

EXHIBIT “E”
HIDALGO COUNTY
Professional Engineering Services
Agreement # C-22-0074-03-22

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of the **Professional Engineering Services Agreement No. C-22-0074-03-22**, incorporated herein by reference, for the **“Geotechnical & Construction Materials Testing & Observation for Terry Road – Rogers to North Branch Drain & North Branch Drain Crossings located in Precinct 4”** made by and between **HIDALGO COUNTY**, action herein by and through the **Commissioner’s Court**, hereinafter called the **“Owner,”** and **Terracon Consultants, Inc.**, hereinafter called **“Engineer”**.

PART 1. SCOPE OF WORK

The purpose of this Work Authorization is for the Engineer to provide **Construction Materials Testing for Terry Road – Rogers to N. Branch Drain & N. Branch Drain Crossing**

The **Engineer** is to provide the scope of Services as required by the Agreement with Owner.

The scope of services to be provided by the **Engineer** is identified in **Attachment “A” – “EXHIBIT “C” – Project Specific Scope of Services to be provided by Engineer”** attached hereto and incorporated by reference.

PART 2. ESTIMATED COST

The estimated cost for services under this Work Authorization is **\$40,575.00**. This amount is based upon the costs outlined in the **Attachment “B” – “EXHIBIT “D” – Contract Rates”** attached hereto and incorporated by reference.

PART 3. PAYMENT

Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with the **Professional Engineering Services Agreement No. C-22-0074-03-22** between the **Owner** and the **Engineer**.

PART 4. FUNDING

This Work Authorization No.1 shall be funded through funding source:

Account No. _____

Requisition Number: **00450849 (MUST BE INCLUDED AFTER CC APPROVAL)**

PART 5. PERIOD OF SERVICE

This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate **upon completion of the scopes of the Work Authorization, within the limits of Agreement No. C-22-0074-03-22, provided in this Work Authorization.**

PART 6. RESPONSIBILITIES AND OBLIGATIONS

This Authorization does not waive the parties' responsibilities and obligations provided under the **Agreement No. C-22-0074-03-22.**

PART 7. ACKNOWLEDGEMENT AND CONFIRMATION

Acknowledgement and confirmation by Hidalgo County Precinct No. 4 Commissioner Ellie Torres, as to content and detail of this Work Authorization No. 1.

**HIDALGO COUNTY
COMMISSIONER PRECINCT No. 4:**

BY: _____

PART 8. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on _____ as indicated below and effective as of _____ day of _____, 2022.

THE ENGINEER:
Terracon Consultants, Inc.,

THE OWNER:
HIDALGO COUNTY

By: _____

By: Richard F. Cortez, County Judge

ATTEST:

By: Arturo Guajardo Jr., County Clerk

LIST OF ATTACHMENTS:

Attachment "A" – EXHIBIT "C" – Project Specific Scope of Services to be provided by Engineer
Attachment "B" – EXHIBIT "D" – Contract Rates

Attachment "A" - Exhibit C

March 10, 2022



Hidalgo County Purchasing Department
2802 S. Business Highway 281
Edinburg, TX 78539

Attn: Mr. Jaime "JD" Cortez
P: (956) 318-2626 Ext. 4882
E: jaime.cortez@co.hidalgo.tx.us

Re: Proposal for Materials Testing Services
Terry Road - Rodgers to N. Branch Drain & N. Branch Drain Crossings
Edinburg, Texas
Terracon Proposal No.: P88221045R

Dear Mr. Cortez:

Terracon Consultants, Inc. (Terracon) is pleased to submit this estimate for the construction materials testing services for the above referenced project. We are presenting this proposal to confirm our understanding of the services to be performed for this project, to obtain written authorization to provide these services, and to present the estimated fee to provide these services. Please note that this proposal was revised to reduced our scope of services based on the verbal information provided by Mr. Omar Anzaldua, P.E. with Hidalgo County Drainage District No.1, on Tuesday, March 8, 2022. **We understand that we have been chosen to provide these services for this publicly funded project. Therefore, by providing cost information we are not in violation of the Texas Professional Services Procurement Act.** The following sections outline our understanding of the project and provide a description of the tasks to be performed.

A. PROJECT INFORMATION

A.1 Site Location

ITEM	DESCRIPTION
Location	The proposed site is located in the vicinity of the intersection of Rodgers Road and Terry Road in Edinburg Texas.
Existing improvements	Existing hot-mix asphaltic concrete (HMAC) roadways, concrete driveways, and grass areas.
Current ground cover	HMAC and concrete pavements, and native grass.
Existing topography	Relatively flat and level.

