

3421 Paesanos Pkwy  
San Antonio, TX 78231  
Main: 201 979 8444

Attachment A



May 28, 2024

City of Pflugerville  
Attn: Michael Patroski  
100 E. Main St.  
Pflugerville, Texas 78660

Proposal for Professional Geotechnical Services  
Parkway Drive Pavement Reconstruction  
Colliers Engineering & Design Proposal No.: 24002851P

Dear Mr. Patroski,

Colliers Engineering & Design, Inc. is pleased to submit this proposal to provide professional services for Parkway Drive Street Improvements including right-of-way and topographic survey, storm drain analysis, subsurface utility engineering, geotechnical investigation, pavement design, street design with curb and gutter, sidewalk and streetlamp accommodation for future installations. We understand the project comprises the reconstruction of Parkway Drive in the City of Pflugerville, Travis County, Texas. The roadway is approximately 3,200 linear feet.

This proposal is divided into four sections as follows:

- Section I** – Scope of Services
- Section II** – Business Terms and Conditions
- Section III** – Technical Staff Hourly Rate Schedule and Reimbursable Expenses
- Section IV** – Client Contract Authorization

The order in which the following scope of services are presented generally follows the sequence in which the project will be accomplished; however, depending on the project, the various authorized services contained in this proposal may be performed in a sequence as deemed appropriate by Colliers Engineering & Design to meet project schedules.

## Section I – Scope of Services

Based on our conversations and information noted above, we propose to complete the following:

### TASK 1: Survey Services

#### a. Topographic & Improvement Survey

CED will perform a topographical survey on the ground in a 50-foot grid, plus additional grade breaks. CED will locate improvements, including, but not limited to, existing buildings, concrete rip-rap, driveways, fences, and visible utilities. To locate underground utilities, a One-Call request for utility location will be placed. The survey will identify the location of the paint marks from the One-Call locations. Apparent right-of-way, if applicable, will be identified using found monumentation.

##### Deliverables

Topographic and improvement survey will be provided as a DWG file to be incorporated into the Construction Plans.

#### b. Boundary and ROW Survey

For this task, CED will field locate the existing boundary pins, verify the existing boundary, and reset boundary pins where required. CED will prepare a base file to use for future platting on this phase including the property boundary of the tract and easements that we have been made aware of through research and from the Title Commitment provided by the Client.

##### Deliverables

Boundary and ROW DWG file with property information, easements, and ROW to be incorporated into the Construction Plans.

#### c. Tree Survey

A tree survey will be conducted in accordance with the current City of Pflugerville Tree Ordinance. Surveyed trees will be tagged and catalogued

##### Deliverables

Tree Survey DWG file will be provided as a DWG file to be incorporated into the Construction Plans.

#### d. SUE Level Services

CED proposes to provide the following professional Subsurface Utility Engineering Investigation Services in support of the above-named project in accordance with the project limits as indicated in Exhibit A, to the standard of care applicable in the SUE profession. The services will meet the standard guidelines of ASCE C-I 38-22 circular for "Standard Guideline for investigating and documenting Existing Utilities". The following table describes the standards for subsurface utility investigations.

SERVICE	DESCRIPTION
<u>QL-D</u> <i>Utility Records Research</i>	Conduct comprehensive utility records research and collect applicable utility owner records to assist in identifying utility owners that may have facilities on or be affected by the project. Includes interfacing with utility owners/operators to ascertain the availability and completeness of record documents and to obtain verbal or historical information on existing subsurface facilities and operational status.
<u>QL-C</u> <i>Surface Feature Survey</i>	Prerequisite: Perform QL-D Tasks.  Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to quality level D information.
<u>QL-B</u> <i>Utility Designation and Survey</i>	Prerequisite: Perform QL-D & QL-C Tasks.  Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. This information is surveyed to applicable tolerances defined by the project and reduced onto plan documents.
<u>QL-A</u> <i>Utility Exposure and Identification of Precision Horizontal and Vertical Position</i>	Precise horizontal and vertical location of utilities obtained by the actual exposure (or verification of previously exposed and surveyed utilities) and subsequent measurement of subsurface utilities, usually at a specific point. Minimally intrusive excavation equipment is typically used to minimize the potential for utility damage. A precise horizontal and vertical location, as well as other utility attributes, is shown on plan documents. Accuracy is typically set to 15-mm vertical and to applicable horizontal survey and mapping accuracy as defined or expected by the project owner.

