

Municipality	L O C A L A G E N C Y	 Illinois Department of Transportation	C O N S U L T A N T	Name Amec Foster Wheeler Environment and Infrastructure, Inc.
Township				Address 8745 W. Higgins Road, Suite 300
County Lake County – Division of Transportation		City Chicago		
Section		State Illinois		

THIS AGREEMENT is made and entered into this _____ day of _____, _____ between the above Local Agency (LA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the improvement of the above SECTION. Non-Motor Fuel Tax Funds, allotted to the LA ~~by the State of Illinois~~, under the general supervision of the State Department of Transportation, hereinafter called the "DEPARTMENT", will be used entirely ~~or in part~~ to finance ENGINEERING services as described under AGREEMENT PROVISIONS.

Section Description

Name Grass Lake Road Retaining Wall Rehabilitation

Route 18 Length 0 Mi. 2500 FT (Structure No. NA)

Termini Two steel sheet pile retaining walls, one east of and the second west of the Grass Lake Road Bridge

Description:

Phase I - Soil Borings and Geotechnical Investigation. Phase II – Plan preparation for remedial activities required to stabilize the retaining walls immediately east and west of the Grass Lake Road Bridge over Grass Lake.

Agreement Provisions

The Engineer Agrees,

1. To perform or be responsible for the performance of the following engineering services for the LA, in connection with the proposed improvements herein before described, and checked below:
 - a. Make such detailed surveys as are necessary for the preparation of detailed roadway plans
 - b. Make stream and flood plain hydraulic surveys and gather high water data, and flood histories for the preparation of detailed bridge plans.
 - c. Make or cause to be made such soil surveys or subsurface investigations including borings and soil profiles and analyses thereof as may be required to furnish sufficient data for the design of the proposed improvement. Such investigations are to be made in accordance with the current requirements of the DEPARTMENT.
 - d. Make or cause to be made such traffic studies and counts and special intersection studies as may be required to furnish sufficient data for the design of the proposed improvement.
 - e. Prepare Army Corps of Engineers Permit, **Lake County Stormwater Management Commission Permit**, Department of Natural Resources-Office of Water Resources Permit, Bridge waterway sketch, and/or Channel Change sketch, Utility plan and locations, and Railroad Crossing work agreements.
 - f. Prepare Preliminary Bridge design and Hydraulic Report, (including economic analysis of bridge or culvert types) and high water effects on roadway overflows and bridge approaches.
 - g. Make complete general and detailed plans, special provisions, proposals and estimates of cost and furnish the LA with **one (1) copy of each document in both hardcopy and electronic format**. Additional copies of any or all documents, if required, shall be furnished to the LA by the ENGINEER at the ENGINEER's actual cost for reproduction.
 - h. Furnish the LA with survey and drafts in **duplicate** of all necessary right-of-way dedications, construction easement and borrow pit and channel change agreements including prints of the corresponding plats and staking as required.
 - i. Assist the LA in the tabulation and interpretation of the contractors' proposals

- j. Prepare the necessary environmental documents in accordance with the procedures adopted by the DEPARTMENT's Bureau of Local Roads & Streets.
 - k. Prepare the Project Development Report when required by the DEPARTMENT.
 - l. **Services as included and/or defined in the attached Scope of Services.**
2. That all reports, plans, plats and special provisions to be furnished by the ENGINEER pursuant to the AGREEMENT, will be in accordance with current standard specifications and policies **of the LA of the DEPARTMENT**. It is being understood that all such reports, plats, plans and drafts shall, before being finally accepted, be subject to approval by the LA ~~and the DEPARTMENT~~.
 3. To attend conferences at any reasonable time when requested to do so by representatives of the LA ~~or the Department~~.
 4. In the event plans or surveys are found to be in error during construction of the SECTION and revisions of the plans or survey corrections are necessary, the ENGINEER agrees that the ENGINEER will perform such work without expense to the LA, even though final payment has been received by the ENGINEER. The ENGINEER shall give immediate attention to these changes so there will be a minimum delay to the CONTRACTOR.
 5. That basic survey notes and sketches, charts, computations and other data prepared or obtained by the ENGINEER pursuant to this AGREEMENT will be made available, upon request, to the LA ~~or the DEPARTMENT~~ without cost and without restriction or limitations as to their use.
 6. That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by the ENGINEER and will show the ENGINEER's professional seal where such is required by law.

The LA Agrees,

1. To pay the ENGINEER as compensation for all services rendered in accordance with this AGREEMENT according to the following method indicated by a check mark:
 - a. A sum of money equal to _____ percent of the awarded contract cost of the proposed improvement as approved by the DEPARTMENT.
 - b. A sum of money equal to the percent of the awarded contract cost for the proposed improvement as approved by the DEPARTMENT based on the following schedule:

Schedule for Percentages Based on Awarded Contract Cost

Awarded Cost	Percentage Fees	
Under \$50,000		(see note)
		%
		%
		%

Note: Not necessarily a percentage. Could use per diem, cost-plus or lump sum.

