

Airport Name:	Cape Girardeau Regional
Project No.:	3-29-0013-015
County:	Scott/Cape Girardeau

**AVIATION PROJECT CONSULTANT SUPPLEMENTAL AGREEMENT NO. 1  
CONSTRUCTION SERVICES**

THIS SUPPLEMENTAL AGREEMENT NO. 1 for Construction Services is entered into by the City of Cape Girardeau, Missouri (hereinafter, "Sponsor") and Crawford, Murphy & Tilly, Inc. (hereinafter, "Consultant").

WITNESSETH:

WHEREAS, the Sponsor and the Consultant entered into an Agreement on November 17, 2021, to accomplish a project at the Cape Girardeau Regional Airport, (hereinafter, "Original Agreement"); and

WHEREAS, the Sponsor and the Consultant now desire to enter into Supplemental Agreement No. 1 to otherwise complete, extend or continue the Original Agreement as provided herein.

NOW, THEREFORE, in consideration of the mutual promises, covenants, and representations contained herein the parties agree as follows:

(1) SCOPE OF SERVICES:

(A) The Services to be provided by the Consultant under Supplemental Agreement No. 1 are additional services which are beyond the scope of services provided in the Original Agreement. These additional professional services are generally described and defined in Section (17)(Federal) of the Original Agreement and Exhibit II - SA1, which is attached hereto and incorporated herein by reference.

(2) FEES AND PAYMENTS:

(A) The Consultant shall be reimbursed in accordance with Section (8)(State) or (9)(Federal) of the Original Agreement.

(B) The costs of Supplemental Agreement No. 1 shall be in addition to the cost of the Original Agreement.

(C) The lump sum fee and maximum amount payable included in Section (9)(Federal) of the Original Agreement are hereby modified to be cost plus fixed fee not to exceed as follows:

	ORIGINAL AMOUNT	SUPPLEMENTAL AGREEMENT NO. 1	TOTAL
Lump Sum	\$143,065.99	N/A	\$143,065.99
Fixed Fee	N/A	\$25,511.73	\$25,511.73
Max. Fee Payable	\$143,065.99	\$314,811.16	\$457,877.15

(D) Estimated costs for the services in Supplemental Agreement No. 1 are defined in Exhibit IV - SA1 and Exhibit V - SA1, which are attached hereto and incorporated herein by reference.

(3) PERIOD OF SERVICE: Exhibit VI, Performance Schedule, of the Original Agreement is hereby revised to include time for the performance of these additional services. The total time to be added to Exhibit VI for completion of these additional services shall be 160 calendar days. The projected completion date shown on Exhibit VI is now revised to 45 days after the completion of construction, which includes time for performance of all remaining services in the Original Agreement and the services in Supplemental Agreement No. 1 and submittal of all deliverables.

(4) DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS:

(A) DBE Goal: The following DBE goal has been established for this Supplemental Agreement No. 1. The dollar value of services and related equipment, supplies, and materials used in furtherance thereof which is credited toward this goal will be based on the amount actually paid to DBE firms. The goal for the percentage of services to be awarded to DBE firms is 6% of the total Supplemental Agreement No. 1 dollar value.

(B) DBE Participation Obtained by Consultant: The Consultant has obtained DBE participation, and agrees to use DBE firms to complete 6% of the total services to be performed under this Supplemental Agreement No. 1 by dollar value. The DBE firms which the Consultant shall use, and the type and dollar value of the services each DBE will perform, is as follows:

DBE FIRM NAME, STREET AND COMPLETE MAILING ADDRESS	TYPE OF DBE SERVICE	TOTAL \$ VALUE OF THE DBE SUBCONTRACT	CONTRACT \$ AMOUNT TO APPLY TO TOTAL DBE GOAL	% OF SUBCONTRACT \$ VALUE APPLICABLE TO TOTAL GOAL
TSi Geotechnical 1340 North Price Road St. Louis, MO 63132	Geotechnical, Materials Testing	\$93,476.10	\$93,476.10	29.7%

(5) SUBCONSULTANTS:

(A) The Consultant agrees that except for those firms and for those services listed below, there shall be no transfer of engineering services performed under this Supplemental Agreement No. 1 without the written consent of the Sponsor. Subletting, assignment, or transfer of the services or any part thereof to any other corporation, partnership, or individual is expressly prohibited. Any violation of this clause will be deemed cause for termination of this Supplemental Agreement No. 1.