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A.2 Project Description

ITEM	DESCRIPTION
Project Description	The proposed improvements will consist of the demolition and reconstruction of roadways at some crossing locations, including preparation of the subgrade and flexible base and reconstruction of concrete driveways impacted and inlets. The proposed improvements will also include the installation of new rip rap at several location along the project site and installation of drain lines.
Grading	Refer to civil plans.
Cut and fill slopes	Refer to civil plans.
Construction Type	The reconstruction of the road crossing will consists of HMAC pavements. The construction of the new inlet boxes, driveways, and rip rap structures will consist of in-place concrete

Should any of the above information be inconsistent with the planned construction please let us know so that we may make any necessary modifications to this proposal.

B. SCOPE OF SERVICES

Terracon will perform materials testing in general accordance with the project specifications. The time required for quality control testing during the construction phase on the project is directly related to the contractor’s scheduling and performance. Therefore, our fee for materials testing and observation services will be based upon applicable unit prices and hourly rates. Our anticipated scope of services is as follows:

- Field density/moisture testing and laboratory evaluation of soils;
- Field testing and laboratory evaluation of concrete
- Field testing and laboratory evaluation of asphaltic concrete materials used during pavement construction.

Experienced field/laboratory personnel will be provided for testing services. All field/laboratory materials testing/inspection will be performed under the direction of a Texas Registered Professional Engineer. A detailed scope of services envisioned to complete the testing is as follows:

SOILS

The field services will be supported by appropriate laboratory evaluation of soils used as fill or backfill on the site. The laboratory testing will include laboratory moisture-density relationship (Proctor), with sieve analysis and Atterberg limits determinations for classification and/or

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determination of import fill suitability. Laboratory material evaluations will be conducted as specified for each type of soil encountered during fill placement. The testing will be performed to check compliance with project specifications. The project contractor and construction manager personnel on the site will be informed of our field observations and test results. Written reports of test results will be prepared on a regular basis throughout the project duration and distributed per your directive.

CONCRETE

An American Concrete Institute (ACI) or equivalent Certified Engineering Technician will be provided on an as-requested basis to sample the plastic concrete used during construction and observe the reinforcing steel placement. The concrete will be tested for slump, air content and temperature at the time of placement. Sets of concrete cylinders will be molded at each sampling.

All samples will be field cured at the site and returned to our laboratory for additional curing prior to compressive strength testing. Please note that it is our understanding that the general contractor will provide curing boxes to protect the concrete cylinders at the project site. Compressive strength testing will be conducted at 7-days (1 specimen), 28-days (2 specimens) and 56-Day (1 Specimen) intervals to determine compliance with project specifications. All test results will be conveyed after testing is completed.

ASPHALT

Observations/testing will be performed by, or under the direction of a TxDOT Level 1A and 1B Certified Technician on as requested basis during placement of asphalt at the project. The asphalt will be sampled and submitted to our laboratory for Mix Properties, asphalt content and aggregate grain size distribution to verify compliance with project specifications. Asphalt cores will confirm thickness and nuclear gauge density.

PROJECT MANAGEMENT

The project manager will be the point of contact for the project and his duties include as related materials testing and observation services the following:

- a) Attend construction meetings, on as scheduled basis
- b) Review concrete mixes submitted, on as scheduled basis
- c) Coordinate field and laboratory testing,
- d) Communicate with Terracon field technicians, Contractor, and Owner's site representative,
- e) Review laboratory and field test reports,
- f) Control our budget and invoice.
- g) Performing site visits to the project site.

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h) Provide technical assistance.

C. COMPENSATION

We estimate the fee of our services to be as shown in the following table:

Task	Fee
Base Bid	\$ 24,935.00
North Branch Drain	\$ 15,640.00
Total	\$ 40,575.00

A breakdown of the fee for each campus is outlined in the attached Tables 1 & 2. **Please recognize that this is an estimate.** We will only invoice for the actual services and required laboratory tests. In the event that construction activities do not require the time we have estimated, the fee will be lower than our estimated fee. If more services are required due to conditions such as scheduling, inclement weather, or retesting, this fee estimate may be exceeded.

If it becomes apparent to Terracon that the requested services cannot be performed within the estimated fee and proposed testing and observation quantities, we will submit a written request for a change order. Our estimated fee and any services due to change orders will be provided at the unit rates shown in Table 1.

Please be aware that we will be unable to distribute field and laboratory reports until a signed contract is received.

The applicable field rate will be invoiced for all hours worked, including travel time, report and sample preparation. Technician time will be invoiced on a portal-to-portal basis from our office. Overtime rates on 1.5 times the regular hourly rate will be charged for time worked outside normal workday hours of 8:00 am to 5:00 pm and over eight (8) hours per day, Monday through Friday and for hours worked on Saturday. Hours worked on Sunday or holiday will be invoiced at the rate of 2.0 times the regular hourly rates. A minimum of three (3)-hour charge will be invoiced per visit to the project site, Project Management/Clerical services will be invoiced on hours worked, unless otherwise noted on the attached Table 1. Hours will be rounded up to the next whole number.