2. To pay for all services rendered in accordance with this AGREEMENT at the actual cost of performing such work plus percent to cover profit, overhead and readiness to serve - "actual cost" being defined as material cost plus payrolls, insurance, social security and retirement deductions. Traveling and other out-of-pocket expenses will be reimbursed to the ENGINEER at the ENGINEER's actual cost. Subject to the approval of the LA, the ENGINEER may sublet all or part of the services provided in section 1 of the ENGINEER AGREES. If the ENGINEER sublets all or part of this work, the LA will pay the cost to the ENGINEER plus an additional service charge of up to five (5) percent.

"Cost to Engineer" to be verified by furnishing the LA ~~and the DEPARTMENT~~ copies of invoices from the party doing the work. The classifications of the employees used in the work should be consistent with the employee classifications for the services performed. If the personnel of the firm, including the Principal Engineer, perform routine services that should normally be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the work performed. ***See the CECS**

The Total Not-to-Exceed Contract Amount shall be \$77,844

3. That payments due the ENGINEER for services rendered in accordance with this AGREEMENT will be made as soon as practicable after the services have been performed. ~~in accordance with the following schedule:~~

- ~~a. Upon completion of detailed plans, special provisions, proposals and estimate of cost - being the work required by section 1 of the ENGINEER AGREES - to the satisfaction of the LA and their approval by the DEPARTMENT, 90 percent of the total fee due under this AGREEMENT based on the approved estimate of cost.~~
- ~~b. Upon award of the contract for the improvement by the LA and its approval by the DEPARTMENT, 100 percent of the total fee due under the AGREEMENT based on the awarded contract cost, less any amounts paid under "a" above.~~

By Mutual agreement, partial payments, ~~not to exceed 90 percent of the amount earned,~~ may be made from time to time as the work progresses.

4. That, should the improvement be abandoned at any time after the ENGINEER has performed any part of the services provided for in sections 1 and 3 of the ENGINEER AGREES and prior to the completion of such services, the LA shall reimburse the ENGINEER for the ENGINEER's actual costs plus 15 percent incurred up to the time the ENGINEER is notified in writing of such abandonment - "actual cost" being defined as in paragraph 2 of the LA AGREES.
5. That, should the LA require changes in any of the detailed plans, specifications or estimates except for those required pursuant to paragraph 4 of the ENGINEER AGREES, ~~after they have been approved by the DEPARTMENT,~~ the LA will pay the ENGINEER for such changes on the basis of actual cost plus 15 percent to cover profit, overhead and readiness to serve - "actual cost" being defined as in paragraph 2 of the LA AGREES. It is understood that "changes" as used in this paragraph shall in no way relieve the ENGINEER of the ENGINEER's responsibility to prepare a complete and adequate set of plans and specifications.

It is Mutually Agreed,

1. That any difference between the ENGINEER and the LA concerning their interpretation of the provisions of this Agreement shall be referred to a committee of disinterested parties consisting of one member appointed by the ENGINEER, one member appointed by the LA and a third member appointed by the two other members for disposition and that the committee's decision shall be final.
2. This AGREEMENT may be terminated by the LA upon giving notice in writing to the ENGINEER at the ENGINEER's last known post office address. Upon such termination, the ENGINEER shall cause to be delivered to the LA all surveys, permits, agreements, preliminary bridge design & hydraulic report, drawings, specifications, partial and completed estimates and data, if any from traffic studies and soil survey and subsurface investigations with the understanding that all such material becomes the property of the LA. The ENGINEER shall be paid for any services completed and any services partially completed in accordance with section 4 of the LA AGREES.
3. That if the contract for construction has not been awarded one year after the acceptance of the plans by the LA ~~and their approval by the DEPARTMENT,~~ the LA will pay the ENGINEER the balance of the engineering fee due to make 100 percent of the total fees due under this AGREEMENT, based on the estimate of cost as prepared by the ENGINEER and ~~approved by the LA and the DEPARTMENT.~~
4. That the ENGINEER warrants that the ENGINEER has not employed or retained any company or person, other than a bona fide employee working solely for the ENGINEER, to solicit or secure this contract, and that the ENGINEER's has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the ENGINEER, any fee, commission, percentage, brokerage fee, gifts or any other consideration, contingent upon or resulting from the award or making of this contract. For Breach or violation of this warranty the LA shall have the right to annul this contract without liability.

IN WITNESS WHEREOF, the parties have caused the AGREEMENT to be executed in triplicate counterparts, each of which shall be considered as an original by their duly authorized officers.

Executed by the LA:

County of Lake _____ of the
(Municipality/Township/County)
ATTEST: State of Illinois, acting by and through its
County Board

By _____ Clerk
Lake County
(Seal)

By _____
Title Chairman of the County Board

RECOMMENDED FOR EXECUTION

Paula J. Trigg, P.E.
Director of Transportation/County Engineer
Lake County

Executed by the ENGINEER:

ATTEST:

By _____
Title _____

Engineering Firm

Street Address

City, State
By _____
Title _____

Note: Three (3) Original Executed Contracts – (2) LCDOT; (1) Consultant

Scope of Services

Grass Lake Road Retaining Walls

October 26, 2016

Amec Foster Wheeler Environment and Infrastructure, Inc. (AmecFW) inspected and monitored sheet pile retaining walls immediately east and west of the Grass Lake Road Bridge over Grass Lake. These walls support a bike path along Grass Lake Road. These walls have rotated away from the roadway resulting in damage to the path, and created uncertainty in their long term stability. In November of 2015 AmecFW began a six month inspection and monitoring program of these walls. We submitted our final inspection report and recommendations in May of 2016. The walls did not appear to be stable and wall repairs were recommended. Preliminary details and a cost estimate was provided in the final report for what potential repairs could consist of.

