

Alyson A. Dyer
Attorney
City of Knoxville

Contract No. **C-19-0284**

CONSULTANT AGREEMENT

This Agreement by and between the **City of Knoxville** (“City”), a municipal corporation organized and existing under the laws of the State of Tennessee, 400 Main Avenue, P.O. Box 1631, Knoxville, Tennessee 37901, and **Quantum Environmental & Engineering Services, LLC**, 126 Dante Road, Knoxville, Tennessee, 37918 (“Consultant” or “QE2”).

WHEREAS, the City of Knoxville desires to design and construct a new Public Safety Complex for the City’s Police and Fire Departments on property generally located at 900 East Oak Hill Avenue, Knoxville, Tennessee, which is the site of existing low-rise and mid-rise buildings where some of the existing structures will be demolished and others will be renovated for use by the aforementioned City Departments (hereinafter referred to as the “Project”); and

WHEREAS, the City of Knoxville, after entering into Agreement C-19-0112, is working with Volkert, Inc. as its Owner’s Representative (hereinafter referred to as **Volkert**) to manage the planning, design, bidding and construction process of the Project; and

WHEREAS, the City of Knoxville has also contracted with McCarty Holsaple McCarty, Inc. (hereinafter referred to as “McCarty”) for the Architectural and Engineering design services for the Project (Contract No. C-19-0283); and

WHEREAS, the City of Knoxville desires assistance from an environmental and geotechnical consultant to provide hazardous material testing, geotechnical exploration

services and construction materials testing services for the Project in order to identify potential environmental hazards requiring abatement or remediation, provide a geotechnical report on subsurface geotechnical conditions with recommendations for design and perform inspections and tests on construction materials in the field and lab with reports containing results and identifying deviations found during inspections and testing; and

WHEREAS, six firms submitted statements of qualifications, and the selection committee, which consisted of representatives from the Engineering Department and Purchasing Department of the City of Knoxville determined that **Quantum Environmental & Engineering Services, LLC** best met the evaluation criteria and had the necessary experience and qualifications for this Agreement; and

WHEREAS, the City of Knoxville desires to enter into an agreement with **Quantum Environmental & Engineering Services, LLC** to provide environmental consultation services and geotechnical services to the City, in conjunction with the services that Volkert and McCarty will be providing the City so as to ensure that the designs that McCarty prepares for the Safety Complex Project, governed by Contract No. C-19-0283, adequately take into consideration any environmental concerns on the site; to serve as a liaison between the City and Volkert and the Tennessee Department of Environment and Conservation (“TDEC”) during the Project design, demolition and construction in order to ensure environmental and permit condition compliance throughout the course of the Project; and to provide remedial observation services and construction observation services on the site as required.

NOW, THEREFORE, the City of Knoxville and **Quantum Environmental & Engineering Services, LLC** for the mutual promises and considerations herein agree as follows:

**ARTICLE 1.
STATEMENT OF SERVICES**

Quantum Environmental & Engineering Services, LLC shall furnish professional environmental consulting services in accordance with the Contract Documents to the City for the new Public Safety Complex for the City's Police and Fire Departments, Municipal Court and Pension Board. These environmental consulting services include, but are not limited to, a Phase I Environmental Site Assessment (hereinafter referred to as "Phase I ESA"), hazardous materials surveys, hazardous materials abatement design and oversight, geotechnical exploration and construction material testing services, and coordination between the City of Knoxville, Volkert, McCarty and regulatory entities. Quantum Environmental & Engineering Services, LLC ("QE2") will perform and complete all services required by the Contract Documents in strict compliance with professional standards and the terms of this Agreement.

During the hazardous materials surveys, QE2 shall provide identification of Asbestos-Containing Materials (hereinafter referred to as "ACM") and any other hazardous materials requiring abatement and remediation by appropriate governing authorities prior to demolition, renovation and use by the City for its intended purpose. QE2 shall provide abatement and remediation design for the removal and proper disposal of hazardous materials. Prior to and during demolition of the existing buildings and renovations, QE2 will provide oversight to make sure all hazardous materials are handled and disposed of in accordance with state and federal law. QE2 shall perform subsurface

geotechnical exploration in locations of new construction and provide a geotechnical report outlining subsurface conditions with recommendations for design and construction based on the results. QE2 shall perform construction material testing onsite and in the laboratory with reports detailing test results and identifying deviations with recommendations for corrective action.

ARTICLE 2.

2.1 Contract Documents. The executed Contract Documents will consist of the following:

- (A) This Agreement;
- (B) The City of Knoxville's Request for Qualifications Dated February 11, 2019, which is attached to this Agreement as Exhibit A;
- (C) QE2's Statement of Qualifications dated March 1, 2019, which is attached to this Agreement as Exhibit B;
- (D) QE2's Scope, Fee Proposal and Rate Schedule dated April 18, 2019, which is attached to this Agreement as Exhibit C.
- (E) Schedule for Services and Deliverables, which is attached to this Agreement as Exhibit D.

All contract documents are incorporated herein by reference and made a part of this Agreement as if they were fully set out verbatim. To the extent there is a conflict between the terms of any of the documents that constitute this Agreement, the terms that provide the greater benefit to the City and/or impose the greater obligation on QE2 shall control.

2.2 Term. QE2 acknowledges that time is of the essence and that the services, as described herein, will commence as soon as practical upon receiving notice that this Agreement has been executed. A schedule for completion of the services and deliverables is described in Exhibit D. QE2 shall perform the services with due and

reasonable diligence and fully complete the services in accordance with the schedule set forth in Exhibit D to this Agreement.

2.3 Consideration. For the satisfactory performance of the Project, in accordance with the provisions of this Agreement, the City will pay QE2 a total contract price not to exceed TWO HUNDRED FORTY-FIVE THOUSAND NINE HUNDRED FIVE AND 00/100 DOLLARS (\$245,905.00) unless modified by a Contract Change Order. Such contract price is comprised of the following, as more fully set forth in Exhibit C:

- A. Phase 1: Renovations and Demolition at Professional Building, Central Annex, and Women's Pavilion
- i. Haz. Mat. Survey, Report, Design & Oversight: \$53,218.00
 - ii. Geotechnical Exploration New Construction: \$ 5,350.00
 - iii. Construction Materials Testing: \$79,288.00

Total Cost for Phase 1: \$137,856.00

- B. Phase 2: Renovations and Demolition at the North Site (includes historic building, Main North Wing, McCauley Wing, Boiler Plant)
- i. Haz. Mat. Survey, Report, Design & Oversight: \$108,049.00

Total Cost for Phase 2: \$108,049.00

Total Contract Price (Not to Exceed): \$245,905.00

2.4 Invoices. QE2 shall submit monthly invoices for the services performed for the City under this Agreement. The invoices shall be in a form approved by the City, shall indicate the time period during which the services were performed, and shall be signed to certify their accuracy. Each invoice will contain: (1) the phase of the Agreement under which the work occurred, (2) the dates of all expenses, (3) the hours worked and (4) the number of individuals on site. The City will pay QE2 for the work satisfactorily performed within thirty (30) days of the receipt of an undisputed invoice. Payment for services rendered does not indicate the City's acceptance of such services as being fully

in accord with all the provisions of this Agreement. The City shall advise QE2 in writing if any portion is disputed and will not withhold payment on undisputed portions of any invoice.

2.5 Changes In Contract Price. The contract price may be changed only by a Change Order. The value of any work covered by a Change Order of any claim for increase or decrease in the contract price shall be determined by the actual cost for labor, direct overhead, materials, supplies, equipment, profit, and other services necessary to complete the work.

2.6 Changes In Scope of Work. The City may at any time, if the need arises, order changes within the scope of the work without invalidating the Agreement. If such changes increase or decrease the amount due under the contract documents, or in the time required for performance of the work, an equitable adjustment shall be authorized by Change Order. All Change Orders must be approved by the City and QE2.

2.7 Termination. The City may terminate this Agreement at any time, with or without cause, by written notice of termination to QE2. If the City terminates this Agreement, and such termination is not a result of a default by QE2, QE2 shall be entitled to receive as its sole and exclusive remedy the following amounts from the City, and the City shall have no further or other obligations to QE2: (a) The amount due to QE2 for work executed through the date of termination, not including any future fees, profits, or other compensation or payments which QE2 would have been entitled to receive if the Project had not been terminated; and (b) the direct out-of-pocket costs incurred by QE2 for demobilization of the Project following receipt of the notice of termination, not to exceed the amount reasonably and actually required to demobilize the Project.

2.8 Unanticipated Conditions. City of Knoxville and Volkert have provided QE2 with access to the existing reports on the property involved in this Project and conducted a walkthrough of the facility with QE2. QE2 has reviewed these documents and is aware of the information contained in said documents. Should QE2 encounter conditions which were not reasonably anticipated or which increase the risk or cost, or both, involved in QE2's performance of its services, upon written notice to the City, QE2 may offer one of the following options to the City: (1) to suspend the performance of its services and submit a change order request to be signed by the City prior to proceeding, or (2) discontinue the performance of its services and terminate the attached Agreement. Within twenty days of being notified by QE2 of an "unanticipated condition," the City will determine whether to pay the cost of the change order or terminate the Agreement. If the unanticipated condition presents an immediate or potential threat to health, safety, the environment, or QE2 equipment or personnel, QE2 will immediately inform Volkert and the City, so that Volkert and the City can notify the appropriate governmental entities.

ARTICLE 3. INSURANCE

QE2 shall at its sole expense obtain and maintain in full force and effect for the duration of the Agreement and any extension hereof at least the following types and amounts of insurance for claims which may arise from or in connection with this Agreement. All insurance must be underwritten by insurers with an A.M. Best rating of A-VIII or better.

1. ***Commercial General and Umbrella Liability Insurance***; occurrence version commercial general liability insurance, and if necessary umbrella liability insurance, with a limit of not less than \$2,000,000 each occurrence for bodily injury, personal injury, property damage, and products and completed operations.

If such insurance contains a general aggregate limit, it shall apply separately to the work/location in this Agreement or be no less than \$3,000,000.

Such insurance shall:

- a. Contain or be endorsed to contain a provision that includes Metro Knoxville HMA, LLC, the City, its officials, officers, employees, and volunteers as additional insureds with respect to liability arising out of work or operations performed by or on behalf of QE2 including materials, parts, or equipment furnished in connection with such work or operations. The coverage shall contain no special limitations on the scope of its protection afforded to the above-listed insureds. Proof of additional insured status up to and including copies of endorsements and/or policy wording will be required.
 - b. For any claims related to this project, QE2's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance programs covering the City, its officials, officers, employees, and volunteers shall be excess of QE2's insurance and shall not contribute with it.
 - c. At the sole discretion of the City, dedicated limits of liability for this specific project may be required.
2. ***Automobile Liability Insurance***; including vehicles owned, hired, and non-owned, with a combined single limit of not less than \$1,000,000 each accident. Such insurance shall include coverage for loading and unloading hazards. Insurance shall contain or be endorsed to contain a provision that includes the City, its officials, officers, employees, and volunteers as additional insureds with respect to liability arising out of automobiles owned, leased, hired, or borrowed by or on behalf of QE2.
 3. ***Workers' Compensation Insurance***. QE2 shall maintain workers' compensation insurance with statutory limits as required by the State of Tennessee or other applicable laws and employers' liability insurance with limits of not less than \$500,000. QE2 shall require each of its subcontractors to provide Workers' Compensation for all of the latter's employees to be engaged in such work unless such employees are covered by QE2's workers' compensation insurance coverage.
 4. ***Professional Liability Insurance (or a "Consultant's Environmental Liability Policy"*** combining coverage for professional liability and for Contractor's pollution liability); with respect to all work performed by or on behalf of QE2 (or, with respect to insurance maintained by a subcontractor, by or on behalf of such subcontractor) under or in connection with this Agreement or any Task Release, covering claims from any act, error, or omission committed in connection with

QE2's (or subcontractors, as the case may be) performance of any such work. Such policy shall not contain any exclusions or limitations regarding the release of asbestos or other pollutants. The limits of liability shall not be less than Two Million Dollars (\$2,000,000) per claim or in the aggregate. If coverage is written on a claims-made basis, coverage with respect to work performed in connection with a given Task Release shall be maintained for a period of three (3) years after the date of final payment with respect to such Task Release and shall provide for an extended reporting period of not less than twelve (12) months.