Exceptions (Subconsultant Information):

FIRM NAME	COMPLETE ADDRESS	NATURE OF SERVICES
TSi Geotechnical	1340 North Price Road St. Louis, MO 63132	Geotechnical, Materials Tetsing

(6) ORIGINAL AGREEMENT: Except as otherwise modified, amended, or supplemented by this Supplemental Agreement No. 1, the Original Agreement between the parties shall remain in full force and effect and the terms of the Original Agreement shall extend and apply to this Supplemental Agreement No. 1.

IN WITNESS WHEREOF, the parties have entered into this Supplemental Agreement No. 1 on the date last written below.

Executed by the Consultant this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

Executed by the Sponsor this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

CONSULTANT

SPONSOR

By \_\_\_\_\_

By \_\_\_\_\_ .

Title \_\_\_\_\_ .

Title \_\_\_\_\_

ATTEST:

ATTEST:

By \_\_\_\_\_

By \_\_\_\_\_ .

Title \_\_\_\_\_

Title \_\_\_\_\_

**EXHIBIT II**  
**SCOPE OF SERVICES**

NOTE: Per the Cape Girardeau Regional Airport Disadvantaged Business Enterprise (DBE) program, the required DBE participation for this agreement is **six percent (6%)**.

Costs to be based on the allowed 105 calendar days (including overnight and weekend work) for construction completion.

1. Preliminary
  - a. Prepare copies of the Construction Plans and Project Manual for use by the Contractor during construction.
  - b. Develop a **Federal Construction Observation Program** in accordance with FAA and MoDOT requirements.
  - c. Include a sealed, signed and dated copy of the Construction Observation Program (COP) with this executed Supplemental Agreement.
  - d. Attend and conduct a pre-construction conference. Minutes of the conference will be prepared and distributed to all attendees.
2. Provide construction administration, on-site construction observation, and material(s) testing per the COP:
  - a. Provide construction observation services (one full-time personnel, one part-time -- including full-time personnel for 10-day, day/night runway closure phase -- and assistance as necessary), including preparation of weekly reports and other reports as required by the COP to document the prosecution and progress of the Project.
  - b. Attend and conduct Pre-Pave and Pre-Runway Closure meetings
  - c. Review shop drawings and material certification submittals as provided by the Contractor.
  - d. Update and Submit Part 139 Signs and Marking Plan for review prior to materials procurement (per FAA request)
  - e. Perform material(s) testing (field and laboratory) as required by the COP.
  - f. Respond to field issues throughout the duration of the project.
  - g. Prepare Contractor's progress estimates and Sponsor's request for reimbursement of funds.
  - h. Prepare change orders and supplemental agreements necessary for construction of the project.
  - i. Attend and conduct a final review of the Project with the Sponsor, MoDOT,

and the Contractor

### 3. Project Closeout Phase

- a. Prepare and submit to the Sponsor and the FAA one (1) electronic set of record drawings on a compact disc (CD) in .pdf format copied to a single file.
- b. Prepare and submit to the Sponsor and the FAA a Final Testing Report as required by the COP.
- c. Prepare and submit to the Sponsor an updated **Airport Layout Plan (ALP) showing** as-built conditions. All ALP sheets affected by the project will be updated. The sponsor will approve and sign as necessary and forward four (4) full size copies to the FAA for approval. FAA will distribute the copies as one (1) to the Sponsor, one (1) to MoDOT (if desired), one (1) to FAA, and one (1) to the Consultant. An electronic copy of the updated sheets will be submitted to both the FAA and the City in .pdf format, with CADD files submitted to the City.
- d. Provide FAA and the Sponsor with all closeout documents as required for project final acceptance.
- e. Complete the as-built Airports GIS (AGIS) non-safety critical survey of all new pavement limits, drainage structures, pavement markings, lighting, signage and miscellaneous electrical installations, including AGIS geometry creation, attribution and data upload to the FAA AGIS website.