On August 29th, 2016 AmecFW met with Lake County officials to discuss our report and recommendations. It was decided that in order to determine if any portions of the walls could remain with minor modifications (eliminate the water seeping behind the wall), a subsurface investigation was necessary. If more involved repairs are required – such as those recommended in our inspection report - this subsurface investigation would also be necessary to prepare detailed plans.

This Scope of Services is divided into two Phases. Phase I will perform the Geotechnical Investigation and provide a recommended course of action and cost estimate. Upon concurrence of the remedial scope with the Lake County Division of Transportation, Phase II will create plans, specifications, and a detailed cost estimate.

Phase I – Geotechnical Investigation

1.1 Site Visit/Data Collection – Previous site visits focused on the retaining walls. No overall site investigations were conducted. As part of the Phase I for this project AmecFW will perform a visit to look for any obvious above ground utility markers that may affect drilling operations. We will also take other field measurements that may be required to supplement the GIS data that will be provided by Lake County. A topographic survey is not included in this scope of work, as it is not believed to be necessary for the assumed remedial effort.

At the request of Lake County during the meeting on August 29th, AmecFW will also measure and evaluate the existing guardrail and bridge parapet to determine if it meets current standards.

1.2 Drilling and Testing - AmecFW will use a local subcontractor – Testing Service Corporation (TSC) - to perform drilling operations for six (6) soil borings each extending to a planned depth of 30 feet, but may extend up to 50 feet below existing ground surface (bgs) if very soft soil is encountered, and laboratory testing. We will terminate drill if refusal (bedrock) is encountered at

a boring location, no rock coring is planned. A TSC proposal for this work in the amount of **\$16,640** has been attached and included in this scope of services.

Geotechnical Engineers from AmecFW will observe the drilling operations. We believe that the site will be accessible with a truck-mounted drill rig. The drill rig will advance the borings with hollow stem augers and/or flush-joint casing via drive and wash methods. The driller will perform standard penetration tests (SPT) from ground surface to 30 feet or up to 50 feet bgs at 5 feet intervals. The SPT test uses a 2-inch diameter split spoon sampler driven by a 140-pound hammer in accordance with ASTM D1586. Our on-site representative will seal the soil samples collected from split-spoon samplers in one-gallon zip-lock type bags. If we encounter fine grained soil, we will attempt to collect thin-wall (Shelby tube) samples at approximately 2-4 feet bgs, 6-8 feet bgs, 16-18 feet bgs, and 26-28 feet bgs per ASTM D1587.

The driller will abandon boreholes by filling them with cement-bentonite grout or in accordance with local and state regulations, whichever is more stringent. The backfill will be topped off with Portland cement concrete or cold patch asphalt to best match the existing pavement. Excess spoil from drilling, if any, will be disposed of on-site; we have not assumed any costs for any other site restoration.

It is assumed AmecFW will have unrestricted access to necessary outdoor areas of the subject property during the fieldwork portion of the study. The property owners will provide right-of-entry to us for the property at no cost, as well as notify current property users of our impending exploration and study. The site is accessible with the truck-mounted drill rig at the time of exploration. No site clearing will be necessary. Overburden at the boring locations do not include rubble fill (i.e., boulders) or other obstructions (i.e., buried foundations, infilled basements, cisterns or cellars, etc.) that cannot be easily penetrated with conventional sampling tools and flight augers. The borings will be backfilled with grout and topped with concrete or asphalt patch if located in a paved area. We have not included any costs for any other site restoration. We assume no permits are required to conduct the drilling activities. Prior to beginning the exploration, the driller will contact J.U.L.I.E.

AmecFW will also work with Lake County's GIS team to help identify and provide information on any known on-site, underground utility lines, wiring for luminaries, pipelines or other structures that exploration can damage. We cannot be responsible for damage to buried features not identified and clearly marked prior to the subsurface exploration. J.U.L.I.E. does not usually venture outside of public right-of-way and may not mark underground utilities on non- right-of-way facilities. We have not included cost for private utility locators, but can procure that service if needed. Please inform us if a private utility locator is needed.

1.3 Geotechnical Analysis - An Amec Foster Wheeler geotechnical engineer will review the boring logs and soil descriptions, and provide a geotechnical analysis of the borings. After reviewing the collected data, we will select representative soil samples for geotechnical laboratory testing to determine soil index and engineering properties. We anticipate laboratory testing of representative samples will include but not be limited to the following, and the actual quantity of tests will be determined upon completion of field investigation activities.

- Moisture Contents (ASTM D2216)
- Atterberg Limits (ASTM D4318)
- Grain Size Analysis (ASTM D422)

If we are successful in collecting thin wall (Shelby tube) samples, we plan to perform the following:

- Triaxial Shear CU with pore pressure test (ASTM D4767)
- Unconfined compressive strength (ASTM D2166)
- Consolidation test (ASTM D2435)

After completing the subsurface exploration and laboratory testing, we will publish a geotechnical report based on our experience, the laboratory test results, and the available exploration data. The report will include, but will not be necessarily limited to, the following:

- A review of the exploration and testing programs;
- Comments regarding the site and subsurface conditions;
- Discussion relative to the local geology;
- Discussion regarding our opinion of potential causes of wall movement;
- Recommendations for the design of repairs to the wall, including lateral earth pressure coefficients for active, at-rest, and passive loading conditions.
- Using our experience, the soil property recommendations from the geotechnical study, and the available site information, we will evaluate loading parameters and deflection criteria for the existing walls.
- We will assess global and local wall stability and factors of safety for slope stability.
- We will prepare two conceptual designs, including preliminary cost estimates for Lake County to review.

