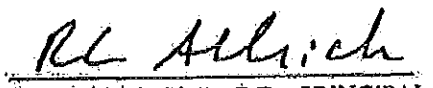
IN WITNESS WHEREOF, the parties hereto have caused these presents to be signed by their duly authorized representatives on the day and year first above written.

MADISON COUNTY, MISSISSIPPI

BURNS COOLEY DENNIS, INC.





TREY BAXTER
BOARD PRESIDENT



R. C. Ahlrich, Ph.D., P.E., PRINCIPAL

ATTEST:



RONNY LOTT
CHANCELLER
(SEAL)


(SEAL)

**SCHEDULE OF FEES
 GEOTECHNICAL SAMPLING AND TESTING
 CONSTRUCTION MATERIALS ENGINEERING AND TESTING SERVICES**

Personnel

Personnel charges are for professional, technical and support services required on projects including office, field and travel time.

Project Manager	175.00
Project Engineer	145.00
Engineer	125.00
Structural Steel Inspector	100.00
Lab/Field Supervisor	85.00
Technician	65.00
Draftsperson	60.00
Administrative/Clerical	55.00

Other Project Charges

Expenses and subcontractor services incurred directly for the project	Cost + 15%
Automobile and light truck	\$0.60/mile
Subsistence	\$130.00/day
Pile Driving Analyzer (PDA) equipment	\$765.00/day
CAPWAP software usage	\$116.00
Photocopies - 8.5" x 11"	\$0.15/copy
Photocopies - 11" x 17"	\$0.25/copy

SUBSURFACE EXPLORATION FEES

Mobilization/Demobilization

Transportation from office to jobsite and return	
Drill rig, water truck, pickup truck and crew	\$5.00/mi
Drill rig, pickup truck and crew	4.50/mi
Pickup truck and crew	140.00/1hr

Drilling and Sampling

Soil borings with 3-in. OD Shelby tube and/or ASTM split-spoon samples	
a.	Samples at 5-ft intervals
(1)	Zero to 50-ft depths 18.75/ft
(2)	50-ft to 100-ft depths 22.00/ft
(3)	100-ft to 150-ft depths 25.25/ft
b.	Continuous sampling
(1)	Zero to 10-ft depths 21.00/ft
(2)	10-ft to 20-ft depths 24.75/ft
(3)	20-ft to 30-ft depths 28.50/ft
(4)	30-ft to 40-ft depths 32.25/ft
c.	Extra 3-in. OD Shelby tube or ASTM split-spoon samples
(1)	Samples, zero to 50-ft depths 35.75/ea
(2)	Samples, 50-ft to 100-ft depths 51.50/ea
(3)	Samples, 100-ft to 150-ft depths 67.25/ea
Rotary wash borings, hole logged from cuttings, but without sampling 11.75/ft	

Machine auger borings with disturbed samples	
a. Zero to 20-ft depths	15.00/ft
b. Deeper than 20 ft	On request
Hand auger borings with disturbed samples	
a. Zero to 10-ft depths	18.75/ft
b. Deeper than 10 ft	On request
Surcharge for drilling and sampling using swamp-buggy-mounted drill rig and water-buggy	20%
Setting and pulling casing in excess of 5 ft	1.25/ft
Rock drilling	31.00/ft
NX rock coring	48.00/ft

Other Field Operations

Boring layout by drill crew	130.00/hr
Standby of 3-man crew and equipment and moving time in excess of 30 min. per boring	180.00/hr
Hourly rate for borings, setting piezometers, monitoring wells, and slope inclinometer casing, or other field operations using a 3-man crew and truck-mounted equipment	200.00/hr
Pavement patch/corehole	20.00/ca
Grouting	5.25/ft

Equipment Rental and Special Materials

Rental cost of dozer; subcontract costs; surveying costs; cost of piezometer or observation well materials; or other special equipment or materials required Cost + 15%

Crew Subsistence Allowance

Overnight expenses per man 130.00/day

SOILS LABORATORY FEES

Strength and Compressibility Tests

Unconfined compression test	\$45.00
Triaxial compression test/specimen	
a. Unconsolidated-undrained	80.00
b. Consolidated-undrained w/ppm	250.00
Preparation of remolded or compacted specimens for unconfined or triaxial compression tests	65.00
Consolidation test	
a. Using 8 load increments	500.00
b. Each additional load increment	70.00
Swell/rebound test	310.00
Swell Test	160.00
Note: The above tests include determination of natural water content and density.	