**a. Quality Service Level D (QL-D) Research and Collection of Existing Utility Records**

Initiate 811 ticket to ascertain contact information for identified facility owners. Research to ascertain information on existing utilities within the project limits and request applicable utility owner records for assistance in identifying utility owners that may have facilities on, within, or potentially affected by the project.

Colliers will attempt to contact utility providers identified through collected utility easement information, One-Call systems, and via vehicle reconnaissance and inventory of utility marker posts along the scoped area and adjacent roadways. We will attempt to ascertain the ownership, type, size, encasement, and composition of the existing utilities through coordination with owners/representatives.

The QL-D data that is collected including a list of known utility providers in the project limits can be provided at the request of the Client as well as utility contact information, as available.

**b. Quality Service Level C (QL-C) – Surveying and Plotting Visible Above-Ground Utility Features**

Field surveying to obtain accurate horizontal position of visible utility surface features associated with suspected underground utility systems located within the project limits.

- Identify surface features on the plan and ground surface that are surface appurtenances of existing subsurface utilities.
- Survey features and determine accuracy and completeness for applicability with the existing project and by using professional judgment in correlating this information to quality level B information.

**c. Quality Level B (QL-B) Designating Service (Horizontal Location of Utilities)**

Designating is to indicate, by marking with paint, the presence and approximate horizontal location of subsurface utilities using geophysical prospecting techniques including, electromagnetic, sonic, and acoustical techniques. Colliers will provide the following designating services to aid the Client:

- Provide all equipment, personnel and supplies required for performing designating services. Colliers shall determine which equipment, personnel and supplies are required to perform these services.
- Designate the existing underground utility facilities within the identified project area as shown in Exhibit A.
- Conduct appropriate investigation of site conditions.
- Mark the utilities on the ground with spray paint to be surveyed by Colliers.
- Create field sketch drawings of the designated utilities.
- CED will perform the survey of the QL-C utility surface features and QL-B designating field marks.

For this project, CED assumed that no aerial (poles) nor irrigation lines will be needed. Also, CED assumed that the wastewater and storm drain will be mapped through records and will obtain rim elevations and flowline.

**Optional Service**

**d. Quality Level A (QL-A) Designating Service (Utility Exposure and Identification of Precision Horizontal and Vertical Position) - (Per unit with Mapping included)**

- Locating (Test Hole) Services. Locating services is to locate the accurate horizontal and vertical position of subsurface utilities by excavating a test hole using vacuum excavation techniques and equipment that is non-destructive to utilities. Locating services will be performed at the specific location identified by the client on requested utilities. CED will seek to obtain horizontal and vertical utility information through the test process. Test hole locations will be identified by the Project Owner or Client and transmitted to Colliers Engineering & Design for performance of field work and data collection.
- Provide equipment, personnel and supplies required to perform locating services. Colliers Engineering & Design shall determine which equipment, personnel and supplies are required to perform such services.
- Excavate test holes to expose the utility to be measured in such a manner that ensures the safety of the excavation and the integrity of the utility to be measured. In performing such excavations, Colliers Engineering & Design shall comply with applicable utility damage

prevention laws. Excavations will be performed using specially developed vacuum excavation equipment that is non-destructive to existing facilities. If contaminated soils are discovered during the excavation process, Colliers Engineering & Design will so notify the Client.

- Locate and identify the precise horizontal and vertical position of existing facilities. Positive identification includes the determination or confirmation of facility type, size, depth, and material composition.
- Backfill around the exposed facility using the excavated materials compacted in six-inch lifts.
- In grass and landscape areas, restoration shall be as reasonably possible to the condition that existed prior to excavation.
- In pavement areas, restoration shall be with asphaltic cold mix or other pre-approved methods as required. It is anticipated there will be vacuum excavation in paved areas required for Test Holes on this project.
- In areas inaccessible by excavation truck or other equipment, electronic depths may be provided on designated utilities in lieu of test holes.
- Collect swing ties from existing physical features for the client to recover locations.
- To be mapped by Colliers Engineering and Design.

For this project, CED will perform utility investigation (Quality Level B SUE) within the area provided in Exhibit A. with the optional Test Holes (Quality Level A) per the client's request at the rate stated below.