The report will also include a boring location Plan. The subsurface information will include individual boring logs.

We will provide a sealed copy of the geotechnical study report, in both hardcopy and electronic format.



Figure 1 Proposed Boring Locations West Approach



Figure 2 Proposed Boring Locations East Approach

Phase II – Plan Preparation

2.1 Roadway Plan Preparation – AmecFW will prepare Roadway Plan sheets that incorporate the existing topography obtained from Lake County’s GIS, our field measurements, and utility information together with resurfacing plans for the bike path and one lane width. It is assumed for the purpose of this scope of services that the remedial efforts can be limited to the bike path and a single lane of traffic.

Maintenance of Traffic (MOT) plans will be provided. It is assumed for the purpose of this scope of services that the remedial effort can be accomplished with a temporary lane closure. The plans will provide details so that flaggers will control a single lane of traffic during working hours, and both lanes will be open off-hours and on weekends.

If during the development of the recommended scope of work it is determined to be more cost effective (long term), or desired by Lake County to resurface both traffic lanes we will discuss this with Lake County prior to proceeding. We will discuss with Lake County prior to beginning Phase II if the recommended scope of work would require a different MOT plan (i.e. traffic controlled by temporary traffic signals) than that which is described above, or if additional scope items (i.e. guardrail adjustments or bridge parapet modification) are requested.

Special provisions and a detailed cost estimate shall also be provided.

2.2 Geo-Structural Services – AmecFW will provide detailed plans, special provisions, and a cost estimate for the wall stabilization scope that was approved in Phase I. It is currently assumed for the purpose of this scope of services that the wall stabilization effort would consist of a tie rod with a concrete dead man block spaced along the sections of the retaining walls that were found to require additional structural support. This is a remediation design approach that we consider conservative and reasonable, but is not a “worst case” remediation approach. A worst case approach will necessitate significantly more time to analyze and develop remediation schemes that can correct the problem(s). If the Phase I report recommends a remedial effort for the walls that will exceed the assumptions made in this Scope of Services, this will be discussed with Lake County before AmecFW begins any Phase II work.

Repair plans will also be provided for the sections of the bridge abutments/wingwalls where the wall movement has resulted in deterioration.

2.3 Review Meetings and Construction Support – Based on previous Lake County projects, AmecFW will prepare two submittals for the Phase II portion of this scope of services. A Prefinal set of plans, special provisions, and cost estimate and a Final set after all Prefinal review comments are addressed. All submittals will be in both electronic and hard copy format. AmecFW will attend a review meeting with Lake County after the Phase I is complete to discuss and agree upon a final scope of work for the Phase II. Any changes in the Phase II scope can be addressed and negotiated at that time. AmecFW will also attend a review meeting with Lake County after the Prefinal submittal to discuss the project specifics and address any review comments prior to Final plan development.

AmecFW will also perform design engineering support during the construction phase. This will include reviewing Contractor submittals and material testing reports, responding to Contractor Requests For Information (RFI's), and attending site visits as deemed necessary or as requested by Lake County during construction. It is assumed for the purpose of this Scope of Services that one (1) site visit would be required during construction.

2.4 Administrative and QA/QC – AmecFW will utilize our internal QA/QC program to document the internal quality reviews on all outgoing submittals and lab analysis results.

**COST PLUS FIXED FEE
COST ESTIMATE OF CONSULTANT SERVICES**

DF-824-039
REV 12/04
10/26/16

FIRM
PSB
PRIME/SUPPLEMENT

Amec Foster Wheeler Environment and Infrastructure
Multiple Bike Path Abutment Repairs OVERHEAD RATE
PRIME COMPLEXITY FACTOR

1.4555
0

DATE

FIXED FEE = 14.5%[DL + R(DL) + OH(DL) + IHDC]

ITEM	MANHOURS (A)	PAYROLL (B)	OVERHEAD & FRINGE BENF (C)	IN-HOUSE DIRECT COSTS (D)	FIXED FEE (E)	Outside Direct Costs (F)	SERVICES BY OTHERS (G)	DBE TOTAL (H)	TOTAL (B-G)	% OF GRAND TOTAL
Phase 1 - Geotechnical Investigation	72	3,199.25	4,656.50		1,139.08	1,221.00	16,640.00		26,855.84	34.50%
Phase 2 - Plan Preparation	441	18,079.10	26,314.13		6,437.02	157.00			50,987.24	65.50%
TOTALS	513	21,278.34	30,970.63	0.00	7,576.10	1,378.00	16,640.00	0.00	77,843.08	100.00%