Scheduling – It is the responsibility of the contractor or your designated representative to notify Terracon, in advance (minimum of 24 hour notice), for testing services required on this project. Our services will be performed on an as requested basis. Terracon will not be responsible for scheduling our services and will not be responsible for tests that are not performed due to failure to schedule our services on the project. Scheduling for your convenience is handled by our Dispatcher (956) 283-8254.

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Data Collection and Reporting

All field technicians are responsible to provide daily reports identifying what work was found to be in compliance with the project specifications and drawings and report any non-conformances. The field technicians are required to immediately communicate any non-conformances to the site superintendent and our Project Manager. Effective and timely communication is essential for non-conforming items. Our Project Manager will be responsible for reviewing each technician's reports, keeping non-conformance lists up to date, and communicating test results in a timely manner.

To ensure our Project Manager and Field Personnel meet the goals we have set for report turnaround, we have developed report tracking software to evaluate the status of any test result or report within our system. This allows us to achieve better communication, more consistency, and faster turnaround of reporting on the project. Data, observations, and other testing and inspection information are easily entered into the system allowing for immediate availability for quality review and electronic distribution of reports.

Terracon will maintain non-conformance logs and lists for all testing types performed by us. The list will be maintained electronically in our database and can be updated and e-mailed or printed at any time.

CMELMS™ Management System

In order to provide our clients with real-time field and laboratory data management and reporting, Terracon developed and maintains an automated application that we call CMELMS. The acronym stands for **Construction Materials Engineering Laboratory Management System** and is utilized by construction materials engineering and testing operations in our offices.

CMELMS is a complete and comprehensive field and laboratory testing data and results management system. It automates the delivery of our testing and inspection information and can be used anywhere with an internet connection or through a wireless device. Data (test results and inspections) can be entered into the application right from the project site so that project managers and engineering staff have real-time access to the field data. Final Client Reports are produced in the same application, which allows us to achieve better communication, more consistency, and faster turnaround of reports on the project.

Report Turnaround Time

Our Project Managers and/or field technicians will report failing tests or non-conformance items immediately to the designated parties and will typically have digitally signed reports distributed by the end of the next business day. As stated, using our CMELMS software and our field reporting and communication services and capabilities, the test results and inspection information is quickly entered into the system and a report produced. Non-deviation reports will typically be digitally signed and distributed within 3 to 5 business days of service. Laboratory test reports will typically be digitally signed and distributed within 2 business days of the completion of each test. Our reports

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can be sent digitally via email, posted to our Client Document Website (CDW), or posted to a designated ftp website.

Terracon's Incident and Injury-Free Culture

Employee safety is a core value of Terracon and we are committed to an Incident and Injury-Free (IIF) workplace. It is our personal and organizational commitment at all levels of the company to everyone going home safe to their family every day. All employees are expected to perform their job assignments with safety as a primary objective. Terracon dedicates the time, resources, and equipment necessary for an IIF environment and no employee will be required to work in unsafe conditions.

Approval – If this Scope of Services meets with your approval, work may be initiated by returning an original copy of this proposal to our Pharr office. Project initiation may be expedited by emailing a copy of this signed proposal to lupe.leal@terracon.com. Unless requested otherwise, a hard copy of this proposal will not be mailed to you.

The terms, conditions and limitations stated in the **Professional Services Agreement, between Hidalgo County and Terracon Consultants, In. dated January 6, 2022** (and sections of this proposal incorporated therein), shall constitute the exclusive terms and conditions and services to be performed for this project. This proposal is valid only if authorized within 90 days from the proposal date.

We thank you for this opportunity to be of service, and we look forward to working with you on this project. If you have any questions, please contact one of the undersigned at (956) 283-8254.

Sincerely,

Terracon Consultants, Inc.

(Firm Registration: TX F3272)

Guadalupe Leal
Project Manager

Alfonso A. Soto, P.E., D.GE, F.ASCE
Senior Principal

Enclosure(s): Tables 1 & 2 Estimated Fee Summary
Distribution Sheet

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**TABLE 1
 ESTIMATED FEE SUMMARY
 Base Bid**

Our fee estimate is in accordance with the time and tests performed as shown below:

Earthwork Observation/Testing				
Service	Quantity	Unit	Unit Rate	Estimate
Soil Engineering Technician	165	Hour	\$ 50.00	\$ 8,250.00
Moisture/Density Curve Soil (ASTM D698)	7	Each	\$ 225.00	\$ 1,575.00
Moisture/Density Curve Flexbase (ASTM D1557)	1	Each	\$ 275.00	\$ 275.00
Atterberg Limits (ASTM D4318)	7	Each	\$ 75.00	\$ 525.00
Sieve Analysis, -200 Sieve	6	Each	\$ 60.00	\$ 360.00
Sieve Analysis	4	Each	\$ 110.00	\$ 440.00
Nuclear Density Test	200	Each	\$ 11.50	\$ 2,300.00
Vehicle Trip Charge	55	Trip	\$ 40.00	\$ 2,200.00
Subtotal, Earthwork				\$ 15,925.00
Concrete Observation/Testing				
Service	Quantity	Unit	Unit Rate	Estimate
Concrete Engineering Technician	84	Hour	\$ 50.00	\$ 4,200.00
Concrete Cylinders, (ASTM C31 & C39)	60	Each	\$ 15.00	\$ 900.00
Vehicle Trip Charge	24	Trip	\$ 40.00	\$ 960.00
Subtotal, Concrete				\$ 6,060.00
Hot-Mix Asphaltic Concrete Observation/Testing				
Service	Quantity	Unit	Unit Rate	Estimate
Asphalt Engineering Technician	4	Hour	\$ 50.00	\$ 200.00
Extraction/Gradation of Bitumous Mixtures	1	Each	\$ 175.00	\$ 175.00
Theoretical Maximum Specific Gravity	1	Each	\$ 110.00	\$ 110.00
Mixing/Molding of Specimens	1	Each	\$ 175.00	\$ 175.00
Vehicle Trip Charge	1	Trip	\$ 40.00	\$ 40.00
Subtotal, Hot Mix Asphaltic Concrete				\$ 700.00
Project Management				
Project Management	25	Hour	\$ 90.00	\$ 2,250.00
ESTIMATE TOTAL				\$ 24,935.00

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**TABLE 2
 ESTIMATED FEE SUMMARY**

North Branch Drain

Our fee estimate is in accordance with the time and tests performed as shown below:

Earthwork Observation/Testing				
Service	Quantity	Unit	Unit Rate	Estimate
Soil Engineering Technician	75	Hour	\$ 50.00	\$ 3,750.00
Moisture/Density Curve Soil (ASTM D698)	4	Each	\$ 225.00	\$ 900.00
Moisture/Density Curve Flexbase (ASTM D1557)	1	Each	\$ 275.00	\$ 275.00
Atterberg Limits (ASTM D4318)	4	Each	\$ 75.00	\$ 300.00
Sieve Analysis, -200 Sieve	4	Each	\$ 60.00	\$ 240.00
Sieve Analysis	2	Each	\$ 110.00	\$ 220.00
Nuclear Density Test	80	Each	\$ 11.50	\$ 920.00
Vehicle Trip Charge	25	Trip	\$ 40.00	\$ 1,000.00
Subtotal, Earthwork				\$ 7,605.00
Concrete Observation/Testing				
Service	Quantity	Unit	Unit Rate	Estimate
Concrete Engineering Technician	98	Hour	\$ 50.00	\$ 4,900.00
Concrete Cylinders, (ASTM C31 & C39)	35	Each	\$ 15.00	\$ 525.00
Vehicle Trip Charge	14	Trip	\$ 40.00	\$ 560.00
Subtotal, Concrete				\$ 5,985.00
Hot-Mix Asphaltic Concrete Observation/Testing				
Service	Quantity	Unit	Unit Rate	Estimate
Asphalt Engineering Technician	4	Hour	\$ 50.00	\$ 200.00
Extraction/Gradation of Bitumous Mixtures	1	Each	\$ 175.00	\$ 175.00
Theoretical Maximum Specific Gravity	1	Each	\$ 110.00	\$ 110.00
Mixing/Molding of Specimens	1	Each	\$ 175.00	\$ 175.00
Vehicle Trip Charge	1	Trip	\$ 40.00	\$ 40.00
Subtotal, Hot Mix Asphaltic Concrete				\$ 700.00
Project Management	15	Hour	\$ 90.00	\$ 1,350.00
ESTIMATE TOTAL				\$ 15,640.00

DISTRIBUTION SHEET

Thank you for choosing Terracon Consultants, Inc. to provide these services. Please fill out below the pertinent information below so that we may expedite report distribution, project correspondence and invoice(s) to appropriate person (s). If you have any questions please do not hesitate to contact our office.

Project Name: _____

Client

Copies _____ Firm _____
Address _____
Attn: _____ P _____ F _____
Email: _____

Invoice (do not complete if same as client)

Copies _____ Firm _____
Address _____
Attn: _____ P () _____ F () _____
Email: _____

Report Distribution (Clients, Architects, Engineers, Contractors, etc...)

Copies _____ Firm _____
Address _____
Attn: _____ P () _____ F () _____
Email: _____

Copies _____ Firm _____
Address _____
Attn: _____ P () _____ F () _____
Email: _____

Copies _____ Firm _____
Address _____
Attn: _____ P () _____ F () _____
Email: _____

Copies _____ Firm _____
Address _____
Attn: _____ P () _____ F () _____
Email: _____

Copies _____ Firm _____
Address _____
Attn: _____ P () _____ F () _____
Email: _____

If you need more room or would like to send other pertinent information please provide on the back of this sheet. Thank you for your time and concern to this matter.