If the coverage is written on a claims-made form:

- a. The "Retro Date" must be shown and must be before the date of the contract or the beginning of contract work.
- b. Insurance must be maintained and evidence of insurance must be provided for at least three (3) years after completion of the contract work and acceptance by the City.
- c. If coverage is cancelled or non-renewed and not replaced with another claims-made policy form with a "Retro Date" prior to the contract effective date, QE2 must purchase "extended reporting" coverage for a minimum of three (3) years after completion of contract work.
- d. A copy of the claims reporting requirements must be submitted to the City for review.

5. ***Other Insurance Requirements.*** QE2 shall:

- a. Prior to commencement of services, furnish the City with original certificates and amendatory endorsements effecting coverage required by this section and provide that such insurance shall not be cancelled, allowed to expire, or be materially reduced in coverage except on 30 days' prior written notice to the City Attorney of Knoxville, P.O. Box 1631, Knoxville, Tennessee 37901. Proof of policy provisions regarding notice of cancellation will be required.
- b. Upon the City's request, provide copies of endorsements and policies in lieu of or in addition to certificates of insurance. Copies of policies will only be requested when contracts are deemed to be extremely or uniquely hazardous, include a dollar amount that is significant to the overall budget of the City or a City Department, or the coverage(s) may not follow standard insurance forms. A policy will only be requested after the City's Risk Manager has reviewed the contract and proof of coverage has been provided. Should the certificate of insurance refer to specific coverage wording or endorsement(s), proof of such policy wording or endorsement(s) will be required.

- c. Replace certificates, policies, and endorsements for any such insurance expiring prior to completion of services.
- d. Maintain such insurance from the time services commence until services are completed. Failure to maintain or renew coverage or to provide evidence of renewal may be treated by the City as a material breach of contract.
- e. If QE2 cannot procure insurance through an insurer having an A.M. Best rating of A-VIII, QE2 may, in the alternative, place such insurance with insurer licensed to do business in Tennessee and having A.M. Best Company ratings of no less than A. Modification of this standard may be considered upon appeal to the City Law Director.
- f. Require all subcontractors to maintain during the term of the Agreement Commercial General Liability insurance, Business Automobile Liability insurance, and Workers' Compensation/Employer's Liability insurance (unless subcontractor's employees are covered by QE2's insurance) in the same manner as specified for QE2. QE2 shall furnish subcontractors' certificates of insurance to the City without expense immediately upon request.

Large Deductibles; Self-Insured Retentions. Any deductibles and/or self-insured retentions greater than \$50,000 must be disclosed to and approved by the City of Knoxville prior to the commencement of services. Use of large deductibles and/or self-insured retentions will require proof of financial ability as determined by the City.

Waiver of Subrogation Required. The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, and employees for losses arising from work performed by QE2 for the City. Proof of waiver of subrogation up to and including copies of endorsements and/or policy wording will be required.

Occurrence Basis Requirement. All general liability policies must be written on an occurrence basis unless the Risk Manager determines that a claims made basis is reasonable in the specific circumstance. Use of policies written on a claims made basis must be approved by the Risk Manager and retroactive dates and/or continuation dates must be provided to the City prior to commencement of any work performed. Professional Liability and Environmental Liability (Pollution Coverage) are most commonly written on a claims made basis and are generally acceptable in that form.

ARTICLE 4.
HOLD HARMLESS AND INDEMNIFICATION

QE2 shall defend, indemnify and hold harmless the City, its officers, employees and agents from and against any and all lawsuits, claims, liabilities, damages, losses, and expenses (including, but not limited to, court costs, reasonable attorney fees, and costs of claim processing, investigation, and litigation) for losses caused in whole or in part by the negligent acts, errors, or omissions of QE2 in performance of this Agreement or from QE2's failure to perform this Agreement using a due and reasonable standard of professional care and skill ("Indemnified Claim"), and except where such injury, damage, or loss was caused by the sole negligence of the City, its agents or employees. The amount and type of insurance coverage requirements set forth in this Agreement will in no way be construed as limiting the scope of the indemnity in this section.

QE2 shall assume and take over the defense of the City in any such claim, demand, suit, or cause of action involving an Indemnified Claim upon written notice and demand for same by the City. QE2 will have the right to defend the City with counsel of its choice that is satisfactory to the City, and the City will provide reasonable cooperation in the defense as QE2 may request. QE2 will not consent to the entry of any judgment or enter into any settlement with respect to an Indemnified Claim without the prior written consent of the City, such consent not to be unreasonably withheld or delayed. The City shall have the right to participate in the defense against an Indemnified Claim with counsel of its choice at its own expense.

QE2 shall save, indemnify and hold City harmless and pay judgments that shall be rendered in any such actions, suits, claims or demands against City with respect to any Indemnified Claim.

The indemnification and hold harmless provisions of this Agreement shall survive termination of the Agreement.

**ARTICLE 5.
NON-DISCRIMINATION**

QE2:

- (A) will not discriminate against any employee or applicant for employment because of race, age, color, religion, national origin, sex or disability;
- (B) will take affirmative action to insure that applicants are employed, and that employees are treated during employment, without regard to their race, age, color, religion, national origin, sex or disability;
- (C) will, in all solicitations or advertisements for employees placed by or on behalf of it, state that all qualified applicants will receive consideration for employment without regard to race, age, color, religion, national origin, sex or disability; and
- (D) will include these provisions in every subcontract or sublease let by or for it.

**ARTICLE 6.
ETHICAL STANDARDS**

QE2 hereby takes notice of and warrants that it is not in violation of, or has not participated, and will not participate, in the violation of any of the following ethical standards prescribed by the Knoxville City Code:

(A) Sec. 2-1048. Conflict of Interest.

It shall be unlawful for any employee of the city to participate, directly or indirectly, through decision, approval, disapproval, recommendation, preparation of any part of a purchase request, influencing the content of any specification or purchase standard, rendering advice, investigation, auditing or otherwise, in any proceeding or application, request for ruling or other determination, claim or controversy or other matter pertaining to any contract or subcontract and any solicitation or proposal therefor, where to the employee's knowledge there is a financial interest possessed by:

- (1) The employee or the employee's immediate family;
- (2) A business other than a public agency in which the employee or a member of the employee's immediate family serves as an officer, director, trustee, partner or employee; or
- (3) Any other person or business with whom the employee or a member of the employee's immediate family is negotiating or has an arrangement concerning prospective employment.

(B) Sec. 2-1049. Receipt of Benefits from City Contracts by Councilmembers, Employees and Officers of the City.

It shall be unlawful for any member of council, member of the board of education, officer or employee of the city to have or hold any interest in the profits or emoluments of any contract, job, work or service, either by himself or by another, directly or indirectly. Any such contract for a job, work or service for

the city in which any member of council, member of the board of education, officer or employee has or holds any such interest is void.

(C) Sec. 2-1050. Gratuities and Kickbacks Prohibited.

Gratuities. It is unlawful for any person to offer, give or agree to give to any person, while a city employee, or for any person, while a city employee, to solicit, demand, accept or agree to accept from another person, anything of a pecuniary value for or because of:

- (1) An official action taken, or to be taken, or which could be taken;
- (2) A legal duty performed, or to be performed, or which could be performed;
or
- (3) A legal duty violated, or to be violated, or which could be violated by such person while a city employee.

Anything of nominal value shall be presumed not to constitute a gratuity under this section.

Kickbacks. It is unlawful for any payment, gratuity or benefit to be made by or on behalf of a subcontractor or any person associate therewith as an inducement for the award of a subcontract or order.

(D) Sec. 2-1051. Covenant Relating to Contingent Fees.

- (1) Representation of Contractor. Every person, before being awarded a contract in excess of ten thousand dollars (\$10,000.00) with the city, shall represent that no other person has been retained to solicit or secure the contract with the city upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for bona fide employees or bona fide

established commercial, selling agencies maintained by the person so representing for the purpose of securing business.

(2) Intentional violation unlawful. The intentional violation of the representation specified in subsection (a) of this section is unlawful.

(E) Sec. 2-1052. Restrictions on Employment of Present and Former City Employees.

Contemporaneous employment prohibited. It shall be unlawful for any city employee to become or be, while such employee, an employee of any party contracting with the particular department or agency in which the person is employed.

(F) Remedies for Violations. For violations of the ethical standards outlined in the Knoxville City Code, the City has the following remedies:

- (1) Oral or written warnings or reprimands;
- (2) Cancellation of transactions; and
- (3) Suspension or debarment from being a contractor or subcontractor under city or city-funded contracts.

The value of anything transferred in violation of these ethical standards shall be recoverable by the City from such person. All procedures under this section shall be in accord with due process requirements, included but not limited to a right to notice and hearing prior to imposition of any cancellation, suspension or debarment from being a contractor or subcontractor under a city contract.

**ARTICLE 7.
ADA COMPLIANCE**

QE2 will comply with any and all requirements of the Americans with Disabilities Act, 42 U.S.C. Sec 12101, et seq., ("ADA,") including, but not limited to, the removal of all structural barriers, the accessibility of programs, services and goods, the provision of all auxiliary aids and services, and the modification of policies, practices and procedures. QE2 agrees that the City will not be responsible for any costs or expenses related to compliance with the ADA. QE2 agrees that it will defend, indemnify and hold the City harmless against any and all claims, demands, suits or causes of action which arise out of this Agreement or the use of the property, or an act or an act of omission by QE2, its employees, agents or representatives that violates or claims to violate the ADA.

**ARTICLE 8.
NOTICES**

Any notice required or permitted under this Agreement will be directed to the following representatives or such other address as either party may designate by written notice to the other:

City of Knoxville
Boyce Evans, Purchasing Agent
P.O. Box 1631
Knoxville, TN 37901
(865) 215-2070

QE2
Terence Davis, P.G.
126 Dante Road
Knoxville, TN 37918
(865) 689-1395

Volkert, Inc.:
Jonathan D. Grammer, PE
1616 2nd Avenue South, Suite 150
Birmingham, Alabama 35233

Notices shall be in writing and shall be effective when actually delivered in person, received via facsimile transmission, or private carrier with signature confirmation, or when received in the U.S. mail, certified with return receipt requested, postage pre-paid and addressed to the party as stated above.