Subconsultant
Testing Service Corporation \$ 16,640.00

Grass Lake Road Retaining Walls													
10/26/16													
Item Number	Work Item	Sheet Count	Sr Associate/ Project Manager	Associate Engineer	Senior 2 Engineer	Senior 1 Engineer	Tech Professional 3	Technician 3	Technician 4	Admin	AMEC Item Total	TSC	Grand Total
1.0	Phase 1 - Geotechnical Investigation												
1.1	Site Visit/Data Collection		0	2	4	12	6	0	0	0	24		
1.2	Drilling and Testing		0	1	2	24	0	0	0	0	27		
1.3	Geotechnical Analysis		0	11	6	0	0	0	0	4	21		
	Subtotal:	0	0	14	12	36	6	0	0	4	72	0	0
2.0	Phase 2 - Plan Prepatation												
2.1	Roadway Plan Preparation	6	2	6	48	0	76	92	0	0	224		
2.2	Geo-Structural Services	3	16	0	20	80	0	0	0	0	116		
2.3	Review Mtgs and Construction Support		6	12	16	14	16	0	0	0	64		
2.4	Admin & QAQC		4	12	8	0	0	0	0	13	37		
	Subtotal:	9	28	30	92	94	92	92	0	13	441	0	0
	PROJECT SUMMARY												
1.0	Phase 1 - Geotechnical Investigation	0	0	14	12	36	6	0	0	4	72	0	0
2.0	Phase 2 - Plan Prepatation	9	28	30	92	94	92	92	0	13	441	0	0
	TOTALS	9	28	44	104	130	98	92	0	17	513	0	0



GRASS LAKE ROAD RETAINING WALLS DESIGN SCHEDULE

October 26, 2016

	2016				2017											
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phase I - Geotechnical Investigation																
Site Visit/Data Collection																
Drilling and Testing																
Geotechnical Analysis/Report Preparation																
Phase II																
Preliminary Plan Preparation																
Final Plan Preparation																
Construction Phase Design Support/Site Visits																

September 15, 2016



TESTING SERVICE CORPORATION

Corporate Office

360 South Main Place, Carol Stream, IL 60188-2404
630.462.2600 • Fax 630.653.2988

Gurnee Office

1350 TriState Parkway, Suite 122, Gurnee, IL 60031
847.249.6040 • Fax 847.249.6042

Mr. Douglas Tate
AMEC Earth & Environmental, Inc.
3800 Ezell Road Suite 100
Nashville, TN 37211

RE: P.N. 57,517
Geotechnical Exploration
Grass Lake Road Retaining Wall
Grass Lake Road at Gages Lake
Gages Lake, IL

Dear Mr. Tate:

Testing Service Corporation (TSC) is pleased to submit this proposal to provide Geotechnical Drilling and Laboratory Testing Services for the captioned project. Our proposal responds to your email and phone conversation on September 8, 2016.

Project Description:

We understand that the project will consist of drilling and sampling for six (6) soil borings, each extending to a depth of 50 feet. A representative of Amec Earth & Environmental, Inc. will be on site during drilling operations to log the borings and seal split spoon samples. TSC's representatives will provide caps for Shelby tube samples. A total of 300 lineal feet of drilling and sampling is proposed.

At the time we prepared this proposal, site accessibility information was not available. For the purposes of this proposal, we have assumed that the site is accessible to conventional drilling equipment. Our proposal does not include a provision for any tree or brush clearing that may be necessary to access the site.

TSC will utilize personnel trained in layout procedures to stake the borings in the field. Utility clearance for the borings will be obtained by contacting JULIE (Joint Utility Locating Information for Excavators); secondary and private underground utility lines will have to be marked by the property owner or their agents; a private locator can be hired (at an added cost) if necessary.

Soil samples will primarily be obtained by split-spoon methods, with thin-walled tubes to also be taken as is outlined in your request for proposal. Sampling will be performed at 5-foot intervals to the end of boring depths. Groundwater observations will also be made during and following completion of drilling operations. It is understood that representatives of AMEC Earth & Environmental, Inc. will be logging borings and sealing split-spoon samples to be transported to AMEC Earth & Environmental, Inc. facilities.

Laboratory Testing:

It is understood that after observing the soil samples, selected samples will be returned to Testing Service Corporation's soils lab for testing. It is understood that moisture content, Atterberg limits determinations, grain size analyses, triaxial tests, unconfined compressive strength tests, and consolidation tests are required. Please see the attached Cost Estimate for an outline of the laboratory

Providing a Full Range of Geotechnical Engineering, Environmental Services, and Construction Materials Engineering & Testing

schedule for the project. Additional testing may also be added to the scope at an additional cost, with your approval.

Report of Data Obtained:

Upon completion of sampling and testing, you will receive a report summarizing laboratory test data including any related graphs and charts.

Fees and Scope:

To provide the Drilling and Laboratory Services outlined above, TSC is proposing a not-to-exceed budget of Sixteen Thousand Six Hundred Forty Dollars (\$16,640.00). This fee is based on the understanding that: the boring locations are accessible to a conventional truck or All-Terrain Vehicle (ATV) mounted drill; none of the borings will be located in standing water; in wooded or landscaped areas or on steeply sloping ground; and that the work can be performed during standard business hours. Our fee is further subject to this proposal being accepted by you on or before September 30, 2016.