**2022 TERRACON SCHEDULE OF FEES
FOR
ENVIRONMENTAL CONSULTING SERVICES, GEOTECHNICAL
ENGINEERING CONSULTING SERVICES, AND CONSTRUCTION
MATERIAL ENGINEERING AND TESTING CONSULTING SERVICES**

ENVIRONMENTAL CONSULTING SERVICES

Hourly Fees for Personnel

Personnel:	Rate/Hour
Senior Principal/Program Manager.....	\$195.00
Principal	\$185.00
Senior Project Manager.....	\$150.00
Project Manager.....	\$135.00
Project Environmental Professional IV	\$135.00
Project Environmental Professional III.....	\$120.00
Project Environmental Professional II.....	\$110.00
Senior Environmental Scientist.....	\$100.00
Project Environmental Professional I.....	\$95.00
Environmental Scientist.....	\$90.00
Environmental Technician II	\$85.00
Environmental Technician I	\$70.00
Draftsperson/CAD Operator II	\$70.00
Draftsperson/CAD Operator I	\$60.00
Administrative Assistant	\$60.00
Word Processor	\$50.00
Clerical	\$45.00

Reimbursable Expenses

Reimbursable Cost.....Cost Plus 15%

Travel Expenses

Airfare/Car Rental	Cost Plus 15%
Field Vehicle, per day.....	\$40.00
Vehicle Mileage, per mile	\$0.58
Per Diem (food and lodging).....	\$150.00
Document Delivery/Overnight (per package).....	\$25.00

Field Equipment

Disposable Bailer (each)	\$10.00
PID Meter (per day).....	\$110.00
Water Level Indicator (per day)	\$35.00
pH/Conductivity/Temperature Meter (per day).....	\$35.00
Interface Probe (per day)	\$85.00
Survey Equipment (Autolevel and Rod – per day).....	\$100.00
Submersible Purge Pump (per day)	\$35.00
Peristaltic Pump (per day)	\$ 60.00

Low-Flow Bladder Pump (per day)	\$ 100.00
Flow-Through Cell (per day).....	\$ 100.00
Sample Kit (per day).....	\$ 35.00
Handheld GPS Instrumentation (per day).....	\$ 50.00
Trimble Pro XRS Pathfinder Backpack GPS (per day)	\$ 165.00
20' Ladder (per day).....	\$ 20.00
Low Flow Air Pump (per day)	\$ 35.00
High Flow Air Pump (per day)	\$ 50.00
IAQ Instrumentation (QTRAK, Moisture Meter) (per day)	\$ 50.00
Hand Auger (per day).....	\$ 25.00
All-Terrain Vehicle (per day).....	\$ 200.00

Special Services

1. Work on field with potentially hazardous materials: Quote will be provided.
2. Containerizing waster or cuttings: Quote will be provided.
3. Removal of containerized waste or cuttings: Quote will be provided.
4. Create access to inaccessible sites: Quote will be provided.
5. Document Copies: Quote will be provided.
6. Expert Witness: Quote will be provided.
7. Miscellaneous not included in Schedule of Fees: Quote will be provided.

ASBESTOS CONSULTING SERVICES

I. Asbestos Survey and Abatement Specifications

i. Asbestos Consultant	\$ 125.00 / hr.
ii. Asbestos Inspector	\$ 85.00 / hr.
iii. PLM Bulk Sample Analysis	\$ 15.00 / ea.
iv. AAS Lead Paint Sample Analysis	\$ 15.00 / ea.
v. Word Processing	\$ 50.00 / hr.
vi. CAD Draftsman	\$ 60.00 / hr.

II. Asbestos Project Management

i. Asbestos Consultant	\$ 125.00 / hr.
ii. Asbestos Project Manager	\$ 85.00 / hr.
iii. Asbestos Air Monitor	\$ 67.00 / hr.
1. (Includes up to 10 PCM Samples per day)	
iv. PCM Air Sample Analysis (Beyond 10 per day)	\$ 10.00 / ea.
v. TEM Air Sample Analysis (24 Hr. Turnaround)	\$ 95.00 / ea.

III. Travel Expenses

- a. Reimbursable Expenses are charged at cost plus 15%.

Vehicle Charge, per day	\$ 40.00
Mileage (per mile).....	\$ 0.58
Air Fare.....	cost +15%

Per Diem	\$ 125.00
Document Delivery/Overnight (per standard package).....	\$ 20.00

INDOOR AIR QUALITY

I. GENERAL IAQ CONSULTING: LABOR FEES

Expert Witness.....	\$ 250.00
Senior Principal.....	\$ 195.00
Principal.....	\$ 185.00
Department Manager, Indoor Air Quality.....	\$ 160.00
Texas Licensed Mold Assessment Consultant.....	\$ 130.00
Texas Licensed Mold Assessment Technician.....	\$ 85.00
Administrative Assistant.....	\$60.00
Draftsperson/CAD Operator I.....	\$ 60.00
Word Processor	\$ 50.00
Clerical	\$ 45.00