### **Deliverables**

Colliers Engineering & Design will provide a Field sketch detailing the SUE information. Utilities will be surface designated, painted and surveyed. Utility Field Sketches will be performed of locate services performed. The Field Sketches will be color coded according to the American Public Works Association standards. Field sketches and QL-D records information can be provided to the Client at no additional cost and per the Client's request.

## **TASK 2: Geotechnical Investigation**

### **a. Geotechnical Exploration Program and Report**

We will perform a geotechnical exploration program in accordance with sound engineering practice, and state/local regulations, to evaluate subsurface conditions for the proposed roadway reconstruction.

#### **Program Scope**

##### *Test Borings*

We will coordinate with a subcontractor to mobilize truck-mounted drilling equipment to perform Standard Penetration Test (SPT) borings along the roadway alignment to visually classify the subsurface soils and obtain soil samples for laboratory testing. We will perform up to seven (7) borings, which will be advanced to depths of up to ±15 feet below the ground surface (BGS), unless subsurface conditions dictate alternate depths, such as shallow bedrock or unsuitable bearing soils. We have allotted up to one (1) day of drilling to explore the site.

#### *Field Observation*

The subsurface exploration program will be performed under the full-time observation of a geotechnical specialist, who will observe and log the explorations, collect soil samples, and will be acting under the direction of a licensed Professional Geotechnical Engineer. Explorations will be field located by our representative by measuring from existing site features using conventional taping methods.

#### *Duration*

**This proposal considers up to one (1) day to perform the test borings.**

#### *General Laboratory Soil Testing*

Representative samples obtained from the explorations will be subjected to limited laboratory testing to evaluate general engineering characteristics. Such testing will likely include moisture contents, grain-size analysis, Atterberg Limits, California Bearing Ratio, soluble sulfate content and lime series testing.

#### **Geotechnical Report**

We will prepare a geotechnical report summarizing the subsurface conditions encountered at the site. The report will include the results of the subsurface exploration programs and laboratory testing, and geotechnical recommendations including:

- Observation of existing pavement condition
- Individual core profiles (asphalt and base thicknesses)
- Typical pavement sections for new pavement
- Considerations for construction, such as subgrade preparation

#### **Schedule**

We will proceed with scheduling the proposed exploration program upon receiving a signed contract. Depending on availability and necessary drilling permits, our subcontractors are typically able to mobilize in about two to four weeks from receiving a signed contract and related documents.

We anticipate our geotechnical report to be submitted in approximately four weeks from the conclusion of our exploration program if special soil testing is not required.

#### **b. Post-Report Engineering Consultation, Meetings, Etc.**

This section of the proposal will be to provide additional engineering consultation beyond the scope of Task G600 in this proposal. This includes providing report revisions, additional engineering input, including participation in meetings and teleconferences, as ownership decides future courses of action.

Because it is impossible to anticipate the amount of time necessary for these services, this Task will be billed on an hourly basis in accordance with our Fee Schedule. For planning purposes, we recommend an estimated budget of \$1,500.

### TASK 3: Transportation Calming Assessment (Excluded)

### TASK 4: Engineering Services

#### Road & Drainage Design and Permitting

This task will include the preparation of design drawings and details, construction specifications, an opinion of probable construction costs (OPCC), storm drain design (no adverse impact), and coordination with Utility companies as necessary for the proposed road improvements. This phase will include the following sub-phases:

- *Data Collection and Design Support* – This sub-phase will include the required effort to gather available information to establish existing conditions in the project area.
- *Civil Engineering Design* – This sub-phase will include the required effort to perform the calculations and analysis necessary for the design of the proposed roads and associated drainage (no adverse impact). The design and calculations will include the horizontal and vertical roadway layout, and storm sewer design.
- *Drawing Preparation* – This sub-phase will include the required effort to produce a full set of construction plans for the proposed roads and associated drainage. The drawing will generally include an overall project layout, typical road cross sections, plan and profile sheets, drainage design sheets, proposed signage and striping plans, traffic control plans, sheets addressing Stormwater Pollution Prevention Plan (SWPPP) requirements, Street Lighting Location, and driveway design.
- *Opinion of Probable Construction Costs (OPCC)* – This sub-phase will include the preparation quantity take-offs per the proposed design, determination of unit prices for each quantity line item, and an estimate of the construction cost for each item. The total sub-costs for each item will be tallied and totaled providing an estimate of the total construction cost for the proposed road improvements.
- *Project Manual* – This sub-phase will include the required effort to complete a set of construction specifications for the proposed improvements. The specifications will identify construction standards which will define the quality of proposed improvements.
- *QA/QC* - Quality assurance and quality control processes will be integral to this phase involving systematic review and testing of design elements to ensure compliance with standards, accuracy, and safety, while also identifying and rectifying any errors or inconsistencies in the design process.
- *Permitting* – This item refers to prepare forms and procedures for permitting a new road adjacent to an existing TxDOT highway and existing utilities. We will identify relevant local and state regulatory requirements then, compile and complete necessary forms, including detailing road design, environmental impacts, and utility integration, followed by submitting them for construction approval.
- *Bid Phase Services* – CED will prepare a bid package and assist the Program Manager in advertising the project for award to a contractor. CED will prepare the bid documents, attend a pre-bid conference and provide written responses from bidders for Addenda, as necessary. CED will answer questions from the contractors and issue addenda where needed. CED will

evaluate the submitted bids for completion and accuracy. CED will also compare the bid against the OPCC to identify any bid items that appear to be significantly higher or lower than anticipated and evaluate potential rational for these bid items. CED will then prepare a bid tabulation summarizing bid results. CED will provide a recommendation to award to the most qualified bidder whose package was deemed responsive. CED will provide a bid tabulation and recommendation of award for the contract.

### Deliverables

Road and Drainage Construction Plans (30%,60%, 90%, Final), Specifications Manual, and Opinion of Probable Construction Costs.

### TASK 5: Environmental Review

CED will complete all necessary studies to comply with the HUD Statutory Checklist in order to receive a “project converts to exempt” finding as a Categorical Excluded per 24 CFR 58.35(a). In order to complete this checklist, CED will complete and initial site visit with personnel to verify compliance with the various categories required, should at any time CED determine that a formal Environmental Assessment be required we will notify the Responsible Entity and develop a scope and fee to address these specific concerns.

### Schedule of Fees

For your convenience, we have broken down the total estimated cost of the project into the categories identified within the scope of services.

Task Name	Fee
<b>TASK 1.0 Survey Services</b>	
a. Topographic and Improvements	\$15,140
b. Boundary and ROW Survey	\$9,640
c. Tree Survey	\$5,300
d. SUE QL-D through QL-A (Budget)	\$9,600
<b>TASK 2.0 Geotechnical Investigation</b>	
a. Exploration and Report	\$5,510
b. Post-Report Construction and Meetings	\$1,860
<b>TASK 3.0 Traffic Calming Assessment (Excluded)</b>	
<b>TASK 4.0 Engineering Services</b>	
a. Data Collection and Design Support	\$19,980
b. Civil Engineering Design	\$25,600
c. Drawing Preparation	\$119,660
d. Opinion of Probable Construction Cost (OPCC)	\$9,480
e. Project Manual	\$9,960
f. QA/QC	\$3,720
g. Permitting	\$1,240



h. Bid Phase Services	\$11,640
<hr/>	
<b>TASK 5.0 Environmental</b>	
a. Data Collection & Design Support	\$1,760
b. Categorical Exclusion	\$5,780
<hr/>	
<b>Reimbursable Expenses</b>	<b>\$5,000</b>
<b>Subconsultant (Cost +10%)</b>	<b>\$9,126</b>
<hr/>	
<b>TOTAL</b>	<b>\$269,996</b>
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### Exclusions and Understandings

Services relating to the following items are not anticipated for the project or cannot be quantified at this time. Therefore, any service associated with the following items is specifically excluded from the scope of professional services within this agreement.

- Services not specifically outlined above in Section I;

If an item listed herein, or otherwise not specifically mentioned within this agreement, is deemed necessary, Colliers Engineering & Design may prepare an addendum to this agreement for your review, outlining the scope of additional services and associated professional fees regarding the extra services.