Should the study reveal unexpected subsurface conditions requiring a change in scope, you will be contacted before we proceed with further work. Extra drilling and sampling, including related laboratory testing and engineering services, will be invoiced at \$40.50 per lineal foot. An additional charge of \$600.00 will apply should it become necessary to remobilize the drill and crew to perform additional work authorized by you.

The fees, hourly rates and other charges for field services furnished under this proposal are based on TSC's current contract with the International Union of Operating Engineers, Local 150. These rates are not necessarily equal to the rates required under the Illinois Prevailing Wage Act (IPWA). If your project is funded in part or in total by state or local government funding sources, it may be subject to IPWA requirements. If you authorize us to proceed with the work outlined in this proposal, we will proceed based on your assurance that your project is not subject to the IPWA. If this project is subject to IPWA, contact us so we can revise this proposal to bring it into compliance with IPWA requirements.

TSC's investigation does not include services required to evaluate the likelihood of the site being contaminated by hazardous materials or other pollutants. Analytical testing which would be required in connection with IEPA Form LPC-663, Uncontaminated Soil Certification is also not included. Should an environmental and/or analytical testing be desired, please contact the undersigned for additional details and/or associated cost.

Please note that our quoted fee does not include geotechnical recommendations, plan review, excavation, fill, earthwork, footing or foundation observations during construction phases of the project. The project budget should include provision for these services. Consultation, preconstruction meetings or other professional services subsequent to delivery of TSC's report are additional services that will be covered by separate invoice.

The drilling and laboratory services being performed are subject to TSC's attached General Conditions. Unless stated otherwise, TSC fees include all state and federal taxes and permits that may be required; however, they do not include any license, permits or bond fees that local governments may impose. The local fees, if any, will be added to the invoice. Unless we receive written instructions to the contrary, invoices will be sent to:

Mr. Douglas Tate
AMEC Earth & Environmental, Inc.
3800 Ezell Road Suite 100
Nashville, TN 37211
Tel: (615) 333-0630
Fax: (615) 781-0655
email: Douglas.Tate@amecfw.com

If this proposal meets with your approval, please indicate your acceptance by signing one copy and returning it to our Gurnee, Illinois office. It would be helpful if you would also complete the attached project data form indicating who is to receive copies of TSC's report and other project data.

Your consideration of our proposal is appreciated. We look forward to being of service to you on this project.

Respectfully Submitted,

TESTING SERVICE CORPORATION

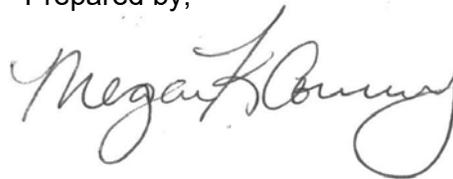


Scott R. Nelson
Vice President

SRN:MKC:KAS

Enc: General Conditions
Project Data Sheet

Prepared by,



Megan K. Conway, P.E.
Staff Engineer

Approved and accepted for _____ by:

(NAME)

(TITLE)

(DATE)

Cost Estimate

TSC PN 57,517
 Amec Foster Wheeler
 9/15/2016



Project Quantities		<i>Number of Borings</i>	<i>Depth</i>	<i>Total Feet</i>
Drill Rig		6	50	300
TOTALS:		6		300

	Unit	Quantity	Unit Price	Estimated Cost
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MOBILIZATION & DRILLING:
 Consists of transportation of equipment and 2 Man Crew @ 8hrs per day

Mobilization & Drilling	Daily	3	\$3,000.00	\$9,000.00
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MOBILIZATION & DRILLING:
 Consists of transportation of equipment and 2 Man Crew @ 10hrs per day

Mobilization & Drilling	Daily	0	\$3,300.00	\$0.00
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MOBILIZATION & DRILLING:
 Consists of transportation of equipment and 2 Man Crew @ 12hrs per day

Mobilization & Drilling	Daily	0	\$3,600.00	\$0.00
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Standard Drilling
Includes sampling at 2.5 foot intervals down to 15 feet and at 5 foot intervals to depth of boring.

Shelby Tubes	Each	30	\$15.00	\$450.00
Normal Drilling 0' - 25'	Feet	150		Included
Normal Drilling 26' - 50'	Feet	150		Included
DRILLING SUB-TOTAL:				\$9,450.00

LABORATORY TESTING OF SOIL SAMPLES:
 Consists of standard soil testing based upon the nature of the exploration to include but not limited to the following:

Visual Soil Classification ASTM D-2488	Per Test	0	\$4.00	\$0.00
Unit Weight Determinations for Cohesive Samples	Per Test	10	\$7.00	\$70.00
Moisture Content Determination ASTM D-2216	Per Test	45	\$7.00	\$315.00
Unconfined Compressive Strength Qu ASTM D-2166	Per Test	10	\$14.00	\$140.00
Combined Grain Size Analysis (Hydrometer & Sieve) ASTM D-422	Per Test	10	\$130.00	\$1,300.00
Atterberg Limits Determination ASTM D-4318	Per Test	10	\$100.00	\$1,000.00
One Dimensioned Consolidation (Single Load-Unload Cycle to 16 tsf) ASTM D-2435	Per Test	2	\$600.00	\$1,200.00
Sieve Analysis with #200 Wash	Per Test	0	\$90.00	\$0.00
Organic Content Determination ASTM D-2974	Per Test	0	\$45.00	\$0.00
Triaxial Compression - Consolidated, Undrained ASTM - D-4767	Per Point	6	\$440.00	\$2,640.00
LABORATORY TESTING SUB-TOTAL:				\$6,665.00