**EXHIBIT IV - SA1**

**DERIVATION OF CONSULTANT PROJECT COSTS (CONSTRUCTION)**

EXHIBIT IV (SA1)  
 DERIVATION OF CONSULTANT PROJECT COSTS  
 CAPE GIRARDEAU REGIONAL AIRPORT  
 CITY OF CAPE GIRARDEAU, MISSOURI  
 RECONSTRUCTION OF TAXIWAY B, REPAIR OF SELECT APRON PANELS  
 CONSTRUCTION PHASE SERVICES  
 April 1, 2022

<b>Basic Services</b>	<b>Fee</b>	<b>Hours</b>
Construction Phase	\$300,750.13	1,478
<b>Special Services</b>	<b>Fee</b>	<b>Hours</b>
AGIS Post-Construction Survey	\$14,061.03	121
<b>Total</b>	<b>\$314,811.16</b>	<b>1,599</b>

**EXHIBIT IV (SA1)**

**DERIVATION OF CONSULTANT PROJECT COSTS**

**CAPE GIRARDEAU REGIONAL AIRPORT  
CITY OF CAPE GIRARDEAU, MISSOURI  
RECONSTRUCTION OF TAXIWAY B, REPAIR OF SELECT APRON PANELS  
CONSTRUCTION PHASE SERVICES**

April 1, 2022

**1 DIRECT SALARY COSTS:**

TITLE	HOURS	RATE/HOUR (2022 rates)	COST (\$)
Principal	0	\$89.91	\$0.00
Project Manager II	4	\$72.91	\$291.64
Project Manager I	104	\$56.76	\$5,903.04
Senior Engineer I	151	\$42.66	\$6,441.66
Engineer I	238	\$32.69	\$7,780.22
Senior Planner I	2	\$41.64	\$83.28
Planner I	0	\$32.80	\$0.00
Senior Technician I	843	\$40.40	\$34,057.20
Technician II	214	\$35.18	\$7,528.52
Land Surveyor	34	\$43.10	\$1,465.40
Admin/Account. Assistant	9	\$20.77	\$186.93
	<u>1,599</u>		
Total Direct Salary Costs			= \$63,737.89

**2 LABOR AND GENERAL ADMINISTRATIVE OVERHEAD:**

2a	Percentage of Direct Salary Costs	@	<u>166.61</u> %	=	\$106,193.70
2b	FCCM Rate (Optional)	@	<u>0.23</u> %	=	\$146.60

**3 SUBTOTAL:**

Items 1 and 2	=	\$170,078.19
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**4 PROFIT:**

15 % of Item 3 Subtotal	=	\$25,511.73	Fixed Fee
		Subtotal	\$195,589.91

**5 OUT-OF-POCKET EXPENSES:**

a. Mileage	7590 Miles	@	\$0.585 / Mile	=	\$4,440.15
b. Construction Vehicle	111 Days	@	\$15.00 / Day	=	\$1,665.00
c. Meals	116 Days	@	\$45.00 / Day	=	\$5,220.00
d. Motel	116 Nights	@	\$120.00 / Night	=	\$13,920.00
e. Printing and Shipping				=	\$500.00

Total Out-of-Pocket Expenses	=	\$25,745.15
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**6 SUBCONTRACT COSTS:**

a. Mat'l Tests P-152, 219, 307, 401, 501, 610 (TSi) (DBE)	=	\$88,876.10
b. Geotechnical Inspection (Est.) (TSi) (DBE)	=	\$4,600.00
c.	=	\$0.00
d.	=	\$0.00
	=	\$93,476.10

**7 MAXIMUM TOTAL FEE:**

Items 1, 2, 3, 4, 5 and 6	=	\$314,811.16	Not to Exceed
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**EXHIBIT V - SA1**

**ENGINEERING CONSTRUCTION SERVICES-COST BREAKDOWN**



TSI GEOTECHNICAL

MATERIALS TESTING, ON-CALL GEOTECHNICAL SERVICES



1340 North Price Road  
St. Louis, MO 63132  
314.373.4000 T  
314.227.6622 F

[www.tsigeotech.com](http://www.tsigeotech.com)

April 1, 2022

Bryan Hutsell  
**CRAWFORD, MURPHY & TILLY**  
One Memorial Drive  
St. Louis, MO 63102

**RE: Material Testing Services  
Cape Girardeau Airport  
Cape Girardeau, Missouri  
TSi Proposal No. SLM22041.00**

Dear Mr. Hutsell:

TSi Geotechnical Inc. (TSi) a certified **WBEMBE/DBE** firm, is pleased to present the following proposal to provide material testing services during the Cape Girardeau Airport project. TSi understands the testing services will be related to soil, aggregate/recycled concrete, cement stabilized base, concrete, and asphalt. Services for this work will be coordinated being between TSi's St. Louis office and a designated representative from Crawford, Murphy & Tilly (CMT). TSi understands the project consists of the construction of a new taxiway (A2), Reconstruction of portions of Taxiway A & B, Reconstruction of the existing Taxiway B/South Apron, And panel Replacement on the apron.