II. ANALYSIS, BIOLOGICAL

<u>Analysis</u>	<u>Media</u>	<u>Method</u>	
Fungal Identification	Tape/Bulk	Microscopy	\$ 45.00*
Total Bioaerosol (air)	Allergenco/AOC	Microscopy	\$ 45.00*
Viable Bioaerosol (air)	Malt/Viable	Culture/Microscopy	\$ 65.00*
Bacterial Identification	TSA/Viable	Culture/Biolog	\$ 105.00*
Sewage Indicating Bacteria	Swab	Culture/Biolog	\$ 125.00*
Legionella	Water	Viable/DFA	\$ 155.00*

* TDSHS Licensed Laboratory and/or AIHA EMLAP Laboratory with a Standard Turnaround

III. ANALYSIS, CHEMICAL

<u>Analyte</u>	<u>Media</u>	<u>Method</u>	
Total VOC	OVM or sorbent tube	GC/FID	\$ 80.00
Specific VOC	OVM or sorbent tube	GC/FID	\$ 125.00
Multiple VOC	Tenax/Silica/Suma	GC/MS	\$ 325.00
Formaldehyde	OVM (3721 or DNPH)	HPLC/GC	\$ 80.00
BTEX	OVM or sorbent tube	GC/FID	\$ 75.00

IV. FIELD EQUIPMENT

<u>Analyte/Instrument</u>	<u>Method</u>	
CO ₂ , CO, Temp, Humidity	Direct Read	Included*
Moisture	Direct Read	Included*
Photo-documentation	Digital	Included*
Airborne Particulate	Direct Read	Included*
Micromanometer	Direct Read	Included*
Infrared Camera	Thermography	\$ 250.00

*These analytical measurements included in a standard IAQ investigations/evaluations.

V. TRAVEL EXPENSES

Reimbursable Expenses are charged at cost plus 15%.

Vehicle Charge, per day	\$ 40.00
Mileage (per mile)	\$ 0.58
Air Fare.....	cost 15%
Per Diem	\$ 125.00
Document Delivery/Overnight (per standard package).....	\$ 20.00

GEOTECHNICAL ENGINEERING CONSULTING SERVICES

Engineering and Support Staff

Project Secretary.....	\$45.00
CADD Technician	\$45.00
Administrative Secretary	\$45.00
Engineering Technician	\$50.00
Senior Engineering Technician	\$60.00
Laboratory/Field Supervisor	\$75.00
Graduate Engineer/Geologist/Scientist.....	\$85.00
CME Project Manager	\$90.00
Project Engineer/Geologist/Scientist	\$110.00
Project Manager, Senior Engineer/Scientist/Geologist	\$135.00
Manager.....	\$160.00
In-House Consultant, Principal Engineer	\$175.00

Overtime rates of 1.5 times the standard hourly rate will be applicable for all hours worked before 7:00 am, after 5:00 pm, or over eight (8) hours per day, Monday through Friday. For all hours worked on Saturdays, Sundays, and holidays there will be a three (3) hour minimum charge.

Special Services

1. Work on field with potentially hazardous materials: Quote will be provided.
2. Containerizing waster or cuttings: Quote will be provided.
3. Removal of containerized waste or cuttings: Quote will be provided.
4. Create access to inaccessible sites: Quote will be provided.
5. Document Copies: Quote will be provided.
6. Expert Witness: Quote will be provided.
7. Miscellaneous not included in Schedule of Fees: Quote will be provided.

General Information

Expenses incurred in connection with the project will be invoiced at cost plus 15 percent. These expenses may include the following:

- Services directly applicable to the work, such as special legal and accounting expenses, special consultants, subcontractor services, and similar costs that are not applicable to general operating expenses.
- Identifiable communication expenses, such as long-distance telephone, facsimile, telegraphy, cable, express delivery charges, postage, and similar costs that are not applicable to general correspondence and/or operating expenses.
- Identifiable processing and reproduction costs applicable to the project, such as developing, blueprinting, photocopying, printing, and similar costs that are not applicable to general operating expenses.

Geotechnical Field Services

Drilling and Sampling Operations

Soil Borings, 3 in. thin-wall tube sample or 2 inch split barrel sampler, sample at 5-foot intervals (continuous 0-10 ft.)

.0 to 50 ft., per linear foot	\$10.50
.51 to 100 ft., per linear foot.....	\$12.00
Over 100 ft.	On request
Casing installation/removal, per linear foot	\$9.00
Wash or auger boring, per linear foot	\$10.50
Rock coring, soft formation, per linear foot	\$26.50
Rock coring, hard formation, per linear foot*	\$32.00

Core bit wear per linear foot

Soft formation.....	\$1.00
Hard formation*	\$3.00
Inaccessible borings requiring all-terrain drilling vehicles, additional charge, per linear foot.....	\$4.00
Special sampling techniques (piston samples, etc.)	On Request

Standpipe/Observation well installation

(excludes material), per hour.....	\$180.00
Hourly Drilling Rate, 3-man crew, per hour.....	\$225.00
Rig Standby, per hour	\$225.00
Damaged tube samplers, each.....	\$35.00
Grouting of Test Borings (Maximum 6" nominal dia. hole, excludes materials), per hour....	\$180.00

* For very hard rock formations such as granite, or unusual conditions such as karstic limestone, prices will be quoted upon request.