Classification Tests

Liquid and plastic limits (1-pt)	60.00
Liquid and plastic limits (3-pt)	75.00
Shrinkage limit	75.00
Visual classification	5.00

Sieve analysis	
a. Sands.....	100.00
b. Gravels and sand-gravel mixtures.....	185.00
Percent finer than No. 200 sieve.....	40.00
Hydrometer.....	125.00

Other Physical Tests

Water content	7.00
Density of undisturbed sample	27.50
Specific gravity (fine-grained soil)	125.00
Permeability (ASTM D 5084).....	405.00
Compaction (ASTM D 698 or 1557)	
a. Standard	225.00
b. Modified.....	250.00
Torvane	5.00
Table vane shear	29.00
California Bearing Ratio (1-pt).....	350.00
California Bearing Ratio (3-pt).....	600.00

Note: Samples from geotechnical investigations that are not tested will be retained for 60 days after issuance of the report, unless otherwise requested.

CONSTRUCTION MATERIALS TESTING FEES

Soils and Aggregates

Sieve analysis - fine aggregate	\$100.00
Sieve analysis - coarse aggregate.....	85.00
Sieve analysis - crushed stone/concrete base	125.00
Sieve analysis - gravel base.....	185.00
Specific gravity - soil	125.00
Specific gravity - fine aggregate	125.00
Specific gravity - coarse aggregate.....	100.00
Minus No. 200 wash.....	40.00
Hydrometer.....	125.00
Liquid and plastic limits (1-pt).....	60.00
Liquid and plastic limits (3-pt).....	75.00
Shrinkage limit.....	75.00
Fine aggregate angularity.....	185.00
Fractured faces - coarse aggregate	100.00
Flat and elongated particles.....	100.00
Sand equivalent	100.00
LA abrasion.....	275.00
Soundness.....	275.00
Compaction (ASTM D 698 or 1557)	
a. Standard	225.00
b. Modified.....	250.00

Hot Mix Asphalt (HMA)

Asphalt Cores

Bulk specific gravity.....	25.00
Asphalt content (extraction).....	100.00
Aggregate gradation (extracted aggregate).....	100.00
Maximum specific gravity (Rice method).....	125.00
Sample preparation (per core).....	35.00

Loose Bulk HMA Materials

Asphalt content (extraction).....	100.00
Aggregate gradation (extracted aggregate).....	100.00
Maximum specific gravity (Rice method).....	125.00
Asphalt cement recovery.....	300.00
Marshall compaction and density.....	75.00
Marshall stability and flow.....	50.00
SHRP gyratory compaction and density.....	100.00

Mix Designs

Marshall method.....	3,000.00
Superpave gyratory method.....	6,000.00
Moisture susceptibility (TSR).....	750.00

Asphalt Binder:

Specific gravity.....	\$100.00
Penetration.....	100.00
Kinematic viscosity.....	100.00
Absolute viscosity.....	100.00
Satellite hold.....	100.00
Dynamic shear rheometer (DSR).....	125.00
Bending beam rheometer (BBR).....	75.00
Brookfield viscosity.....	100.00
RTFO aging.....	150.00
PAV aging.....	150.00
PG grading.....	1,250.00/sample
PG verification.....	1,000.00/sample

Concrete

Compressive strength test of cylinders.....	20.00
Core (trimmed and capped).....	50.00
Flexural strength test of beams.....	75.00
Splitting tensile test of cylinders.....	75.00

Other Project Charges

Asphalt coring (plus charges for technician time and mileage).....	12.00/in.
Concrete coring (plus charges for technician time and mileage).....	18.00/in.
Pavement patch - corehole.....	20.00
Pavement patch - beam.....	40.00
Nuclear gauge equipment.....	20.00/day
Dipstick equipment (plus charges for technician time and mileage).....	150.00/day
GPR equipment.....	250.00/day
Truck fee.....	30.00/day