#### SCOPE OF SERVICES

We propose to provide construction observation soil and material testing services for the new construction. The following are construction testing services that we anticipate will be performed during the construction phase of the project:

- Evaluate earth fill and crushed stone aggregates to be used as fill and/or backfill. This evaluation would include obtaining proctor samples for the performance of modified Proctor tests in accordance with ASTM D 1557, Atterberg Limits (ASTM D 4318). For the P-219 rock perform specific Gravity on the oversized fraction. For P-219/154 rock perform gradation (ASTM C117/136).
- Observe the placement of earth fill and backfill, or crushed stone aggregate, and test for in-place density using a nuclear moisture density gauge (ASTM D 6938) to assess

PROFESSIONAL SERVICES SINCE 1989

## **PROPOSAL FOR CONSTRUCTION MATERIALS TESTING**

### **Cape Girardeau Airport**

April 1, 2022

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the degree of compaction being obtained.

- During P-307 placement obtain samples, 3- 6x12 cylinders, per 1200 sqyd placed for purpose of performing compressive strength tests.
- Perform quality control tests on concrete delivered to the project site. This would include slump (ASTM C 143), air entrainment (ASTM C 173 or C 231), temperature test (ASTM C 1064), and preparation of test Beams (ASTM C 31) for P-501; or preparation of cylinders for P-610 . For P-501 concrete: One set of (2) beams will be cast per sub-lot, with 4-6 sub-lots constituting a lot; sampled on a random basis. For P-610 concrete: One set of (4) cylinders will be cast per days placement. Concrete Samples will be initially cured in facility established by the contractor then cured in a lime bath until testing at 28-days.
- Obtain cores cut by the contractor and test one core per subplot to verify thickness.
- During asphalt placement, test for required compaction via nuclear density guage.
- At the completion of the project, a closeout letter will be prepared summarizing all testing results for the project.

## **COMPANY INFORMATION**

Founded in 1989, TSi Geotechnical, Inc. (M/W/DBE) is a specialized practice in geotechnical engineering, drilling, construction observation and materials testing. TSi provides soil and foundation studies for buildings, bridges, retaining walls, and other structures, and to provide geotechnical consulting engineering services for new dams, roadways, slope stability assessments, seismic analysis and mine subsidence studies. TSi also performs laboratory testing, field-testing and construction observation and testing related to foundation construction, earthwork, concrete, asphalt, aggregates and other construction materials.

TSi's construction observation and materials testing department is professional and well trained in many aspects of construction services. Our capabilities include, but are not limited to:

- Observing fill placement and measuring the level of compaction
- Observing the construction of shallow and deep foundations, including examining the bearing materials for drilled piers and piles.
- Installing instrumentation and monitoring the settlement of fill materials

## **PROPOSAL FOR CONSTRUCTION MATERIALS TESTING**

### **Cape Girardeau Airport**

April 1, 2022

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- Performing field tests on aggregate, concrete, asphalt, steel and masonry materials.
- Coring concrete and asphalt to obtain samples for testing.

TSi takes pride in our commitment to safety and our safety program. This program is a top priority for TSi. We actively encourage safety consciousness, expecting everyone to be cautious while working at TSi. It is our responsibility to make a safe work environment for our employees and we take this responsibility seriously.

In general, both TSi's total staff and local office minority staff should account for about **60%** of our fee and women about **6%**. The women will be a part of the minority staff.

## **DOCUMENTATION**

TSi will document data and pertinent observations made in the field using our reporting software. Concrete Test Reports will be prepared for each set of cylinders and beams tested in our laboratory. After office review and approval, final copies of field and laboratory reports will be sent to CMT and designated parties involved in the project. At the conclusion of the project a summary letter including all project test results will be prepared and sent to CMT.