Mobilization, Travel Expenses and Site Access

Mobilization, Drill Crew	\$300.00
Mobilization, all-terrain vehicle	\$600.00
Drayage, permits for equipment	Cost+15%
Rental of special equipment for site access, etc.....	Cost+15%

Resistivity Surveys

Graduate Geologist/Engineer	\$85.00
Project Geologist/Engineer, per hour.....	\$95.00
Resistivity Equipment, per day	\$225.00
Other Sampling Techniques & Services not Shown	On request

Notes

Right of entry to exploration sites must be provided by the client unless other arrangements are made in advance. Site restoration, as required by the client and due to no fault of Terracon will be billed at cost plus 15 percent.

Geotechnical Laboratory Testing Services

(The price for tests in this section are based on a per sample or per test basis.)

Strength and Volume Change Tests

Unconfined Compression Tests

Soil.....	\$50.00
Rock.....	\$55.00
Vane Shear Test.....	\$35.00
Pocket Penetrometer.....	\$7.00

Triaxial Tests

Unconsolidated-Undrained.....	\$90.00
Consolidated-Undrained w/Pore Pressure Measurements (per stage).....	\$250.00
Consolidated-Undrained Cyclic Loading.....	\$450.00
Consolidated-Drained (Sands and Silts).....	\$450.00

Direct Shear Tests

Unconsolidated-Undrained.....	\$150.00
Consolidated-Undrained (per stage).....	\$250.00
Consolidated-Drained (per stage).....	\$325.00
Consolidated-Drained, Residual Strength (per stage).....	\$450.00

Swell-Pressure Tests

Single load.....	\$165.00
Multiple load increments.....	\$225.00
Consolidation Tests, max 7 loadings.....	\$500.00
Additional load increments.....	\$65.00

Classification Tests

Liquid and Plastic Limits

Single Point Test.....	\$75.00
Three-Point Test.....	\$95.00

Particle Size Analysis

Sieve Analysis through No. 200 Sieve.....	\$100.00
Percent Finer than No. 200 Sieve (Washed).....	\$55.00
Hydrometer (Includes No. 200 Sieve).....	\$265.00

Other Tests and Miscellaneous Items

Water Content.....	\$9.50
Density of Undisturbed Samples Soil.....	\$30.00
Rock.....	\$40.00
Specific Gravity.....	\$45.00
Organic Content.....	\$40.00

Permeability

Flexible wall test-triaxial cell.....	\$350.00
Falling Head.....	\$125.00

Moisture-Density Relationship, Standard or Modified

Soil (4" and 6" Mold).....	\$225.00
Soil with Gravel, Base Materials (6" Mold).....	\$275.00
Soil, Base Material with Chemical Admixtures (6" Mold).....	\$325.00
Lime modification optimum (using pH)	\$125.00
Soil-lime mixture design (using plasticity index).....	\$300.00

Laboratory CBR Tests

(Excludes Moisture-Density Relationship)	\$500.00
Shipment of Samples to Laboratory	Cost + 15%

Notes:

- All tests not listed can be performed at either a quoted price or on an hourly basis.
- Rush test assignments requiring unscheduled overtime in the laboratory are subject to a 50 percent surcharge for a 3-day turn-around.
- Technician time for sample preparation will be \$50.00 per hour in addition to test charges. Special data presentation such as plotting stress-strain curves will be charged at the hourly rate of \$65.00 in addition to the test charges.
- Photograph of sample is \$8.00 for first copy, and \$4.00 for every additional photograph.

CONSTRUCTION MATERIALS ENGINEERING AND TESTING CONSULTING SERVICES

Construction Materials Testing and Inspection Field Services

Pick-up concrete test specimens or sampling materials, per hour	\$50.00
Vehicle Trip Charge (per trip), as applicable.....	\$40.00
Vehicle Mileage (per mile), as applicable	\$00.58
Field molding of concrete cylinders, slump, air content, and temperature measurements, per hour.....	\$50.00
Concrete field monitoring & molding of cylinders, slump, air content, unit weight, & temperature measurements, per hour	\$50.00
Concrete and asphalt, plant inspection, per hour.....	\$55.00
Concrete or asphalt coring, per hour	\$55.00
plus bit wear (length times diameter), per inch diameter	\$3.00
plus generator, per day	\$150.00
plus core rig and equipment, per day	\$150.00
plus patching of holes, each.....	\$44.00

Windsor probe or Swiss hammer testing

Senior engineering technician, per hour	\$60.00
Graduate engineer, per hour	\$85.00
Project engineer, per hour	\$95.00
plus Windsor probe or Swiss hammer, day.....	\$90.00
plus Windsor probe shots	Cost + 15%
In-place nuclear moisture-density testing, per hour	\$50.00