ARTICLE 9.
RELATIONSHIP OF THE PARTIES

9.1 Representative of Owner. The Owner has retained Volkert, Inc. to act as the representative of the Owner. Volkert, Inc., however, is an independent contractor of Owner as set forth in the contract between Owner and Volkert, Inc.

9.2 Project Communication. QE2 shall direct all communications to the contractors on the Project, whether written or oral, through Volkert. All communications or correspondence with the City, if not directed through Volkert, shall be copied to Volkert in order to allow Volkert to stay informed of project communications and issues. Nothing herein shall restrict QE2 from communicating directly with the Owner and contractors as QE2 deems appropriate.

9.3 Maintenance of Good Working Relationship. In providing Services, QE2 shall maintain a good working relationship with the City and Volkert. QE2 is an independent contractor of Owner over which neither the Owner nor Volkert retains the right of control over the method and manner by which QE2 performs its duties herein required. QE2 has primary responsibility for construction observation, construction administration and construction contract administration hereunder. Volkert's Construction Phase Services under its Owner's representative Agreement with Owner are secondary to those of QE2.

9.4 Personnel. QE2 will staff the Project with sufficient qualified personnel to adhere to QE2's Standard of Care and to complete its Scope of Services hereunder to the Owner's satisfaction. QE2 will add sufficient qualified staff to the design team to complete the design within the time frame herein allocated.

9.5 Engineering Services.

9.5.1 Full Professional Team. For the performance of the services required by the Agreement QE2 will employ the services of consulting engineers so as to provide a full professional team as dictated by the disciplines of environmental and geotechnical engineering design involved in the Work. The engineering consultants to be employed by QE2 are named below.

Environmental Engineer

Name: George J. Hyfantis, Jr., Ph.D., P.E., CHMM
Quantum Environmental & Engineering Services, LLC
Address: 126 Dante Road, Knoxville, TN 37918
Phone: (865) 689-1395
Email: ghyfantis@QE2LLC.com
TN License #: 14150

Geotechnical Engineer

Name: C. Raymond Tant, P.E.
Shield Engineering, Inc.
Address: 300 Forestal Drive, Knoxville, TN 37918
Phone: (865) 544-5959
Email: rtant@shieldengineering.com
TN License #: 105789

QE2 shall notify the Owner in writing of any intended change in Subconsultants and the Owner shall have the right of approval of any replacement Subconsultant.

9.6 Internet Based Project Management Communication System. QE2 and its engineering Subconsultants shall utilize e-Builder internet-based project management system for all project documentation and contract administration. The system will be administered by Volkert and QE2 and certain engineering Subconsultants shall be required to use the system as the primary mode of project communication. The intent of using the internet-based project management system is to improve project efforts by promoting timely communications. Secondly, use of this system will reduced the number

of paper documents while providing improved record keeping by creation of electronic document files. QE2 and any additional Subconsultants deemed by Volkert requiring access to the system, shall obtain annual user licenses. The licenses shall be renewed on an annual basis through completion of one-year warranty of the Project. At the end of each project design phase, i.e., schematic, design development and construction documents, QE2 shall still provide hard copies of all design documents completed through the various phases of design.

**ARTICLE 10.
DOCUMENTS AND RECORDS**

10.1 Property of the City. The City shall own any and all documents, drawings, specifications, plans, copyrights, working papers, notes, designs, technical data reports, and other materials and data gathered or produced in connection with this Agreement. Upon completion of the services provided by QE2, or earlier termination of the Agreement for any reason, and payment of all funds due, QE2 shall deliver all such materials to the City. QE2 hereby assigns to the City all right, title and interest in and to such materials, although QE2 shall be entitled to retain duplicates or copies of all such materials for its files and reference.

**ARTICLE 11.
MISCELLANEOUS PROVISIONS**

11.1 Independent Contractor. QE2 will render all services as an independent contractor; it will not be considered an employee of the City or Volkert, nor will it be entitled to any benefits, insurance, pension, or workers' compensation as an employee of the City or Volkert. QE2 will be solely and entirely responsible for its acts and for the

acts of it agents, employees, servants and subcontractors done during the performance of this Agreement.

11.2 Licensed Professional. QE2 must be a licensed professional as required by the state of Tennessee, see T.C.A. Sections 62-2-101 et. seq., for any services in this contract requiring such licensure. QE2 must maintain required license(s) during the period of the contract and shall submit evidence of compliance.

11.3 Assignment. QE2 will not assign or transfer any interest in this Agreement without obtaining the prior written approval of the City.

11.4 Subcontracts To The Agreement. QE2 will not enter into a subcontract for any of the services performed under this Agreement without obtaining the prior written approval of the City.

11.5 Written Amendments. This Agreement may be modified only by a written amendment or addendum which has been executed and approved by the appropriate officials shown on the signature page of this Agreement.

11.6 Required Approvals. Neither QE2 nor the City is bound by this Agreement until it is approved by the appropriate officials shown on the signature page of this Agreement.

11.7 Article Captions. The captions appearing in this Agreement are for convenience only and are not a part of this Agreement; they do not in any way limit or amplify the provisions of this Agreement.

11.8 Severability. If any provision of this Agreement is determined to be unenforceable or invalid, such determination will not affect the validity of the other provisions contained in this Agreement. Failure to enforce any provision of this

Agreement does not affect the rights of the parties to enforce such provision in another circumstance, nor does it affect the rights of the parties to enforce any other provision of this Agreement at any time.

11.9 Federal, State and Local Requirements. QE2 is responsible for full compliance with all applicable federal, state, and local laws, rules and regulations.

11.10 Governing Law. This Agreement will be governed and construed in accordance with the laws of the State of Tennessee. Any action for breach of this Agreement or to enforce or nullify any provision of this agreement shall be instituted only in a court of appropriate jurisdiction in Knox County, Tennessee

11.11 No Benefit For Third Parties. The services to be performed by QE2 pursuant to this agreement with the City are intended solely for the benefit of the City, and no benefit is conferred hereby, nor is any contractual relationship established herewith, upon or with any person or entity not a party to this Agreement. No such person or entity shall be entitled to rely on QE2's performance of its services hereunder, and no right to assert a claim against the City or QE2, its officers, employees, agents or contractors shall accrue to QE2 or to any subcontractors, independently retained professional consultant, supplier, fabricator, manufacturer, lender, tenant, insurer, surety or any other third party as a result of this Agreement or the performance or non-performance of QE2's services hereunder.

11.12 Non-Reliance of Parties. Parties explicitly agree that they have **not** relied upon any earlier or outside representations other than what has been included in this Agreement. Furthermore, neither party has been induced to enter into this Agreement by anything other than the specific written terms set forth herein.

11.13 Force Majeure. Neither party shall be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times shall be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term “force majeure” as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

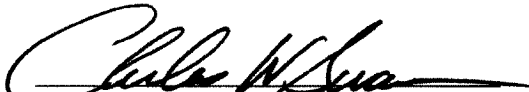
11.14 EEO/AA. The City of Knoxville is an EEO/AA/Title VI/Section 504/ADA/ADEA Employer.

11.15 Entire Agreement. This Agreement, along with the attachments incorporated herein by reference, forms the entire Agreement between the City and QE2. Any prior representations, promises, agreements, oral or otherwise, between the parties, which are not embodied in this writing, will be of no force or effect.

IN WITNESS WHEREOF, the City and QE2 have executed this Agreement in two (2) copies as of the below-written date.

APPROVED AS TO FORM:

CITY OF KNOXVILLE


CHARLES W. SWANSON
LAW DIRECTOR

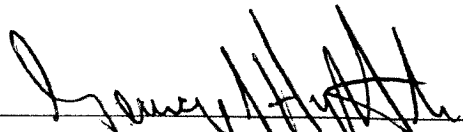
BY: 
MADELINE ROGERO
MAYOR

DATE: 5/31/19

FUNDS CERTIFIED:

**QUANTUM ENVIRONMENTAL
AND ENGINEERING
SERVICES, LLC**


JAMES YORK,
FINANCE DIRECTOR

BY: 
TITLE: PRESIDENT

Required Documents:

Certificate of Insurance: 
Certificate of Professional Liability Insurance: 

Documents to be Attached:

- Exhibit A: The City of Knoxville's Request for Qualifications Dated February 11, 2019
- Exhibit B: QE2's Statement of Qualifications dated March 1, 2019
- Exhibit C: QE2's Scope, Fee Proposal and Rate Schedule dated April 18, 2019
- Exhibit D: Schedule for Services and Deliverables

CITY OF KNOXVILLE

REQUEST FOR QUALIFICATIONS

**NEW PUBLIC SAFETY COMPLEX – HAZARDOUS
MATERIAL SURVEY, GEOTECHNICAL
EXPLORATION AND CONSTRUCTION MATERIALS
TESTING SERVICES**

Qualifications to be Received by 11:00:00 a.m., Eastern Time

March 1, 2019

Submit Qualifications to:

City of Knoxville

Office of Purchasing Division

City/County Building

Room 667-674

400 Main Street

Knoxville, Tennessee 37902



**CITY OF KNOXVILLE
Request for Qualifications**

**NEW PUBLIC SAFETY COMPLEX – HAZARDOUS MATERIAL
SURVEY, GEOTECHNICAL EXPLORATION AND CONSTRUCTION
MATERIALS TESTING SERVICES**

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**City of Knoxville
Request for Qualifications**

**NEW PUBLIC SAFETY COMPLEX – HAZARDOUS MATERIAL
SURVEY, GEOTECHNICAL EXPLORATION AND CONSTRUCTION
MATERIALS TESTING SERVICES**

I. Statement of Intent

The City of Knoxville seeks statements of qualifications from responsible and qualified firms or teams to provide hazardous material survey, geotechnical exploration, and construction materials testing services for a renovation project converting an existing campus of multiple buildings into a New Public Safety Complex. The renovation will consist of building demolition, selective demolition of interior finishes and systems followed by buildout of approximately 190,000 SF of interior spaces. Exterior site improvements, parking, drives, and landscaping along with new HVAC, plumbing, and electrical systems will also be included with the new interior finishes.

II. RFQ Time Line

Availability of RFQFebruary 11, 2019

Deadline for questions to be submitted in writing to the
Assistant Purchasing AgentFebruary 22, 2019

Qualifications Due Date..... March 1, 2019

This timetable is for the information of submitting entities. These dates are subject to change. **However, in no event shall the deadline for submission of qualifications be changed except by written modification from the City of Knoxville Purchasing Division.**

III. Background

The Knoxville Police Department’s current headquarters at the Safety Building on 800 Howard Baker Jr. Avenue, built 50 years ago, is antiquated and insufficient for the technology and space needed for the current KPD operations. In addition, areas of the Safety Building do not meet current fire safety and/or ADA accessibility standards. The space no longer accommodates the entire KPD staff and the KFD Administration staff currently leases space at a separate location. The City of Knoxville desires to renovate an existing site, the former Tennova Physicians Regional Medical Center, to house over 300 employees, vehicles, equipment, the City courtroom, and the City Pension Board. The renovation generates the need for the services required in this solicitation.

IV. General Conditions

4.1 The following data is intended to form the basis for submission of qualifications to provide professional services for the City of Knoxville New Public Safety Complex.