#### ASSUMPTIONS/CLARIFICATIONS

In preparing this scope of services and cost estimate, TSi has made the following assumptions:

1. For purpose of estimate the required testing frequency, from specs, and the estimated quantities, as provided via email from CMT dated March 22, 2022, was used to estimate required # of trips.
2. As stated in the email RFP from CMT; portions of the construction would take place overnight. For estimating purposes, it is assumed that a portion of the scope will occur overnight. As thus a overnight premium has been added to the man-hours for this.
3. As actual schedule for work is not yet know, and due to distance of project from TSi's office; for estimating purposes it is assumed that a portion of work for each line item may require overnight stay for technicians.
4. For estimating purposes it is assumed that majority of the work will not occur concurrently.
5. Due to actual schedule during construction, actual number of trips to perform the aforementioned scope of work could vary.

#### FEE

We propose to perform the field, laboratory, and supervisory services on a time and expense basis in accordance with the attached Summary of Unit Rates, Special testing or personnel required that are not included in the attached Summary of Unit Rates would be billed in accordance with the Schedule of Fees in effect at the time services are performed.

TSi estimates the cost associated with the construction and materials testing services to be: **\$88,876.10**

This estimate is based on information provided by CMT via email on March 22, 2022. TSi has estimated approximately 75 trips to perform the previously described scope of services. A breakdown of cost is included in the attached Summary of Time and Materials Estimate. If additional trips greater than the estimated 75 are required, then additional charges will incur above the previously estimated dollar amount. This cost estimate is based only upon initial testing. Retests of failed areas will be performed in accordance with the attached Summary of Unit Rates.

**PROPOSAL FOR CONSTRUCTION MATERIALS TESTING**  
**Cape Girardeau Airport**  
April 1, 2022  
Page 5

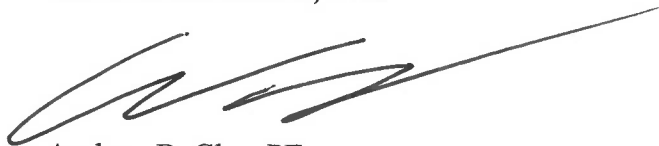
ACCEPTANCE

If this proposal meets your approval, please formally authorize the material testing and inspection services previously described by signing the acceptance at the end of this proposal and returning one copy to our office.

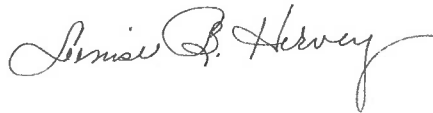
We appreciate this opportunity to be of service to the CMT and look forward to working with you on this project. If you have any questions or would like to discuss any aspect of this proposal, please contact us at 314 373.4052.

Sincerely,

**TSI GEOTECHNICAL, INC.**



Andrew DeClue, PE  
Manager of Construction Services



Denise B. Hervey P.E.  
Principal

Attachments: Statement of Terms and Conditions  
Summary of Time and Materials Estimate

Accepted by:

**CRAWFORD, MURPHY & TILLY**

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

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

Note: The contents of this proposal are confidential and shall not be distributed to any person(s) other than those for whom this proposal was intended.



## **TERMS AND CONDITIONS**

To assure an understanding of matters related to our mutual responsibilities, these terms and conditions for professional engineering services are made a part of the agreement for the TSi Geotechnical, Inc. (Engineer) services, as described in a separate proposal to the Client:

### **AMENDMENTS**

This agreement may be amended in writing providing both the Client and Engineer agree to such modifications.

### **COMPENSATION FOR ENGINEERING SERVICES**

The basis for compensation will be as identified in the proposal.

- When "Lump Sum" payment is utilized, it shall include all labor and expenses (for the scope of work as defined in the proposal) incurred by the Engineer and shall not exceed the fixed payment amount without prior authorization of the Client.
- When "Time and Materials" is utilized, it shall be computed by a multiplier factor times salary cost plus reimbursable expenses.
  - The "Salary Costs" means the direct labor and wages paid to all engineering personnel engaged directly on the work plus the cost of customary and statutory benefits including social security contributions, unemployment, health, sick leave, vacation, Workmen's Compensation, incentive and holiday pay applicable thereto.
  - "Reimbursable Expenses" means the actual expenses incurred directly or indirectly in connection with the work including but not limited to the following: Transportation and subsistence, toll telephone calls, telegrams, reproduction or printing, computer time and outside consultants.
  - The "Multiplier" is a factor for general direct overhead, indirect costs, profit and other costs. The Multiplier factor rate shall be identified in the agreement.

### **TIME OF PAYMENT**

The Engineer may submit monthly invoices for services and expenses based upon the proportion of the actual work completed at the time of billing. Unless provided for otherwise, payments for engineering services will be due and payable thirty (30) calendar days from the date of the Engineer's invoice.