### Technical Staff Rates 2024

Billing Titles	Hourly Rates
Executive Principal	350.00
Senior Principal	335.00
Principal	310.00
Senior Technical Director	285.00
Senior Project Manager	260.00
Technical Director	225.00
Project Manager	210.00
Senior Project Specialist	195.00
Project Specialist	185.00
Technical Professional	175.00
Technical Specialist	165.00
Specialist	155.00
Senior Data Technician	145.00
Senior Technical Assistant	135.00
Technical Assistant	120.00
Field Technician	110.00
Data Technician	110.00
Survey Crew – 1 Person w/Robotic Equipment	190.00
Additional Survey Crew Member	80.00
SUE Crew (designating) – 1 Person	155.00
Additional (designating) Member	80.00
SUE Crew (locating) – 2 Person	210.00
Additional (locating) Member	80.00
Expert Witness	410.00
Sr. LSRP	320.00
LSRP	275.00

### Reimbursable Expenses

General Expenses	Cost + 15%
Travel (Hotel, Airfare, Meals)	Cost + 15%
Sub-Consultants/Sub-Contractors	Cost + 20%
Plotting	4.50 / Each
Computer Mylars / Color Plots	100.00 / Each
Photocopies	0.19 / Each
Color Photocopies	2.05 / Each
Document Binding	4.05 / Each
Portable Media	100.00 / Each
Exhibit Lamination (24" x 36" or larger)	90.00 / Each
Initial Digital Signature	300.00
Additional Digital Signatures	75.00 / Each
Mileage Reimbursement*	0.655 / Per Mile
	Field Vehicle 0.75 / Per Mile

\*Mileage reimbursement subject to change based upon IRS standard mileage rate.

## Section IV – Client Contract Authorization

I hereby declare that I am duly authorized to sign binding contractual documents. I also declare that I have read, understand, and accept this contract.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

If you find this proposal acceptable, please sign where indicated above in Section IV, and return one signed copy to this office. Payment terms are **NET30 of receipt of invoice**. This proposal is valid until 60 days per business terms.

We very much appreciate the opportunity of submitting this proposal and look forward to performing these services for you.

Sincerely,

Colliers Engineering & Design, Inc.



Chris Otto, P.E., C.F.M.

Regional Discipline Leader – Municipal  
Bryan, Texas

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Attachment A1

Task Order:

<b>SUMMARY:</b>			
<b>PROJECT NAME:</b>	Pflugerville - Parkway Drive		
<b>Vendor NAME:</b>	KFW dba Colliers Engineering & Design		
<b>CLIENT NAME:</b>	City of Pflugerville		
<b>PAYMENT SOURCE:</b>	Professional Services Agreement		
<b>Task NO.</b>	<b>Task Description</b>	<b>Hours</b>	<b>Costs</b>
1	Survey	256	\$ 39,680
2	Geotechnical	44	\$ 7,370
3	Transportation	0	\$ -
4	Engineering Services	1138	\$ 201,280
5	Environmental	62	\$ 7,540
<b>Subtotal</b>		1499.5	\$ 255,870
	Expenses		\$ 5,000
	Sub-Consultant (Cost+10%)		\$ 9,126
<b>TOTAL</b>			\$ 269,996

Vendor hereby certifies that the above estimate of hours and cost is made in good faith and is intended to cover the cost of performing the Tasks identified above in a timely manner within the agreed schedule:



Vendor Representative

Date: 5 / 31 / 24



**Project Name:**  
City of Pflugerville  
Parkway Drive Street Improvements



Month	June				July			August			September			October			November			December			January													
	7	14	21	28	5	15	19	26	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	
Week																																				
Survey & SUE																																				
Geotechnical																																				
Environmental																																				
Schematic Design																																				
City Review																																				
Design Submittal																																				
City Review																																				
PS&E Design																																				
Bid Phase																																				



## COST ESTIMATE

**From:** Randall Cutter  
 Innovative Environmental Technologies  
 2701-A Ludelle St.  
 Fort Worth, TX 761056  
 Ph./Fax: 214-382-9005 / 828-228-1695  
 Email: [randallcutter@iet-inc.net](mailto:randallcutter@iet-inc.net)

**To:** Bobby Lehmann  
 Colliers Engineering  
 3421 Paesanos Parkway  
 San Antonio, TX 78231

[bobby.lehmann@collierseng.com](mailto:bobby.lehmann@collierseng.com)

**Date:** Thursday, April 25, 2024

**Project:** Parkway Dr.  
**Location:** Pflugerville, TX  
**GPS Coordinates:**

**Proposal No.:** 1461.0424

Project#

*Scope: 7 borings to 15' Continuous SPT sampling for the first 10 ft. Total 105'.*