4.2 This material contains general conditions for the procurement process, the scope of service requested; contract requirements; instructions for submissions of qualifications; and submission forms that must be included in the Statement of Qualifications. The RFQ should be read in its entirety before preparing the submission.

4.3 All materials submitted pursuant to this RFQ shall become the property of the City of Knoxville.

4.4 To the extent permitted by law, all documents pertaining to this Request for Qualifications shall be kept confidential until the qualification evaluation is complete and a recommendation submitted to City Council for review. No information about any submission of qualifications shall be released until the process is complete, except to the members of the Evaluation Committee and other appropriate City staff. All information provided shall be considered by the Evaluation Committee in making a recommendation to enter into an agreement with the selected consultant.

4.5 Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the RFQ shall be made **in writing and be in the hands of the Assistant Purchasing Agent by the close of the business day on February 22, 2019.** Questions can be submitted by letter, fax (865-215-2277), or email to powens@knoxvilletn.gov. The City of Knoxville is not responsible for oral interpretations given by any City employee, representative, or others. The issuance of written addenda is the only official method whereby interpretation, clarification, or additional information can be given. If any addenda are issued to this Request for Qualifications, the Purchasing Division will post them to the City's website at www.knoxvilletn.gov/purchasing. Submitting organizations are strongly encouraged to view this website often to see if addenda are posted. Failure of any qualifier to receive such addendum or interpretation shall not relieve such Proposer from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

4.6 The City of Knoxville reserves the right to (a) accept or reject any and/or all submissions of qualifications; (b) to waive irregularities and technicalities; and (c) accept any alternative submission of qualifications presented which in its opinion, would best serve the interests of the City. The City shall be the sole judge of the qualifications, and the resulting negotiated agreement that is in its best interest, and its decision shall be final. The City also reserves the right to make such investigation as it deems necessary to determine the ability of any submitting entity to perform the work or service requested. Information the City deems necessary to make this determination shall be provided by the submitting entity. Such information may include, but is not limited to, current financial statements by an independent CPA, verification of availability of equipment and personnel, and past performance records.

4.7 Included in the Contract Documents is an affidavit that the undersigned has not entered into any collusion with any person in respect to this qualification. The qualifier is required to submit this affidavit with the submission. Also included is the Diversity Business Program contracting packet. Submissions must indicate on the enclosed form whether or not the proposer/qualifier intends to use subcontractors and/or suppliers from one of the defined groups. Proposers/Qualifiers are advised that the City tracks use of such use, but it does not influence or affect evaluation or award.

4.8 Subsequent to the Evaluation Committee's review and the Mayor's recommendation of a firm(s), Knoxville City Council approval may be required before the final contract may be

executed.

4.9 All expenses for making submission of qualifications shall be borne by submitting entity.

4.10 Any submission of qualifications may be withdrawn up until the date and time for opening of the submissions. **Any submission not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of 90 days to the City of Knoxville for the services set forth in the Request for Qualifications until one or more of the submissions have been duly accepted by the City.**

4.11 Prior to submitting their proposals, proposers are to be registered with the Purchasing Division through the City of Knoxville's online Vendor Registration system. Instructions for registering on-line are available at www.knoxvilletn.gov/purchasing. **Submissions from un-registered submitters may be rejected.**

4.12 **NO CONTACT POLICY:** After the posting of this solicitation to the Purchasing Division's website, any contact initiated by any proposer with any City of Knoxville representative concerning this procurement action is strictly prohibited, unless such contact is made with the Purchasing Division representative listed herein or with said representative's authorization. Any unauthorized contact may cause the disqualification of the proposer from this procurement transaction.

4.13 **INCLEMENT WEATHER:** During periods of inclement weather, the Purchasing Division will enact the following procedures with regard to solicitations and weather delays:

- If City offices are closed due to inclement weather on the date that bids/proposals/qualifications/letters of interest are due into the Purchasing Office, all solicitations due that same day will be moved to the next operational business day.
- The City of Knoxville shall not be liable for any commercial carrier's decision regarding deliveries during inclement weather.

V. Scope of Service

The City of Knoxville seeks statements of qualifications from responsible and qualified firms or teams to provide hazardous material survey, geotechnical exploration and construction materials testing services for a renovation project converting an existing campus of multiple buildings into a New Public Safety Complex. The renovation will consist of building demolition, selective demolition of interior finishes and systems followed by buildout of approximately 190,000 SF of interior spaces. Exterior site improvements, parking, drives, and landscaping along with new HVAC, plumbing, and electrical systems will also be included with the new interior finishes.

VI. Contract Requirements

Submitting entities, if selected, must be willing to sign a contract with the City which will include certain provisions, among which are the following:

6.1 Contract Documents. The contract shall consist of (1) the RFQ; (2) the qualifications submitted by the contractor to this RFQ; and (3) the contract. In the event of a discrepancy

between the contract, the RFQ and the submitted qualifications, the terms that provide the greater benefit to the City and/or impose the greater obligation to the contractor will prevail.

6.2 Administration. The contract will be administered by the City of Knoxville Finance Department.

6.3 Invoices. Invoices for services will be submitted to the City in accordance with the contract terms.

6.4 Independent Contractor. The relationship of contractor to the City will be that of independent contractor. The contractor will be solely and entirely responsible for its acts and for the acts of its agents, employees, servants and subcontractors done during the performance of the contract. All services performed by the contractor shall be provided in an independent contractor capacity and not in the capacity of officers, agents, or employees of the City.

6.5 Assignment. The contractor shall not assign or transfer any interest in this contract without prior written consent of the City of Knoxville.

6.6 Indemnification and Hold Harmless. The successful qualifier will be required to sign a contract with the City which contains the following indemnification clause. This indemnification clause will not be altered in any way. Failure to agree with this indemnification clause in the contract may result in the City moving to the next responsible responsive proposer.

Consultant shall defend, indemnify and hold harmless the City, its officers, employees and agents from and against any and all lawsuits, claims, liabilities, damages, losses, and expenses (including, but not limited to, court costs, reasonable attorney fees, and costs of claim processing, investigation, and litigation) to the extent arising out of, relating to, or resulting from the negligent or intentional acts, errors, or omissions of Consultant in performance of this Agreement or from Consultant's failure to perform this Agreement using a due and reasonable standard of professional care and skill ("Indemnified Claim"), and except where such injury, damage, or loss was caused by the sole negligence of the City, its agents or employees. The amount and type of insurance coverage requirements set forth in this Agreement will in no way be construed as limiting the scope of the indemnity in this section.

Consultant shall assume and take over the defense of the City in any such claim, demand, suit, or cause of action involving an Indemnified Claim upon written notice and demand for same by the City. Consultant will have the right to defend the City with counsel of its choice that is satisfactory to the City, and the City will provide reasonable cooperation in the defense as Consultant may request. Consultant will not consent to the entry of any judgment or enter into any settlement with respect to an Indemnified Claim without the prior written consent of the City, such consent not to be unreasonably withheld or delayed. The City shall have the right to participate in the defense against an Indemnified Claim with counsel of its choice at its own expense.

Consultant shall save, indemnify and hold City harmless and pay judgments that shall be rendered in any such actions, suits, claims or demands against City with respect to any Indemnified Claim.

The indemnification and hold harmless provisions of this Agreement shall survive termination of the Agreement.

6.7 Termination. The City may this Agreement at any time, with or without cause, by written notice of termination to the Contractor.

If the City terminates this Agreement, and such termination is not a result of a default by the Contractor, the Contractor shall be entitled to receive as its sole and exclusive remedy the following amounts from the City, and the City shall have no further or other obligations to the Contractor: the amount due to the Contractor for work executed through the date of termination, not including any future fees, profits, or other compensation or payments which the Contractor would have been entitled to receive if this Agreement had not been terminated.

The City may, by written notice of default to the Contractor, terminate the whole or any part of this Agreement if the Contractor fails to perform any provisions of this Agreement and does not cure such failure within a period of ten (10) days (or such longer period as the Purchasing Agent may authorize in writing) after receipt of said notice from the Purchasing Division specifying such failure. If this Agreement is terminated in whole or in part for default, the City may procure, upon such terms and in such manner as the Purchasing Agent may deem appropriate, supplies or services similar to those terminated.

6.8 Insurance. When applicable and prior to the commencement of the contract, contractor must, at its sole expense, obtain and maintain in full force and effect for the duration of the Agreement and any extension hereof at least the following types and amounts of insurance for claims which may arise from or in connection with this Agreement. Contractor shall furnish the City of Knoxville with properly executed certificates of insurance which shall clearly evidence all insurance required by the City. All insurance must be underwritten by insurers with an A.M. Best rating of A-VIII or better. Such insurance shall be at a minimum the following:

- A. **Commercial General Liability Insurance;** occurrence version commercial general liability insurance, and if necessary umbrella liability insurance, with a limit of not less than \$2,000,000 each occurrence for bodily injury, personal injury, property damage, and products and completed operations. If such insurance contains a general aggregate limit, it shall apply separately to the work/location in this Agreement or be no less than \$3,000,000.

Such insurance shall:

- (a.) Contain or be endorsed to contain a provision that includes the City, its officials, officers, employees, and volunteers as additional insureds with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations. The coverage shall contain no special limitations on the scope of its protection afforded to the above-listed insureds. Proof of additional insured status up to and including copies of endorsements and/or policy wording will be required.

(b.) For any claims related to this project, Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, officers, employees, and volunteers. Any insurance or self-insurance programs covering the City, its officials, officers, employees, and volunteers shall be excess of Contractor's insurance and shall not contribute with it.

(c.) At the sole discretion of the City, dedicated limits of liability for this specific project may be required.

- B. **Automobile Liability Insurance;** including vehicles owned, hired, and non-owned, with a combined single limit of not less than \$1,000,000 each accident. Such insurance shall include coverage for loading and unloading hazards. Insurance shall contain or be endorsed to contain a provision that includes the City, its officials, officers, employees, and volunteers as additional insureds with respect to liability arising out of automobiles owned, leased, hired, or borrowed by or on behalf of Contractor.
- C. **Workers' Compensation Insurance.** Contractor shall maintain workers' compensation insurance with statutory limits as required by the State of Tennessee or other applicable laws and employers' liability insurance with limits of not less than \$500,000. Contractor shall require each of its subcontractors to provide Workers' Compensation for all of the latter's employees to be engaged in such work unless such employees are covered by Contractor's workers' compensation insurance coverage.
- D. **Professional Liability (including Errors & Omissions).** Consultant shall maintain professional liability insurance covering claims arising from real or alleged negligent errors, omissions, or acts committed in the performance of professional services under this contract with limits of \$2,000,000. If the coverage is written on a claims-made form:
- a. The "Retro Date" must be shown and must be before the date of the contract or the beginning of contract work.
 - b. Insurance must be maintained and evidence of insurance must be provided for at least three (3) years after completion of the contract work and acceptance by the City.
 - c. If coverage is cancelled or non-renewed and not replaced with another claims-made policy form with a "Retro Date" prior to the contract effective date, Consultant must purchase "extended reporting" coverage for a minimum of three (3) years after completion of contract work.
 - d. A copy of the claims reporting requirements must be submitted to the City for review.
- E. **Other Insurance Requirements.** Contractor shall:

- Prior to commencement of services, furnish the City with original certificates and amendatory endorsements effecting coverage required by this section and provide that such insurance shall not be cancelled, allowed to expire, or be materially reduced in coverage except on 30 days' prior written notice to the City Attorney of Knoxville; P.O. Box 1631; Knoxville, Tennessee 37901. Proof of policy provisions regarding notice of cancellation will be required.
- Upon the City's request, provide certified copies of endorsements and policies if requested by the City in lieu of or in addition to certificates of insurance. Copies of policies will only be requested when contracts are deemed to be extremely or uniquely hazardous, include a dollar amount that is significant to the overall budget of the City or a City Department, or the coverage(s) may not follow standard insurance forms. A policy will only be requested after the City's Risk Manager has reviewed the contract and proof of coverage has been provided. Should the certificate of insurance refer to specific coverage wording or endorsements(s), proof of such policy wording or endorsement(s) will be required.
- Replace certificates, policies, and endorsements for any such insurance expiring prior to completion of services.
- Maintain such insurance from the time services commence until services are completed. Failure to maintain or renew coverage or to provide evidence of renewal may be treated by the City as a material breach of contract.
- If Contractor cannot procure insurance through an insurer having an A.M. Best rating of A-VIII, Contractor may, in the alternative, place such insurance with insurer licensed to do business in Tennessee and having A.M. Best Company ratings of no less than A. Modification of this standard may be considered upon appeal to the City Law Director.
- Require all subcontractors to maintain during the term of the Agreement Commercial General Liability insurance, Business Automobile Liability insurance, and Workers' Compensation/Employer's Liability insurance (unless subcontractor's employees are covered by Contractor's insurance) in the same manner as specified for Contractor. Contractor shall furnish subcontractors' certificates of insurance to the City without expense immediately upon request.
- Large Deductibles; Self-Insured Retentions. Any deductibles and/or self-insured retentions greater than \$50,000 must be disclosed to and approved by the City of Knoxville prior to the commencement of services. Use of large deductibles and/or self-insured retentions may require proof of financial ability as determined by the City.
- Waiver of Subrogation Required. The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, and employees for losses arising from work performed by Contractor for the City. Proof of waiver of subrogation up to and including copies of endorsements and/or policy wording will be required.

- Occurrence Basis Requirement. All general liability policies must be written on an occurrence basis, unless the Risk Manager determines that a claims made basis is reasonable in the specific circumstance. Use of policies written on a claims made basis must be approved by the City. Risk Manager and retroactive dates and/or continuation dates must be provided to the City prior to commencement of any work performed. Professional Liability and Environmental Liability (Pollution Coverage) are most commonly written on a claims made basis and are generally acceptable in that form.

6.9 Ethical Standards. Attention of all firms is directed to the following provisions contained in the Code of the City of Knoxville: Chapter 24, Article II, Section 24-33 entitled “Debts owed by persons receiving payments other than Salary;” Chapter 2, Article VIII, Division 11. the Contractor hereby takes notice of and affirms that it is not in violation of, or has not participated, and will not participate, in the violation of any of the following ethical standards prescribed by the Knoxville City Code:

A. Section 2-1048. Conflict of Interest.

It shall be unlawful for any employee of the city to participate, directly or indirectly, through decision, approval, disapproval, recommendation, preparation of any part of a purchase request, influencing the content of any specification or purchase standard, rendering of advice, investigation, auditing or otherwise, in any proceeding or application, request for ruling or other determination, claim or controversy or other matter pertaining to any contract or subcontract and any solicitation or proposal therefore, where to the employee’s knowledge there is a financial interest possessed by:

- (1) the employee or the employee’s immediate family;
- (2) A business other than a public agency in which the employee or member of the employee’s immediate family serves as an officer, director, trustee, partner or employee; or
- (3) Any person or business with whom the employee or a member of the employee’s immediate family is negotiating or has an arrangement concerning prospective employment.

B. Section 2-1049. Receipt of Benefits from City Contracts by Council Members, Employees and Officers of the City.

It shall be unlawful for any member of council, member of the board of education, officer or employee of the city to have or hold any interest in the profits or emoluments of any contract, job, work or service, either by himself or by another, directly or indirectly. Any such contract for a job, work or service for the city in which any member of council, member of the board of education, officer or employee has or holds any such interest is void.

C. Section 2-1050. Gratuities and Kickbacks Prohibited.

It is unlawful for any person to offer, give or agree to give to any person, while a city employee, or for any person, while a city employee, to solicit, demand, accept or agree to accept from another person, anything of a pecuniary value for or because of:

- (1) An official action taken, or to be taken, or which could be taken;
- (2) A legal duty performed, or to be performed, or which could be performed; or

(3) A legal duty violated, or to be violated, or which could be violated by such person while a city employee.
Anything of nominal value shall be presumed not to constitute a gratuity under this section.

Kickbacks. It is unlawful for any payment, gratuity, or benefit to be made by or on behalf of a subcontractor or any person associated therewith as an inducement for the award of a subcontract or order.

D. Section 2-1051. Covenant Relating to Contingent Fees.

(a) **Representation of Contractor.** Every person, before being awarded a contract in excess of ten thousand dollars (\$10,000.00) with the city, shall represent that no other person has been retained to solicit or secure the contract with the city upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for bona fide employees or bona fide established commercial, selling agencies maintained by the person so representing for the purpose of securing business.

(b) **Intentional Violation Unlawful.** The intentional violation of the representation specified in subsection (a) of this section is unlawful.

E. Section 2-1052. Restrictions on Employment of Present and Former City Employees.
Contemporaneous employment prohibited. It shall be unlawful for any city employee to become or be, while such employee, an employee of any party contracting with the particular department or agency in which the person is employed.

For violations of the ethical standards outlined in the Knoxville City Code, the City has the following remedies:

- (1) Oral or written warnings or reprimands;
- (2) Cancellation of transactions; and
- (3) Suspension or debarment from being a Contractor or subcontractor under city or city-funded contracts.

The value of anything transferred in violation of these ethical standards shall be recoverable by the City from such person. All procedures under this section shall be in accord with due process requirements, included but not limited to a right to notice and hearing prior to imposition of any cancellation, suspension or debarment from being a Contractor or subcontractor under a city contract.

6.10 Firms must comply with the President's Executive Order No. 11246 and 11375 which prohibit discrimination in employment regarding race, color, religion, sex or national origin. Firms must also comply with Title VI of the Civil Rights Act of 1964, Copeland Anti-Kick Back Act, the Contract Work Hours and Safety Standards Act, Section 402 of the Vietnam Veterans Adjustment Act of 1974, Section 503 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, all of which are herein incorporated by reference.

6.11 Firms shall give consideration to the inclusion of minority firms or individuals in this

project, and shall advise the city in this submittal of qualifications of their efforts to do so.

6.12 Firms shall give consideration to the use of environmentally sustainable best practices, and shall advise the city in this submittal of qualifications of their efforts to do so.

6.13 Federal, State, and Local Requirements. Each submitting entity is responsible for full compliance with all applicable federal, state, and local laws, rules and regulations.

6.14 Licenses. The contractor must be a licensed professional as required by the State of Tennessee for any services in this contract requiring such licensure. Additionally, any and all sub-consultants/contractors employed by the prime consultant/contractor for the performance of the services requested in this RFQ must be licensed as professional service firms in the State of Tennessee if said sub-consultants/contractors will perform services that are considered professional in nature. As such, the prime consultant/contractor submitting his/her statement of qualifications must submit an affidavit with his/her statement of qualifications stating that all sub-consultants/contractors he plans to use are indeed licensed as professional service firms in the State of Tennessee. This affidavit is located in the "submission forms" section of this RFQ.

6.15 Before a contract is signed by the City, the submitting entity, if selected, **must** provide the City Purchasing Division with a copy of its valid business license **or** with an affidavit explaining why it is exempt from the business licensure requirements of the city or county in which it is headquartered. If a contract is signed, the contractor's business license shall be kept current throughout the duration of the contract, and the contractor shall inform the City of changes in its business name or location.

6.16 Funding. The City's performance and obligation to pay under this contract is subject to funding contingent upon an annual appropriation.

6.17 Governing Law and Venue. This Agreement shall be governed by and construed in accordance with the substantive laws of the State of Tennessee and its conflict of laws provisions. Venue for any action arising between the City and the Contractor from the Agreement shall lie in Knox County, Tennessee.

6.18. Subcontracts to the Agreement. Contractor shall not enter into a subcontract for any of the services performed under this Agreement without obtaining the prior written approval of the City.

6.19. Amendments. This Agreement may be modified only by a written amendment or addendum that has been executed and approved by the appropriate officials shown on the signature page of the Agreement.

6.20 Captions. The captions appearing in the Agreement are for convenience only and are not a part of the Agreement; they do not in any way limit or amplify the provisions of the Agreement.

6.21. Severability. If any provision of the Agreement is determined to be unenforceable or invalid, such determination shall not affect the validity of the other provisions contained in the

Agreement. Failure to enforce any provision of the Agreement does not affect the rights of the parties to enforce such provision in another circumstance, nor does it affect the rights of the parties to enforce any other provision of this Agreement at any time.

6.22 No Benefit for Third Parties. The services to be performed by the Contractor pursuant to the Agreement with the City are intended solely for the benefit of the City, and no benefit is conferred hereby, nor is any contractual relationship established herewith, upon or with any person or entity not a party to the Agreement. No such person or entity shall be entitled to rely on the Contractor's performance of its services hereunder, and no right to assert a claim against the City or the Contractor, its officers, employees, agents, or contractors shall accrue to the Contractor or to any subcontractors, independently retained professional consultant, supplier, fabricator, manufacturer, lender, tenant, insurer, surety, or any other third party as a result of this Agreement or the performance or non-performance of the Contractor's services hereunder.

6.23 Non-Reliance of Parties. Parties explicitly agree that they have not relied upon any earlier or outside representations other than what has been included in the Agreement. Furthermore, neither party has been induced to enter into this Agreement by anything other than the specific written terms set forth herein.

6.24. Force Majeure. Neither party shall be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times shall be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

6.25 EEO/AA/ The City of Knoxville is an EE/AA/Title VI/Section 504/ADA/ADEA Employer.

6.26 By submitting a statement of qualifications, the submitting entity agrees to all terms and conditions established in this RFQ, including its contract requirements.

VII. Instructions to Submitting Entities

All submissions of qualifications shall comply with the following instructions. These instructions ensure that (1) submissions contain the information and documents required by the City RFQ; and (2) the submissions have a degree of uniformity to facilitate evaluation.

7.1 General

Submission forms and RFQ documentation may be obtained on or after February 11, 2019, at no charge from:

City of Knoxville Purchasing Division
City/County Building
400 Main Street, Room 667
Knoxville, Tennessee 37902

between 8:30 a.m. and 4:30 p.m. (Eastern Time), Monday through Friday or by calling 865-215-2070. Forms and RFQ information are also available on the City web site at www.knoxvilletn.gov/bids where it can be read or printed using Adobe Acrobat Reader software.

7.2 Submission Information

Submitters shall include five (5) hard copies (one original and four (4) duplicates—**mark the original as such**), as well as one electronic copy of their submission (.pdf format on CD or USB drive only—**mark the storage device with the company name**); the electronic version shall be an exact duplicate of the original, and the electronic version will be the official document exhibited in the contract. **Electronic submissions must be included with the sealed submissions; do not email your submission.**

Submissions of Qualifications shall clearly indicate the legal name, address and telephone number of the submitting entity (company, firm, partnership, individual). Original signature must be signed above the typed or printed name and title of the signer. All submissions of qualifications must be signed by an officer of the company authorized to bind the firm to a contract.