### **LATE PAYMENT**

If the Owner fails to make any payment due the Engineer for services and expenses within sixty (60) days, a service charge of 1.5 % per month will be added to the Client's invoice. This is an annual rate of 18 %.

### **WAIVER OF SUBROGATION**

To the extent damages are covered by property insurance during construction, Client and Engineer waive all rights against each other and against the Owner, Client, Engineer, contractors, consultants, subconsultants, agents and employees of the other for damages, except such rights as they may have to the proceeds of such insurance. Engineer Client, or Owner, as appropriate, to the extent as allowed by law, shall require of the Contractor, other consultants, subcontractors, agents and employees of any of them similar waivers in favor of the other parties enumerated herein.

### **LIMITATION OF LIABILITY**

In recognition of the relative risks and benefits of the Project to both the Client and the Engineer, the risks have been allocated such that the Client agrees, to the fullest extent permitted by law, to limit Engineer's liability to Client on the project for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, including, but not limited to,



## **TERMS AND CONDITIONS**

### **LIMITATION OF LIABILITY, Continued**

claims of negligence, breach of contract, negligent errors or omissions, negligent misrepresentation or any other tort or contract theory, arising out of the work performed for Client or the Owner and for which legal liability may be found to rest upon Engineer, so that the total aggregate liability of the Engineer to Client shall not exceed \$50,000.00, or Engineer's total fee for services on the Project, whichever is greater. Additional limits of liability may be negotiated and made a part of this Agreement for an additional fee. It is intended that this limitation apply to any and all liability or cause of action however alleged or arising, unless otherwise prohibited by law.

Notwithstanding any other provision in this Agreement, and to the fullest extent permitted by law, neither the Client nor the Engineer, their respective officers, directors, partners, employees, contractors or subconsultants shall be liable to the other or shall make any claim for any incidental, indirect or consequential damages arising out of or connected in any way to the Project or to this Agreement. This mutual waiver of consequential damages shall include, but is not limited to, loss of use, loss of profit, loss of business, loss of income, delay damages, loss of reputation or any other consequential damages that either party may have incurred from any cause of action including negligence, strict liability, breach of contract and breach of strict or implied warranties. Both Client and Engineer shall require similar waivers of consequential damages protecting all the entities or persons named herein in all contracts and subcontracts with others involved in the project.

Limitations on liability, waivers and indemnities in this Agreement are business understandings between the parties and shall apply to all legal theories of recovery, including breach of contract or warranty, breach of fiduciary duty, tort (including negligence), strict or statutory liability, or any other cause of action, provided that these limitations on liability, waivers and indemnities will not apply to any losses or damages that may be found by a trier of fact to have been caused by the Engineer's gross negligence or willful misconduct. The parties also agree that Client will not seek damages in excess of the contractually agreed-upon limitations set forth above, either directly or indirectly through suits against other parties who may join the Engineer as a third-party defendant, and that this limitation of liability provision shall not be read to conflict with the indemnity or insurance provisions of this Agreement.

### **TERMINATION**

Either party may terminate this agreement upon written notice. Any termination shall only be for good cause such as for legal, unavailability of adequate financing or major changes in the work. In the event of any termination, the Engineer will be paid for all services and expenses rendered to the date of termination on a basis of salary cost times a multiplier of 2.55 (if not previously provided for) plus reimbursable expenses, plus reasonable termination costs.

### **REUSE OF DOCUMENTS**

All documents including drawings and specifications furnished by Engineer pursuant to this Agreement are instruments of these services with respect to the work. They are not intended or represented to be suitable for reuse by Client or others on extensions of this work, or on any other work. Any reuse without specific written verification or adaptation by Engineer will be at Client's sole risk, and without liability of Engineer, and Client shall indemnify and hold harmless engineer from all claims, damages, losses and expenses including attorneys fees arising out of or resulting there from. Any such verification or adaptation will entitle engineer to further compensation at rates to be agreed upon by Client and Engineer.

### **ESTIMATES OF COST FOR CONSTRUCTION PROJECTS**

Since the Engineer has no control over the cost of labor, materials or equipment or over a Contractor(s) method of determining prices, or over competitive bidding or market conditions, his opinions of probable Project Cost or Construction Costs that may be provided for herein are to be made on the basis of his experience and qualifications and represent his best judgment as a design professional familiar with the construction industry, but Engineer cannot and does not guarantee that proposals, bids or the construction cost will not vary from opinions of probable cost prepared by him.