Engineering & Project Management Fees

Project Management - includes set-up job, obtaining utility clearance (J.U.L.I.E or Digger), assembly of reports, boring layout, elevation and site visit	Hour	4	\$130.00	\$520.00
ENGINEERING & MANAGEMENT:				\$520.00

Total:			\$16,635.00
Recommended Budget:			\$16,640.00



TESTING SERVICE CORPORATION

1. PARTIES AND SCOPE OF WORK: If Client is ordering the services on behalf of another, Client represents and warrants that Client is the duly authorized agent of said party for the purpose of ordering and directing said services, and in such case the term "Client" shall also include the principal for whom the services are being performed. Prices quoted and charged by TSC for its services are predicated on the conditions and the allocations of risks and obligations expressed in these General Conditions. Unless otherwise stated in writing, Client assumes sole responsibility for determining whether the quantity and the nature of the services ordered by Client are adequate and sufficient for Client's intended purpose. Unless otherwise expressly assumed in writing, TSC's services are provided exclusively for Client. TSC shall have no duty or obligation other than those duties and obligations expressly set forth in this Agreement. TSC shall have no duty to any third party. Client shall communicate these General Conditions to each and every party to whom the Client transmits any report prepared by TSC. Ordering services from TSC shall constitute acceptance of TSC's proposal and these General Conditions.

2. SCHEDULING OF SERVICES: The services set forth in this Agreement will be accomplished in a timely and workmanlike manner. If TSC is required to delay any part of its services to accommodate the requests or requirements of Client, regulatory agencies, or third parties, or due to any cause beyond its reasonable control, Client agrees to pay such additional charges, if any, as may be applicable.

3. ACCESS TO SITE: TSC shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as a result of its services or the use of its equipment; however, TSC has not included in its fee the cost of restoration of damage which may occur. If Client desires or requires TSC to restore the site to its former condition, TSC will, upon written request, perform such additional work as is necessary to do so and Client agrees to pay to TSC the cost thereof plus TSC's normal markup for overhead and profit.

4. CLIENT'S DUTY TO NOTIFY ENGINEER: Client represents and warrants that Client has advised TSC of any known or suspected hazardous materials, utility lines and underground structures at any site at which TSC is to perform services under this Agreement. Unless otherwise agreed in writing, TSC's responsibility with respect to underground utility locations is to contact the Illinois Joint Utility Locating Information for Excavators for the location of public, but not private, utilities.

5. DISCOVERY OF POLLUTANTS: TSC's services shall not include investigation for hazardous materials as defined by the Resource Conservation Recovery Act, 42 U.S.C. § 6901, et. seq., as amended ("RCRA") or by any state or Federal statute or regulation. In the event that hazardous materials are discovered and identified by TSC, TSC's sole duty shall be to notify Client.

6. MONITORING: If this Agreement includes testing construction materials or observing any aspect of construction of improvements, Client's construction personnel will verify that the pad is properly located and sized to meet Client's projected building loads. Client shall cause all tests and inspections of the site, materials and work to be timely and properly performed in accordance with the plans, specifications, contract documents, and TSC's recommendations. No claims for loss, damage or injury shall be brought against TSC unless all tests and inspections have been so performed and unless TSC's recommendations have been followed.

TSC's services shall not include determining or implementing the means, methods, techniques or procedures of work done by the contractor(s) being monitored or whose work is being tested. TSC's services shall not include the authority to accept or reject work or to in any manner supervise the work of any contractor. TSC's services or failure to

perform same shall not in any way operate or excuse any contractor from the performance of its work in accordance with its contract. "Contractor" as used herein shall include subcontractors, suppliers, architects, engineers and construction managers.

Information obtained from borings, observations and analyses of sample materials shall be reported in formats considered appropriate by TSC unless directed otherwise by Client. Such information is considered evidence, but any inference or conclusion based thereon is, necessarily, an opinion also based on engineering judgment and shall not be construed as a representation of fact. Subsurface conditions may not be uniform throughout an entire site and ground water levels may fluctuate due to climatic and other variations. Construction materials may vary from the samples taken. Unless otherwise agreed in writing, the procedures employed by TSC are not designed to detect intentional concealment or misrepresentation of facts by others.

7. DOCUMENTS AND SAMPLES: Client is granted an exclusive license to use findings and reports prepared and issued by TSC and any sub-consultants pursuant to this Agreement for the purpose set forth in TSC's proposal provided that TSC has received payment in full for its services. TSC and, if applicable, its sub-consultant, retain all copyright and ownership interests in the reports, boring logs, maps, field data, field notes, laboratory test data and similar documents, and the ownership and freedom to use all data generated by it for any purpose. Unless otherwise agreed in writing, test specimens or samples will be disposed immediately upon completion of the test. All drilling samples or specimens will be disposed sixty (60) days after submission of TSC's report.

8. TERMINATION: TSC's obligation to provide services may be terminated by either party upon (7) seven days prior written notice. In the event of termination of TSC's services, TSC shall be compensated by Client for all services performed up to and including the termination date, including reimbursable expenses. The terms and conditions of these General Conditions shall survive the termination of TSC's obligation to provide services.