Qualifications will be received until 11:00:00 a.m. (Eastern Time) on **March 1, 2019**. Each submission of qualifications must be submitted in a sealed envelope addressed to:

City of Knoxville Purchasing Division
City/County Building
400 Main Street, Room 667
Knoxville, TN 37902

IMPORTANT NOTE: Each outermost mailing envelope or shipping carton containing a submission of qualifications must be plainly marked on the outside “HazMat & Geotechnical”. Those making submissions are reminded that the Purchasing Division receives many submissions for any number of solicitations; **unlabeled submissions are extremely difficult to match to their appropriate solicitations and therefore may be rejected.**

Any submissions of qualifications received after the time and date on the cover sheet will not be considered. It shall be the sole responsibility of the submitting entity to have the submissions of qualifications delivered to the City of Knoxville Purchasing Division on or before that date.

Late submissions will not be considered. Submissions that arrive late due to the fault of United

States Postal Service, United Parcel Service, DHL, FEDEX, any delivery/courier service, or any other carrier of any sort are still considered late and shall not be accepted by the City. Such submissions shall remain unopened and will be returned to the submitting entity upon request.

7.3 Format

The City is committed to reducing waste. Submissions of qualifications must be typed on 8.5 x 11 inch wide white paper, printed on both sides. DO NOT BIND the document; instead, staple or binder clip the submission together and place in a sealed envelope (see Paragraph 7.2). Pages must be consecutively numbered. A table of contents must be included in the submission immediately after the title page, and each of the following numbered sections must be tabbed.

Submissions of qualifications shall be structured as follows:

1. Title Page
2. Table of Contents
3. Submission Forms:
 - A. Form S-1
 - B. Non-Collusion Affidavit
 - C. No Contact/No Advocacy Affidavit
 - D. Iran Divestment Act Certification of Noninclusion
 - E. Diversity Business Enterprise Program form
4. Body of Proposal: Firm shall include any information it deems necessary for evaluation during selection process including experience with and successful completion of projects with the following criteria: (Information which submitting entity wishes to include)
 - a. Public Work at the city, county, and state level.
 - b. Renovation Projects of comparable size and scope to this project.
 - c. Experience and Approach to Performing Hazardous Material Testing, Assessments and Surveys for Demolition and Renovations
 - d. Geotechnical Exploration of previously developed sites
 - e. Construction Materials Testing on Renovated Facilities
5. References: Include at least three (3) references of similar projects to include project contact name, email address, and phone number.

NOTE: All required submission forms may be found in this solicitation document.

7.4 Evaluation of Qualifications

All qualified submissions received by the deadline will be analyzed by the Evaluation Committee according to the criteria outlined in these specifications. Failure to comply with the provisions of the RFQ may cause any submission of qualifications to be ineligible for evaluation. Each submittal of Qualifications will be initially analyzed and judged according to the evaluation criteria below. The maximum score is 100 points.

Firms and/or teams responding to this Request for Qualifications shall be available for interviews with the Evaluation Committee. Discussions may be conducted with responsible submitting entities for purposes of clarification to assure full understanding of and conformance to the RFQ

requirements. Selection shall be based on the firms' qualifications applicable to the scope and nature of the services to be performed per this request for qualifications. Determination of firms' qualifications shall be based on their written responses to this Request for Qualifications and information presented to the Evaluation Committee during oral interviews, if any.

Each Statement of Qualifications will be initially analyzed and judged according to the evaluation criteria listed in Section VIII below. The maximum score is 100 points.

In addition to materials provided in the written responses to this Request for Qualifications, the Committee may request additional material, information, or references from the submitting entity or others.

Provided it is in the best interest of the City of Knoxville, the firm or team determined to be the most responsive to the City of Knoxville, taking into consideration the evaluation factors set forth in this Request for Qualifications, will be selected to begin contractual negotiations. The firm or team selected will be notified at the earliest practical date and invited to submit more comprehensive information if necessary. If no satisfactory agreement can be reached with the "most responsive firm," the City may elect to negotiate with the next best and most responsive firm or team.

VIII. Evaluation Criteria

An evaluation team, composed of representatives of the City, will evaluate Statements of Qualifications on a variety of quantitative and qualitative criteria. Upon receipt of submissions, the City will review to determine whether the submission is acceptable or non-acceptable based on the criteria outlined below.

The criteria, and their associated weights, upon which the evaluation of the qualifications will be based includes, but is not limited to, the following:

- Firm Experience: **35 points**
- Proposed Project Team Experience and Current Workload Commitments: **30 points**
- Approach to Performing the Scope of Services: **20 points**
- References and Quality of Past Work: **15 points**

Submission Forms

**CITY OF KNOXVILLE
REQUEST FOR QUALIFICATIONS**

**NEW PUBLIC SAFETY COMPLEX – HAZARDOUS MATERIAL
SURVEY, GEOTECHNICAL EXPLORATION AND CONSTRUCTION
MATERIALS TESTING SERVICES
Submission Form (S-1)**

Qualifications To Be Received by 11:00 a.m., Eastern Time, March 1, 2019, in Room 667-674, City/County Building, Knoxville, Tennessee.

IMPORTANT: Submitters shall include five (5) hard copies (one (1) original and four (4) duplicates—**mark the original as such**), as well as one electronic copy of their submission (.pdf format on CD or USB drive only—**mark the storage device with the company name**); the electronic version shall be an exact duplicate of the original, and the electronic version will be the official document exhibited in the contract. **Electronic submissions must be included with the sealed submissions; do not email your submission.**

Please complete the following:

Legal Name of Qualifier: _____

Address: _____

Telephone Number: _____

Fax Number: _____

Contact Person: _____

Email Address: _____

DUNS #: _____

Signature: _____

Name and Title of Signer:

Note: Failure to use these response sheets may disqualify your submission.

NON-COLLUSION AFFIDAVIT

State of _____

County of _____

_____, being first duly sworn, deposes and says that:

- (1) He/She is the _____ of _____, the firm that has submitted the attached Proposal;
- (2) He/She is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;
- (3) Such Proposal is genuine and is not a collusive or sham Proposal;
- (4) Neither the said firm nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other vendor, firm or person to submit collusive or sham proposal in connection with the contract or agreement for which the attached Proposal has been submitted or to refrain from making a proposal in connection with such contract or agreement, or collusion or communication or conference with any other firm, or, to fix any overhead, profit, or cost element of the proposal price or the proposal price of any other firm, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Knoxville or any person interested in the proposed contract or agreement; and
- (5) The proposal of service outlined in the Proposal is fair and proper and is not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the firm or any of its agents, representatives, owners, employees, or parties including this affiant.

(Signed): _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20__.

NOTARY PUBLIC

My Commission expires _____

No Contact/No Advocacy Affidavit

State of _____

County of _____

_____, being first duly sworn, deposes and says that:

(1) He/She is the owner, partner, officer, representative, or agent of _____
_____, the Proposer that has submitted the attached Proposal;

(2) The Proposer _____ swears or affirms that he/she will abide by the following "No Contact" and "No Advocacy" clauses:

a) **NO CONTACT POLICY:** After the posting of this solicitation to the Purchasing Division's website, any contact initiated by any proposer with any City of Knoxville representative concerning this proposal is strictly prohibited, unless such contact is made with the Assistant Purchasing Agent (Penny Owens). Any unauthorized contact may cause the disqualification of the proposer from this procurement transaction.

b) **NO ADVOCATING POLICY:** To ensure the integrity of the review and evaluation process, companies and/or individuals submitting proposals for any part of this project, as well as those persons and/or companies representing such proposers, may not lobby or advocate to the City of Knoxville staff including, but not limited to, members of City Council, Office of the Mayor, the Finance Department, or any other City staff.

Any company and/or individual who does not comply with the above stated "No Contact" and "No Advocating" policies may be subject to having their proposal rejected from consideration.

Signed: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 2_____.

My commission expires: _____

IRAN DIVESTMENT ACT Certification of Noninclusion

NOTICE: Pursuant to the Iran Divestment Act, Tenn. Code Ann. § 12-12-106 requires the State of Tennessee Chief Procurement Officer to publish, using creditable information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105. Inclusion on this list makes a person ineligible to contract with the state of Tennessee; if a person ceases its engagement in investment activities in Iran, it may be removed from the list. A list of entities ineligible to contract in the State of Tennessee Department of General Services or any political subdivision of the State may be found here:

[https://www.tn.gov/content/dam/tn/generalservices/documents/cpo/cpo-library/public-information-library/List of persons pursuant to Tenn. Code Ann. 12-12-106 Iran Divestment Act updated 7.7.17.pdf](https://www.tn.gov/content/dam/tn/generalservices/documents/cpo/cpo-library/public-information-library/List_of_persons_pursuant_to_Tenn._Code_Ann._12-12-106_Iran_Divestment_Act_updated_7.7.17.pdf)

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to T.C.A. § 12-12-106.

Vendor Name (Printed)	Address
By (Authorized Signature)	Date Executed
Printed Name and Title of Person Signing	

NOTARY PUBLIC:

Subscribed and sworn to before me this _____ day of _____, 2_____.

My commission expires: _____

DIVERSITY BUSINESS ENTERPRISE (DBE) PROGRAM

The City of Knoxville strongly encourages prime contractors to employ diverse businesses in the fulfillment of contracts/projects for the City of Knoxville.

The City of Knoxville's Fiscal Year 2019 goal is to conduct 4.03% of its business with minority-owned businesses, 16.30% of its business with woman-owned businesses, and 39.77% with small businesses.

While the City cannot engage (pursuant to state law) in preferential bidding practices, the City does **strongly encourage** prime contractors to seek out and hire diverse businesses in order to help the City meet its goals as stated above. As such, the City encourages prime contractors to seek out and consider competitive sub-bids and quotations from diverse businesses.

For DBE tracking purposes, the City requests that prime contractors who are bidding, proposing, or submitting statements of qualifications record whether or not they plan to employ DBE's as sub-contractors or consultants. With that in mind, please fill out, sign and submit (with your bid/proposal) the following sub-contractor/ consultant statement.

CITY OF KNOXVILLE DIVERSITY BUSINESS DEFINITIONS

Diversity Business Enterprise (DBE's) are minority-owned (MOB), women-owned (WOB), service-disabled veteran-owned (SDVO), and small businesses (SB), who are impeded from normal entry into the economic mainstream because of past practices of discrimination based on race or ethnic background. These persons must own at least 51% of the entity and operate or control the business on a daily basis.

Minority: A person who is a citizen or lawful admitted permanent resident of the United States and who is a member of one (1) of the following groups:

- a. African American, persons having origins in any of the Black racial groups of Africa;
- b. Hispanic American, persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race;
- c. Native American, persons who have origin in any of the original peoples of North America ;
- d. Asian American, person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

Minority-owned business (MOB) is a continuing, independent, for profit business that performs a commercially useful function, and is at least fifty-one percent (51%) owned and controlled by one (1) or

more minority individuals.