**P-152**

**Assumptions: Mainly cut, but cut subgrade to be tested.**

1. One (1) trip at five (5) hours to p/u samples for proctor.
2. Four (4) trips at ten (10) hours to test compaction of minor fill and cut subgrade.
3. Technician to stay in area as needed.

**P-219/154**

**Assumptions: Recycled Concrete and P-154 rock(as required to supplement P-219)**

1. Two (2) trips at five (5) hours to obtain samples for proctors.
2. Six (6) trips at ten (10) hours to test compaction of P219/154 rock.
3. Technician to stay in area as needed.

**P-307**

**Assumptions: One set of 3 - 6x12 cylinders cast per 1200 SY of base placed. Due to nature of base material Cylinders will have to be capped to be properly tested.**

1. Ten (10) days at ten (10) hours to obtain samples of P-307.
2. Technician to stay in area and return the following day to STL with samples.

**P-401**

**Assumptions: Minor asphalt transition work is needed.**

1. One (1) trips at ten (10) hours to test compaction of asphalt.
2. Technician to stay in area as needed.

**P-610**

**Assumptions: Not every pour will be tested. One set of 4-cylinders (3-28, H) cast per trip.**

1. Twenty (20) trips at eight (8) hours to test concrete for light/sign bases, duct banks, drainage items.
2. Technician to stay in area as needed.
3. Twelve (12) trips at five (5) hours to p/u cylinders and return to lab.

**P-501**

**Assumptions: One set of 2-beams cast per subplot; 1-sublot per days placement.**

1. Twelve (12) days at twelve (12) hours to test concrete for pavement.
2. Technician to stay in area as needed.
3. Twelve (12) trips at five (5) hours to p/u beams and return to lab.
4. Three (3) trips at five (5) hours to obtain cores cut by contractor for purpose of pictures and measurements for thickness.

**Project Close out Letter**

1. At conclusion of the project a closeout letter will be prepared including summary of all testing performed on the project.

**Summary Time and Materials Estimate**  
**Cape Girardeau Airport**  
**Cape Girardeau, Missouri**

4/1/2022  
page 2

**Construction Phase**

MODOT Technician	574	Hours	@	\$ 22.00	\$ 12,628.00
MODOT Tech, OT	90	Hours	@	\$ 30.00	\$ 2,700.00
Proj. Assistant	20	Hours	@	\$ 18.00	\$ 360.00
Proj. Manager	<u>60</u>	Hours	@	\$ 45.00	<u>2,700.00</u>

Sub Total	744			\$	18,388.00
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*Overnight Premium				\$	958.00
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Total-Construction Phase				\$	19,346.00
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FAR OH		181.79%		\$	35,169.09
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Sub Total for TSi Labor Fee				\$	54,515.09
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Fixed Fee	0.146	x	\$ 54,515.09	\$	<u>7,959.20</u>
			Sub Total	\$	62,474.30

**Other Direct Costs**

Travel	75.00	trips	x	\$ 110.000	\$ 8,250.00
Per Diem	30	days	x	\$ 145.00	\$ 4,350.00
Modified Proctor - A/B	2	tests	x	\$ 215.00	\$ 430.00
Atterberg Limits	2	tests	x	\$ 75.00	\$ 150.00
Modified Proctor - C	2	tests	x	\$ 225.00	\$ 450.00
Gradation	2	tests	x	\$ 90.00	\$ 180.00
Specific Gravity	1	tests	x	\$ 100.00	\$ 100.00
Nuclear Density Guage	11	days	x	\$ 25.00	\$ 275.00
Flexural Strength - Beams	96	tests	x	\$ 40.00	\$ 3,840.00
Unit Weight - Beams	96	tests	x	\$ 25.00	\$ 2,400.00
Concrete Equipment	12	days	x	\$ 25.00	\$ 300.00
Compressive Strength	143	tests	x	\$ 16.00	\$ 2,288.00
Cylinder Molds	143	tests	x	\$ 1.60	\$ 228.80
Cylinder Caps	40	cyl	x	\$ 25.00	\$ 1,000.00
Core pics+thickness	48	cores	x	\$ 45.00	\$ 2,160.00

<b>Total</b>				<b>\$</b>	<b>88,876.10</b>
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\* Estimate based on approximately 20% of the testing happening overnight.