Work Description:	Quantity	Price	Total
<b>Truck rig</b>			
Mobe / Demob Rig	1	\$ 1,445.00	\$1,445.00
Rig Mobilization fuel surcharge (each)	1	\$ 227.59	\$227.59
<b>Auger borings with 5' center split spoons</b>			
0' - 40' (per foot) (split spoons included in top 5')	105	\$ 15.00	\$1,575.00
40' - 80' (per foot)		\$ 16.00	\$0.00
Shelby Tubes, 3" by 30" (thin wall non extracted w/wax & caps)	7	\$ 115.00	\$805.00
TCP/SPT 0' - 40' (ea)	14	\$ 20.00	\$280.00
Concrete/Asphalt Coring (each)	7	\$ 75.00	\$525.00
Concrete/Asphalt patch (each)	7	\$ 35.00	\$245.00
Crew Per Diem, 2 Man Crew (per day)	1	\$ 500.00	\$500.00
Hole Plug (per bag)		\$ 22.00	\$0.00
<b>Subtotal</b>			<b>\$5,602.59</b>
<b>Estimated Total: (quantities are estimated, invoice would reflect actual usage)</b>			
<b>Contingency</b>			
Workers comp Waiver of Subrogation (per year)		\$250.00	as needed
Out of scope Activities, Difficult Access, Standby time, site training (hr.)		\$250.00	as needed

*IET is not responsible for any drilling permits.*

*IET is not responsible for any utility or obstacle locating.*

Thank you very much for considering IET for this project. A complete statement of our qualifications, including experience and projects, is available for your review on our websites ([iet-inc.net](http://iet-inc.net)).

Please contact me with any questions.

Respectfully Submitted,  
 Innovative Environmental Tech

*Randall Cutter*

Randall Cutter  
 Operations Manager



# GEOTECHNICAL TESTING SERVICES

A TRI ENVIRONMENTAL COMPANY

## 2023 FEE SCHEDULE

Ben Schultz - Laboratory Manager

bschultz@gts-labs.com

412-771-5340

Effective: 4/21/2023

Authorization to proceed and/or acceptance of TRI testing results indicates Client acceptance to payment terms of Net 30 unless the payment terms were already specified in a Master Services Agreement that covers this engagement.