Woman-owned business (WOB) is a continuing, independent, for profit business that performs a commercially useful function, and is at least fifty-one percent (51%) owned and controlled by one (1) or more women.

Service Disabled Veteran-owned business (SDOV) is a continuing, independent, for profit business that performs a commercially useful function, owned by any person who served honorably on active duty in the armed forces of the United States with at least a twenty percent (20%) disability that is service connected. Meaning such disability was incurred or aggravated in the line of duty in the active military, naval or air service, and is at least fifty-one percent (51%) owned and controlled by one (1) or more service disabled veteran.

Small Business (SB) is a continuing, independent, for profit business which performs a commercially useful function and has total gross receipts of not more than ten million dollars (\$10,000,000) average over a three-year period or employs no more than ninety-nine (99) persons on a full-time basis.

Subcontractor/Consultant Statement
(TO BE SUBMITTED IN THE BID/PROPOSAL ENVELOPE)

We _____ do certify that on the
(Bidder/Proposer Company Name)

_____ (Project Name)

\$ _____
(Amount of Bid)

Please select one:

Option A: Intent to subcontract using Diverse Businesses

A Diversity business will be employed as subcontractor(s), vendor(s), supplier(s), or professional service(s). The estimated **dollar value** of the amount that we plan to pay is:

\$ _____
Estimated Amount of Subcontracted Service

Diversity Business Enterprise Utilization			
Description of Work/Project	Amount	Diverse Classification (MOB, WOB, SB, SDOV)	Name of Diverse Business

Option B: Intent to perform work "without" using Diverse Businesses

We hereby certify that it is our intent to perform 100 % of the work required for the contract, work will be completed without subcontracting, or we plan to subcontract with non-Diverse companies.

DATE: _____ COMPANY NAME: _____

SUBMITTED BY: _____ TITLE: _____
(Authorized Representative)

ADDRESS: _____

CITY/STATE/ZIP CODE: _____

TELEPHONE NO: _____

ADDENDUM NO. 1

DATE: February 22, 2019
TO: All Potential Qualifiers
FROM: Penny Owens, Assistant Purchasing Agent, City of Knoxville
SUBJECT: Addendum No. 1 – RFQ for New Public Safety Complex – Hazardous Material Survey, Geotechnical Exploration and Construction Materials Testing Services

RFQS TO BE OPENED: March 1, 2019 at 11:00:00 a.m. (Eastern Time)

This addendum is being published to address the following question received regarding the above referenced RFQ. This addendum becomes a part of the contract documents and modifies the original specifications as noted.

Question #1: The Subcontractor/Consultant Statement located on Page 24 of the RFQ requests **The Amount of Bid**. Option A requests **Estimated Amount of Subcontracted Services**, with **Amounts** of Bid associated with each Diverse Business Enterprise. It is our intent to Subcontract with a DBE. Since the qualification process is not to include a cost (one is to be negotiated with the successful firm), how shall we complete this form with regard to questions regarding cost (amount) of services provided.

Response: Please leave blank the line requesting the "Amount of Bid" and in the "Diversity Business Enterprise Utilization" table, enter a percentage of the work to be performed by a DBE rather than a dollar amount.

END OF ADDENDUM 1



Quantum Environmental &
Engineering Services, LLC

March 1, 2019

City of Knoxville Purchasing Division
City/County Building
400 Main Street, Room 667
Knoxville, TN 37902

**Subject: Statement of Qualifications for Hazardous Materials Survey, Geotechnical Exploration
and Construction Materials Testing Services
New Public Safety Complex, Knoxville, Tennessee**

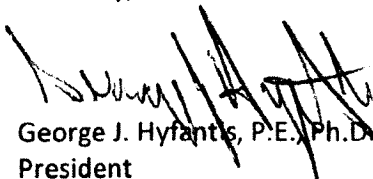
Dear Sir/Madam:

Quantum Environmental & Engineering Services, LLC (QE2) is pleased to provide this Statement of Qualifications (SOQ) to the City of Knoxville for consideration for Hazardous Materials Survey, Geotechnical Exploration and Construction Materials Testing Services in support of the New Public Safety Complex project. The renovation of the site will include building demolition, selective demolition of interior finishes and systems, buildout of interior spaces, and exterior site improvements. This SOQ is submitted in response to the City of Knoxville Request for Qualifications (RFQ) dated February 11, 2019.

The QE2 Team has performed many tasks similar in scope and size to the anticipated work of the project. We have the experience, qualifications, resources, and trained staff to conduct the proposed work efficiently and effectively. We also have specific, directly applicable experience with renovation and demolition projects at multi-structure former hospital sites.

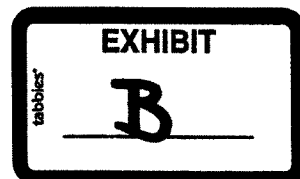
QE2 appreciates the opportunity to provide this SOQ, and potentially work with the City of Knoxville on this project. If you have any questions concerning this submittal, or need additional information, please feel free to contact Terence Davis or me at (865) 689-1395.

Sincerely,



George J. Hyfant, P.E., Ph.D.
President

c: Proposal File 2019-029



Statement of Qualifications

FOR

**New Public Safety Complex
Hazardous Material Survey, Geotechnical Exploration
and Construction Materials Testing Services**

Submitted to:



**City of Knoxville
Office of Purchasing Division
City/County Building, Room 667-674
400 Main Street
Knoxville, Tennessee 37902**

Submitted by:



**Quantum Environmental & Engineering Services, LLC
126 Dante Road
Knoxville, Tennessee 37918
(865) 689-1395
www.QE2LLC.com**

March 1, 2019

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APPENDIX - RESUMES

A. Form S-1

**CITY OF KNOXVILLE
REQUEST FOR QUALIFICATIONS**

**NEW PUBLIC SAFETY COMPLEX – HAZARDOUS MATERIAL
SURVEY, GEOTECHNICAL EXPLORATION AND CONSTRUCTION
MATERIALS TESTING SERVICES
Submission Form (S-1)**

Qualifications To Be Received by 11:00 a.m., Eastern Time, March 1, 2019, in Room 667-674, City/County Building, Knoxville, Tennessee.

IMPORTANT: Submitters shall include five (5) hard copies (one (1) original and four (4) duplicates—mark the original as such), as well as one electronic copy of their submission (.pdf format on CD or USB drive only mark the storage device with the company name); the electronic version shall be an exact duplicate of the original, and the electronic version will be the official document exhibited in the contract. **Electronic submissions must be included with the sealed submissions; do not email your submission.**

Please complete the following:

Legal Name of Qualifier: Quantum Environmental & Engineering Services, LLC

Address: 126 Dante Road, Knoxville, TN 37918

Telephone Number: 865.689.1395

Fax Number: 865.689.6844

Contact Person: George J. Hyfantis, Jr.

Email Address: ghyfantis@qe2llc.com

DUNS #: 14-2688600

Signature: 

Name and Title of Signer: George J. Hyfantis, Jr., President

Note: Failure to use these response sheets may disqualify your submission.

B. Non-Collusion Affidavit

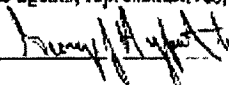
NON-COLLUSION AFFIDAVIT

State of Tennessee

County of Knox

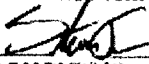
George J. Hyfantis, Jr., being first duly sworn, deposes and says that:

- (1) He/She is the President of Quantum Environmental & Engineering Services, LLC the firm that has submitted the attached Proposal;
- (2) He/She is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;
- (3) Such Proposal is genuine and is not a collusive or sham Proposal;
- (4) Neither the said firm nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other vendor, firm or person to submit collusive or sham proposal in connection with the contract or agreement for which the attached Proposal has been submitted or to refrain from making a proposal in connection with such contract or agreement, or collusion or communication or conference with any other firm, or, to fix any overhead, profit, or cost element of the proposal price or the proposal price of any other firm, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Knoxville or any person interested in the proposed contract or agreement; and
- (5) The proposal of service outlined in the Proposal is fair and proper and is not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the firm or any of its agents, representatives, owners, employees, or parties including this affiant.

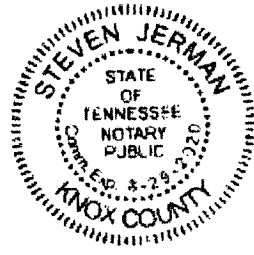
(Signed): 

Title: President

Subscribed and sworn to before me this 26th day of February, 2019.


NOTARY PUBLIC

My Commission expires 8-29-2020



C. No Contact/No Advocacy Affidavit

No Contact/No Advocacy Affidavit

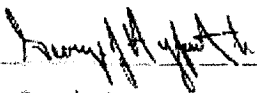
State of Tennessee

County of Knox

George J. Hyfantis, Jr., being first duly sworn, deposes and says that:

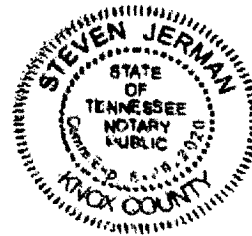
- (1) He/She is the owner, partner, officer, representative, or agent of Quantum Environmental & Engineering Services, LLC (QE2), the Proposer that has submitted the attached Proposal;
- (2) The Proposer George J. Hyfantis, Jr. swears or affirms that he/she will abide by the following "No Contact" and "No Advocacy" clauses:
 - a) **NO CONTACT POLICY:** After the posting of this solicitation to the Purchasing Division's website, any contact initiated by any proposer with any City of Knoxville representative concerning this proposal is strictly prohibited, unless such contact is made with the Assistant Purchasing Agent (Penny Owens). Any unauthorized contact may cause the disqualification of the proposer from this procurement transaction.
 - b) **NO ADVOCATING POLICY:** To ensure the integrity of the review and evaluation process, companies and/or individuals submitting proposals for any part of this project, as well as those persons and/or companies representing such proposers, may not lobby or advocate to the City of Knoxville staff including, but not limited to, members of City Council, Office of the Mayor, the Finance Department, or any other City staff.

Any company and/or individual who does not comply with the above stated "No Contact" and "No Advocating" policies may be subject to having their proposal rejected from consideration.

Signed: 
Title: President

Subscribed and sworn to before me this 26th day of February, 2019.

My commission expires: 8-29-2020




D. Iran Divestment Act Certification of Noninclusion

IRAN DIVESTMENT ACT
Certification of Noninclusion

NOTICE: Pursuant to the Iran Divestment Act, Tenn. Code Ann. § 12-12-106 requires the State of Tennessee Chief Procurement Officer to publish, using creditable information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105. Inclusion on this list makes a person ineligible to contract with the state of Tennessee, if a person ceases its engagement in investment activities in Iran, it may be removed from the list. A list of entities ineligible to contract in the State of Tennessee Department of General Services or any political subdivision of the State may be found here:

https://www.tn.gov/content/dam/tn/generalservices/documents/coo/coo-library/public-information-library/List_of_persons_pursuant_to_Tenn_Code_Ann_12-12-106_Iran_Divestment_Act_updated_7.7.17.pdf

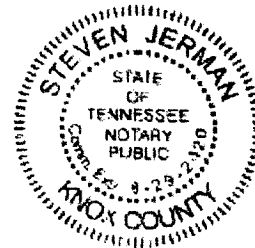
By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to T.C.A. § 12-12-106.