Full Time Earthwork Monitoring

Engineering technician, per hour	\$50.00
Senior engineering technician, per hour	\$60.00
plus nuclear gauge, per day	\$50.00
Field soil stabilization (lime or cement) monitoring, per hour	\$50.00
plus nuclear gauge, per day	\$35.00
Foundation installation monitoring, per hour	\$55.00

Roofing installation monitoring

Per Roofing Consultant Contract Fees

Visual welding inspection and welder performance qualifications

Certified welding inspector, per hour	\$95.00
NDE technician, per hour	\$Cost + 15%
Reinforcing steel inspection, per hour,	\$50.00
Radiographic examination:	
NDE technician, per hour	Cost + 15%
plus equipment, per day	Cost + 15%
plus film and supplies	Cost + 15%

Ultrasonic, magnetic particle & liquid penetrant examination

NDE technician, per hour	Cost + 15%
plus equipment, per day	Cost + 15%
plus supplies.....	Cost + 15%

Construction Materials Laboratory Testing Services

Particle size analysis

Sieve analysis through 200 sieve:

Dry, each.....	\$85.00
Washed, each	\$110.00

Percent finer than 200 sieve:

(washed, soil only), each	\$60.00
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Hydrometer analysis (includes 200 sieve), each..... \$265.00

Specific gravity and absorption (aggregate), each..... \$80.00

Dry-rodded weight, each

.....	\$55.00
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Decantation, each

.....	\$55.00
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Organic impurities test on fine aggregate, each..... \$55.00

Los Angeles abrasion (excludes preparation), each

.....	\$350.00
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Testing of each aggregate type for concrete mix design or verification (includes gradation, fineness modulus, absorption, specific gravity, dry-rodded weight, and decantation), each..... \$350.00

Concrete mix verification, each

.....	\$350.00
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Additional verifications with same aggregates, each

.....	\$125.00
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Concrete mix design

Regular aggregate, each..... \$1,100.00

Lightweight aggregate, each

.....	\$1,250.00
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Additional mixes with same aggregates, each..... \$400.00

Compression testing of concrete cylinders

Made during field monitoring (includes reserves not tested), each

.....	\$15.00
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FOB laboratory (signed hand written report, minimum of 4 cylinders), each

.....	\$20.00
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FOB laboratory (signed typed report, minimum of 4 cylinders), each..... \$28.00

Flexural testing of concrete beams, each

.....	\$40.00
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Moisture-density relationship, Standard or modified Proctor

Soil (4" and 6" mold), each..... \$225.00

Soil with gravel, base materials (6" mold), each

.....	\$275.00
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Soil, base material with chemical admixtures (6" mold), each..... \$325.00

Relative density (maximum and minimum), each

.....	\$225.00
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Density of undisturbed soil samples, each..... \$11.50

Laboratory CBR tests (excludes moisture-density Relationship), each..... \$150.00

Texas triaxial series, each set

.....	\$1,500.00
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Testing of bituminous materials

Mixing and molding of specimens (set of 3)

.....	\$175.00
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Molding specimens only (set of 3)

.....	\$175.00
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Specific gravity (set of 3)

.....	\$110.00
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Stability (set of 3)

.....	\$110.00
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Extraction/Gradation..... \$175.00

Maximum theoretical specific gravity

.....	\$110.00
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Preparation of samples/materials will be charged for all laboratory tests when applicable at (per hour)

.....	\$55.00
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Reimbursable Expenses

Direct non-salary expenses incurred, identifiable and not applicable to general overhead are billed at cost plus 15 percent for handling and include, but are not limited to the following:

Travel, long distance calls, express charges, legal and accounting fees, computer time and programming costs, external consultants, word processing, CADD, printing and binding reports, blueprinting, photocopying, printing, photographs, environmental analytical and drilling fees, etc.

Note

A three (3) hour minimum charge for personnel and equipment is applicable to all trips made for the performance of testing, inspection or consulting services. The minimum charge is not applicable for trips to the project site for sample pick up only. All labor, equipment and transportation charges are billed on a portal to portal basis from our office.

Expert testimony in depositions, hearings, mediation, and trials will be charged at 1.5 times the above rates.

The following assumptions were used in preparing our fee schedule:

- We have assumed that contractors on the site will work a single shift, five-day week schedule;
- The contractor will schedule testing services with 24 hours notice (7:00 AM to 5:00 PM, Monday through Friday) unless the service is on a full time basis;
- Invoices for the project will be submitted on a monthly basis;
- Full time masonry inspections as specified in the plans,
- Services provided on Saturday, Sunday or Holidays will be invoiced at 1.5 times the applicable rate; and
- Services provided outside of regular business hours (7:00 AM to 5:00 PM, Monday through Friday) will be invoiced at 1.50 times the applicable rate.