SOIL CLASSIFICATION		
Water Content	\$20	ASTM D2216 / AASHTO T265
Atterberg Limits (Liquid & Plastic)	\$70	ASTM D4318 / AASHTO T89 & T90
Sieve Analysis	\$65	ASTM D6913
% Passing #200 Sieve Only	\$45	ASTM D1140
Hydrometer	\$70	ASTM D7928
Particle Size Analysis (Sieve and Hydrometer)	\$135	ASTM D422 / AASHTO T88
USCS Classification (Sieve and Atterberg Included)	\$135	ASTM D2487
USDA Classification (Sieve and Hydrometer Included)	\$135	USDA
Specific Gravity	\$75	ASTM D854 / AASHTO T100
Loss On Ignition	\$55	ASTM D2974 / AASHTO T267
Water Displacement Method (Wax Density)	\$75	ASTM D7263 "A"
Lab Determination of Density (Unit Weight)	\$55	ASTM D7263 "B"
SOIL COMPACTION		
Standard Proctor	\$150	ASTM D698 / AASHTO T99
Standard Proctor - 1 Point	\$60	ASTM D698 / AASHTO T99
Modified Proctor	\$175	ASTM D1557 / AASHTO T180
Modified Proctor - 1 Point	\$70	ASTM D1557 / AASHTO T180
Oversize Rock Correction	\$55	ASTM D4718
PADOT Proctor (Oversize Material Replacement)	\$150	PTM 106
Cement Amended Proctor (Std or Mod)	\$200	ASTM D558 / AASHTO T134
Lime Amended Proctor (Std or Mod)	\$250	Industry Practice
Relative Density (Minimum & Maximum)	\$400	ASTM D4254 / ASTM D4253
SOIL SHEAR		
California Bearing Ratio - 1 Point	\$200	ASTM D1883 / AASHTO T193
California Bearing Ratio - 3 Points	\$600	ASTM D1883 / AASHTO T193
California Bearing Ratio - 1 Point (Cement Amended)	\$250	ASTM D1883 mod / AASHTO T193 mod
Direct Shear (Remolded - Bulk Sample)	\$450 ASTM / \$500 AASHTO	ASTM D3080 / AASHTO T236
Direct Shear (Remolded - Split Spoon Samples)	\$600 ASTM / \$650 AASHTO	ASTM D3080 / AASHTO T236
Direct Shear (Intact)	\$425 ASTM / \$475 AASHTO	ASTM D3080 / AASHTO T236
Residual Direct Shear (Remolded)	\$1,175	ACOE IXA (ASTM Shear Speed)
Residual Direct Shear (Intact)	\$1,100	ACOE IXA (ASTM Shear Speed)
Residual Direct Shear (Remolded)	\$1,675	ACOE IXA
Residual Direct Shear (Intact)	\$1,600	ACOE IXA
UC - Unconfined Compressive Strength - 1 Point (Remolded)	\$125	ASTM D2166 / AASHTO T208
UC - Unconfined Compressive Strength - 1 Point (Intact)	\$100	ASTM D2166 / AASHTO T208
UC Cement Amended - Unconfined Compressive Strength - 3 Points (Per Percentage)	\$325	ASTM D1632 / D1633 mod
UC Lime Amended - Unconfined Compressive Strength - 3 Points (Per Percentage)	\$525	Industry Practice
UU - Unconsolidated Undrained Triaxial - 1 Point (Remolded)	\$225	ASTM D2850 / AASHTO T296
UU - Unconsolidated Undrained Triaxial - 1 Point (Intact)	\$125	ASTM D2850 / AASHTO T296
CU Triaxial with P.P. Measurements - 3 Points (Remolded)	\$1,350	ASTM D4767
CU Triaxial with P.P. Measurements - 3 Points (Intact)	\$1,200	ASTM D4767
SOIL PERMEABILITY		
Flex Wall Permeability (Hydraulic Conductivity) (Remolded)	\$350	ASTM D5084
Flex Wall Permeability (Hydraulic Conductivity) (Intact)	\$300	ASTM D5084
SOIL CONSOLIDATION / SWELL		
Consolidation - Remolded (24hr)	\$1,050	ASTM D2435 "A" / AASHTO T216 "A"
Consolidation - Intact (24hr)	\$900	ASTM D2435 "A" / AASHTO T216 "A"
Consolidation - Remolded (100% Primary)	\$725	ASTM D2435 "B" / AASHTO T216 "B"
Consolidation - Intact (100% Primary)	\$450	ASTM D2435 "B" / AASHTO T216 "B"
One-Dimensional Swell or Collapse - 4 points	\$1,000	ASTM D4546 "A"
One-Dimensional Swell or Collapse - 1 point	\$225	ASTM D4546 "B"
One-Dimensional Swell or Collapse - 1 point with D2435	\$500	ASTM D4546 "C"
Expansion Index	\$450	ASTM D4829
THERMAL RESISTIVITY		
Single Point Test	\$150	ASTM D5334
Multi-Point Test with Dry Out Curve	\$750	ASTM D5334
SOIL CORROSION		
Resistivity	\$160	ASTM G187 / AASHTO T288
pH	\$15	G51 / ASTM D4972 / AASHTO T289
Chloride	\$55	AASHTO T291
Sulfate	\$185 / \$55	ASTM C1580 / AASHTO T290
Sulfide	\$55	AWWA 4500, A.4C
Oxidation-Reduction Potential (ORP)	\$55	ASTM G200
Total Sulfur	\$80	ASTM D4239
Pyrite (Forms of Sulfur)	\$100	ASTM D2492





# GEOTECHNICAL TESTING SERVICES

A TRI ENVIRONMENTAL COMPANY

## 2023 FEE SCHEDULE

Ben Schultz - Laboratory Manager

bschultz@gts-labs.com

412-771-5340

Authorization to proceed and/or acceptance of TRI testing results indicates Client acceptance to payment terms of Net 30 unless the payment terms were already specified in a Master Services Agreement that covers this engagement.