9. PAYMENT: Client shall be invoiced periodically for services performed. Client agrees to pay each invoice within thirty (30) days of its receipt. Client further agrees to pay interest on all amounts invoiced and not paid or objected to in writing for valid cause within sixty (60) days at the rate of twelve (12%) per annum (or the maximum interest rate permitted by applicable law, whichever is the lesser) until paid and TSC's costs of collection of such accounts, including court costs and reasonable attorney's fees.

10. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with these General Conditions and with generally accepted principles and practices. In performing its professional services, TSC will use that degree of care and skill ordinarily exercised under similar circumstances by members of its profession. In performing physical work in pursuit of its professional services, TSC will use that degree of care and skill ordinarily used under similar circumstances. This warranty is in lieu of all other warranties or representations, either express or implied. Statements made in TSC reports are opinions based upon engineering judgment and are not to be construed as representations of fact.

Should TSC or any of its employees be found to have been negligent in performing professional services or to have made and breached any express or implied warranty, representation or contract, Client, all parties claiming through Client and all parties claiming to have in any way relied upon TSC's services or work agree that the maximum aggregate amount of damages for which TSC, its officers, employees and agents shall be liable is limited to \$50,000 or the total amount of the fee paid to TSC for its services performed with respect to the project, whichever amount is greater.

GENERAL CONDITIONS

Geotechnical and Construction Services

In the event Client is unwilling or unable to limit the damages for which TSC may be liable in accordance with the provisions set forth in the preceding paragraph, upon written request of Client received within five days of Client's acceptance of TSC's proposal together with payment of an additional fee in the amount of 5% of TSC's estimated cost for its services (to be adjusted to 5% of the amount actually billed by TSC for its services on the project at time of completion), the limit on damages shall be increased to \$500,000 or the amount of TSC's fee, whichever is the greater. This charge is not to be construed as being a charge for insurance of any type, but is increased consideration for the exposure to an award of greater damages.

11. INDEMNITY: Subject to the provisions set forth herein, TSC and Client hereby agree to indemnify and hold harmless each other and their respective shareholders, directors, officers, partners, employees, agents, subsidiaries and division (and each of their heirs, successors, and assigns) from any and all claims, demands, liabilities, suits, causes of action, judgments, costs and expenses, including reasonable attorneys' fees, arising, or allegedly arising, from personal injury, including death, property damage, including loss of use thereof, due in any manner to the negligence of either of them or their agents or employees or independent contractors. In the event both TSC and Client are found to be negligent or at fault, then any liability shall be apportioned between them pursuant to their pro rata share of negligence or fault. TSC and Client further agree that their liability to any third party shall, to the extent permitted by law, be several and not joint. The liability of TSC under this provision shall not exceed the policy limits of insurance carried by TSC. Neither TSC nor Client shall be bound under this indemnity agreement to liability determined in a proceeding in which it did not participate represented by its own independent counsel. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement, but may be modified to the extent of any waiver of subrogation agreed to by TSC and paid for by Client.

12. SUBPOENAS: TSC's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay TSC pursuant to TSC's then current fee schedule for any TSC employee(s) subpoenaed by any party as an occurrence witness as a result of TSC's services.

13. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement or its performance, (ii) wherein TSC waives any rights to a mechanics lien or surety bond claim; (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party or (iv) that requires TSC to indemnify any party beyond its own negligence. These General Conditions are notice, where required, that TSC shall file a lien whenever necessary to collect past due amounts. This Agreement contains the entire understanding between the parties. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, Client shall not add any conditions or impose conditions which are in conflict with those contained herein, and no such additional or conflicting terms shall be binding upon TSC. The unenforceability or invalidity of any provision or provisions shall not render any other provision or provisions unenforceable or invalid. This Agreement shall be construed and enforced in accordance with the laws of the State of Illinois. In the event of a dispute arising out of or relating to the performance of this Agreement, the breach thereof or TSC's services, the parties agree to try in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent to filing any demand for arbitration, or any petition or complaint with any court. Paragraph headings are for convenience only and shall not be construed as limiting the meaning of the provisions contained in these General Conditions.



TESTING SERVICE CORPORATION

Project Data Sheet

General Information:

Project Name: _____

Project Address: _____

City / State / Zip: _____

Project Manager: _____

E-Mail: _____

Telephone: _____

Fax: _____

Site Contact: _____

E-Mail: _____

Telephone: _____

Fax: _____

Send Invoice To:

Purchase Order Number: _____

Attention: _____

Company: _____

Address: _____

City / State / Zip: _____

E-Mail: _____

Telephone: _____

Fax: _____

Important Notes:

Completed By:

Signature: _____

Name: _____

Date: _____

Distribute Reports as Follows:

Name: _____

Company: _____

Address: _____

City / State / Zip: _____

E-Mail: _____

Telephone: _____

Fax: _____

Name: _____

Company: _____

Address: _____

City / State / Zip: _____

E-Mail: _____

Telephone: _____

Fax: _____

Name: _____

Company: _____

Address: _____

City / State / Zip: _____

E-Mail: _____

Telephone: _____

Fax: _____

Name: _____

Company: _____

Address: _____

City / State / Zip: _____

E-Mail: _____

Telephone: _____

Fax: _____