Effective: 4/21/2023

WATER CORROSION		
Resistivity & Conductivity	\$135	ASTM D1125
pH	\$25	ASTM D1293
Chloride	\$75	ASTM D512
Sulfate	\$75	ASTM D516
FIRE RESISTIVE MATERIALS		
Material Density <i>(Specimens provided by Client)</i>	\$100	ASTM E605
CEMENT PRODUCTS		
Chloride Permeability - 3 Points	\$850	ASTM C1202 / AASHTO T277
Compressive Strength of Concrete	\$18 / Sample	ASTM C39
Compressive Strength of Grout	\$18 / Sample	ASTM C39 / ASTM C109
Compressive Strength of Mortar	\$18 / Sample	ASTM C109
Compressive Strength of Cores - 1 specimen	\$75	ASTM C42 / C39
Coring Fee <i>(2" bit &amp; 4" bit)</i>	\$100	Industry Practice
Density, Absorption, and Voids in Hardened Concrete	\$250	ASTM C642
AGGREGATES / GRAVEL / SAND		
Carbonate Content	\$325	ASTM D3042
Rigid Wall Permeability <i>(3" &amp; 6" Diameter)</i>	\$250	ASTM D2434
Sieve Analysis	\$105	PTM 616 / ASTM C136 / AASHTO T27
Percent Passing #200 Sieve	\$70	PTM 100 / ASTM C117 / AASHTO T11
Sodium Sulfate Soundness	\$500	PTM 510 / ASTM C88 / AASHTO T104
Magnesium Sulfate Soundness	\$500	ASTM C88 / AASHTO T104
Clay Lumps and Friable Particles in Aggregates	\$200	ASTM C142 / AASHTO T112
Los Angeles Abrasion - Small-Size Coarse Aggregate	\$400	ASTM C131 / AASHTO T96
Los Angeles Abrasion - Large-Size Coarse Aggregate	\$400	ASTM C535
Flat and Elongate Particles	\$450	ASTM D4791
Specific Gravity and Absorption - Fine	\$125	ASTM C128 / AASHTO T84
Specific Gravity and Absorption - Coarse	\$75	ASTM C127 / AASHTO T85
STEEL & BLAST FURNACE SLAG		
Bulk Density of Aggregates - Blast Only <i>(Rodding Method)</i>	\$65	ASTM C29 "A" / AASHTO T19 Sec 10
Potential Expansion of Steel Slags - 1 Point <i>(PTM Proctor not Included)</i>	\$525	PTM 130
PennDOT Proctor <i>(required for Expansion)</i>	\$150	PTM 106
GEOSYNTHETICS		
Peel & Shear Testing <i>(Some Day - 24 hours)</i>	\$50	ASTM D6392 / GRI GM19a
Peel & Shear Testing <i>(received after 5 PM or Weekends)</i>	\$65	ASTM D6392 / GRI GM19a
FLY ASH / BOTTOM ASH		
Moisture Content	\$30	ASTM C311
Sieve Analysis	\$80	ASTM C311
Hydrometer	\$85	ASTM C311
Loss on Ignition	\$70	ASTM C311
Standard Proctor	\$300	ASTM D698 / AASHTO T99
Standard Proctor - 1 Point	\$120	ASTM D698 / AASHTO T99
Modified Proctor	\$350	ASTM D1557 / AASHTO T180
Modified Proctor - 1 Point	\$140	ASTM D1557 / AASHTO T180
Rigid Wall Permeability <i>(3" &amp; 6" Diameter) bottom ash only</i>	\$350	ASTM D2434
Flex Wall Permeability <i>(Hydraulic Conductivity) fly ash only</i>	\$450	ASTM D5084
ROCK CORE		
Mohs Hardness of Rock	\$50	Industry Practice
Unconfined Compressive Strength of R.C.	\$120	ASTM D7012 "C"
Modulus of Elasticity <i>(includes UCS on companion), NQ,NX</i>	\$250	ASTM D7012 "D"
Modulus of Elasticity & Poisson's Ratio <i>(includes UCS), NQ,NX</i>	\$375	ASTM D7012 "D"
Point Load - Per Point	\$55	ASTM D5731
Point Load - 10 Points	\$325	ASTM D5731
Splitting Tensile - Per Point	\$55	ASTM D3967
Splitting Tensile - 10 Points	\$325	ASTM D3967
Slake Durability	\$200	ASTM D4644
OTHER		
Sample Pickup Mileage Round Trip <i>(after 50 miles)</i>	\$2.72	No Hourly Charge
Rush Testing Surcharge <i>(&lt;1 Week)</i>		Call
Contamination Surcharge		Call