Vendor Name (Printed)	Address
Quantum Environmental & Engineering Services, LLC	126 Dante Road, Knoxville, TN 37918
By (Authorized Signature)	Date Executed
	March 1, 2019
Printed Name and Title of Person Signing	
George J. Hylantis, Jr.	

NOTARY PUBLIC:

Subscribed and sworn to before me this 1st day of March, 2019.

My commission expires: 9-29-2020



E. Diversity Business Enterprise Program form

**Subcontractor/Consultant Statement
(TO BE SUBMITTED IN THE BID/PROPOSAL ENVELOPE)**

We Quantum Environmental & Engineering Services, LLC do certify that on the
(Bidder/Proposer Company Name)
City of Knoxville HazMat & Geotechnical Exploration and Construction Materials Testing Services
(Project Name)
\$ N/A
(Amount of Bid)

Please select one:

Option A: Intent to subcontract using Diverse Businesses

A Diversity business will be employed as subcontractor(s), vendor(s), supplier(s), or professional service(s). The estimated dollar value of the amount that we plan to pay is

\$ _____
Estimated Amount of Subcontracted Service

Diversity Business Enterprise Utilization			
Description of Work/Project	Amount	Diverse Classification (MOB, WOB, SB, SBOV)	Name of Diverse Business

Option B: Intent to perform work "without" using Diverse Businesses

We hereby certify that it is our intent to perform 100 % of the work required for the contract, work will be completed without subcontracting, or we plan to subcontract with non-Diverse companies.

DATE: March 1, 2019 COMPANY NAME: Quantum Environmental & Engineering Services, LLC

SUBMITTED BY: George J. Hyfantis, Jr. TITLE: President
(Authorized Representative)

ADDRESS: 126 Dante Road

CITY/STATE/ZIP CODE: Knoxville, TN 37918

TELEPHONE NO. 865.689.1395

PROPOSAL

Introduction and General Qualifications

Quantum Environmental & Engineering Services, LLC (QE2) is pleased to provide this Statement of Qualifications (SOQ) to the City of Knoxville, Office of Purchasing Division for consideration for Hazardous Materials Survey, Geotechnical Exploration, and Construction Materials Testing Services in support of the City of Knoxville's New Public Safety Complex project. The renovation project will convert the former multiple-structure Tennova Physicians Regional Medical Center into the New Public Safety Complex. The renovation will consist of building demolition, selective demolition of existing interior finishes and systems, and new buildout of interior spaces, plumbing, electrical, and HVAC systems. Exterior site improvements, parking, drives, and landscaping will also be included. This SOQ is submitted in response to a City of Knoxville Request for Qualifications (RFQ) dated February 11, 2019.

QE2 was originally established as an operating division of Environmental Systems Corporation (ESC) in the 1980's before becoming independent and wholly owned by senior management in 2003. George J. Hyfantis, PhD, P.E., manages environmental and engineering portions of the QE2 projects. Dr. Hyfantis is the Senior Engineer and President of QE2. Dr. Hyfantis' contact information and the company's legal name and address are:

George J. Hyfantis, PhD, P.E.
Quantum Environmental & Engineering Services, LLC
126 Dante Road
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QE2 has conducted hundreds of environmental and geotechnical projects for clients including private business owners and developers, municipal city and county agencies, universities, and many different agencies of the State and federal government. QE2 is the current environmental services contractor for the University of Tennessee Knoxville (UTK) Facilities Services Department, and we have active contracting agreements with the City of Knoxville, Knox County, Knoxville's Community Development Corporation (KCDC), and other public entities. Our successful client partnerships are based on timely, effective project execution, regular and detailed communication, and the belief that long-term relationships are more important than short-term challenges.

QE2's geographic work area encompasses the entire State of Tennessee and the southeastern United States, although we concentrate our efforts in eastern Tennessee. QE2 has performed many jobs

similar in scale and scope to the anticipated work of the New Public Safety Complex project, and we have the experience, qualifications, resources and trained staff to conduct the work efficiently and effectively. We have specific, directly applicable experience in:

- comprehensive hazardous materials surveying, sampling, and assessment for asbestos containing materials (ACM), lead-containing and lead-based paint (LBP), mercury-containing equipment, polychlorinated biphenyl (PCB)-containing equipment, ozone-depleting substances (ODS), petroleum-containing equipment and compounds, miscellaneous chemicals and cleaning solutions, and mold and biological hazards;
- hazardous materials quantification and abatement cost estimation;
- pre-demolition and pre-renovation design;
- hazardous materials abatement design, bid document preparation, and abatement oversight with clearance inspections and monitoring;
- general site investigations, assessments, and remediation design;
- Phase I Environmental Site Assessments (ESAs) in accordance with ASTM standards;
- Phase II ESAs and subsurface remediation planning;
- underground (USTs) and aboveground (ASTs) storage tank consulting including management, assessment, removal, and remediation;
- National Environmental Policy Act (NEPA) assessments, Environmental Assessments (EAs), Categorical Exclusions (CEs) and documentation;
- Brownfield site navigation and remediation through Voluntary Oversight Assistance Program (VOAP) and other Tennessee Division of Remediation (DoR) cleanup programs;
- radon and vapor exposure assessments and design of mitigation barriers and remediation systems;
- indoor air quality (IAQ) assessments for mold, pollen, and other allergens, and industrial hygiene (IH) exposure assessments for other potential chemicals of concern;
- physical inspections for sources of moisture intrusion (roof, gutter, or window leaks, storm intrusions under building facades, and poor or improper site grading around the buildings), moisture generation (condensation, moisture and vapor barrier failures), or moisture release (plumbing leaks);
- moisture content investigations of building materials;
- engineering solution development to eliminate the sources of moisture intrusion, generation, or release; and
- abatement plans, abatement oversight, and clearance testing for mold and water damage resulting from moisture intrusion, generation, or release.

This work has been performed at renovated and redeveloped hospital sites like the former Baptist Hospital riverfront site and the former Lakeshore Mental Health Hospital site; at UTK and in other

occupied, multi-structure sites; and at historical buildings within operating campuses and active communities.

QE2 has teamed with Shield Engineering (Shield) to provide expertise in geotechnical exploration and construction materials testing. QE2 and Shield have teamed or worked side-by-side in the past on projects such as the former riverfront Baptist Hospital site, the Lakeshore Mental Health Hospital site, and the old downtown State Supreme Court site. Shield was formed in 1988 as a full-service geotechnical, environmental and construction materials testing consulting firm serving municipal, state, federal, commercial, and industrial clients in the United States and abroad. Shield maintains offices in Charlotte, North Carolina and Knoxville, Tennessee. The firm is comprised of professional engineers, geologists and earth scientists trained and experienced in the geotechnical and construction materials testing. Shield's expertise includes not only consulting on the design phase of a project, but also investigating the condition of existing structures that are slated for substantial modification.

Shield has been working in the East Tennessee area for more than 15 years and began work in the area serving as the quality assurance consultant for multiple landfill closures at Oak Ridge National Laboratory on the Melton Valley Completion Hydraulic Isolation projects. Shield's Knoxville office has completed over 1,000 projects ranging in size from small office buildings, new education facilities, parking garages, major interstate interchanges, state of the art office and lab facilities, and multi-story high rise structures. The Knoxville Shield branch offers traditional geotechnical, materials testing and environmental services. Shield's geotechnical group has provided analysis for:

- foundations,
- retaining structures,
- slope stability,
- liquefaction,
- settlement,
- consolidation, and
- groundwater flow and monitoring.

Additionally, Shield provides forensic evaluations for commercial and residential structures. Shield provides preliminary opinions based on visual observations only, as well as remediation recommendations and/or designs based on investigations of building materials and/or subsurface soils. Remediation designs have included, but are not limited to:

- helical piers,
- tie back anchors,
- grout modification,

- lime / cement stabilization, and
- multiple grouting applications.

Shield has extensive experience providing Construction Materials Testing and Special Inspections services. Services provided on a routine basis include, but are not limited to:

- proofrolls and undercut verification,
- fill density,
- subgrade verification,
- caisson / micropile / driven H-Pile inspection and pile testing,
- Dynamic Cone Penetration (DCP) testing,
- footing bearing capacity testing,
- reinforcing steel inspection,
- concrete, mortar, and grout field testing,
- post tensioning inspection,
- steel construction and welding,
- high strength bolts,
- concrete, masonry, and wood construction,
- verification and inspection of soils,
- pile / pier foundations,
- Sprayed Fire-Resistant Materials (SFRM),
- Exterior Insulation and Finish Systems (EIFS),
- smoke control, and
- seismic / wind resistance.

Shield maintains and operates its own nationally accredited American Association of State Highway Transportation Officials (AASHTO) materials testing laboratory in Knoxville and Charlotte. These facilities provide local support to our geotechnical and construction materials testing groups, field personnel, and clients. The laboratory is staffed with experienced engineering technicians and scientists, supervised by licensed professional engineers. Testing is performed in conjunction with applicable standards that include American Society of Testing and Materials (ASTM), AASHTO, and United State Department of Agriculture (USDA), local, state and other published standards. The goal of Shield's laboratory is to provide precise and accurate results customized to the client's specific standards and budget in a timely manner. This goal is further achieved by Shield's participation in the soil and aggregate proficiency sample programs.

QE2's directly applicable experience at both the 12-building riverfront Baptist Hospital site and the 20+-building Lakeshore Mental Health Hospital site included providing thorough hazardous

materials surveys and reports for every structure; preparing abatement and demolition specifications and overseeing abatement, demolition, and disposal; testing contaminated soil, preparing Soil Management Plans and overseeing contaminated soil disposal; preparing grading plans and stormwater management plans; managing the removal and disposal USTs and ASTs and utility tunnels; and working with engineers and contractors for the partial demolition and renovation of several structures. Shield served as a geotechnical consultant during the design phase for new construction at the riverfront Baptist Hospital site. Shield oversaw the drilling program to characterize the soil and bedrock of the site, which revealed a very weathered and cavity prone bedrock due to the close proximity to the Tennessee River. A deep foundation system with micro piles was recommended from the drilling and emphasized due to the formation of sinkholes during the demolition phase of the former hospital. Shield also provided drilling, soil testing, and construction materials testing for the Lakeshore Mental Health Hospital site, and consulted on slope stabilization and undercut evaluations. Recent experience at these former hospital sites will help the QE2 Team anticipate potential future issues and minimize work slowdowns and change orders.

In the sections below, examples of projects are given to demonstrate the Team's history of good communication with involved stakeholders by working successfully with designers, owners, and regulatory agencies. Potentially involved regulatory agencies include Knox County, multiple Divisions of the Tennessee Department of Environment and Conservation (TDEC), the Tennessee Occupational Safety and Health Administration (TOSHA), the Environmental Protection Agency (EPA), federal OSHA, and procedures of the ASTM. The QE2 Team understands issues specific to renovations and demolitions of multi-story structures with a long history of complex renovations and uses. The Team has performed hundreds of jobs with related scopes and we have the experience, qualifications, resources and personnel to conduct the proposed work in an efficient and timely manner.

The Team's corporate and individual licenses and certifications to perform the requested work in the State of Tennessee are discussed in the Personnel Qualifications / Project Team section and resumes with individual certifications and licensing information are provided in the Appendix.

a. Public Work at the City, County, and State Level

QE2 has gained experience from winning and maintaining environmental contracts with the State of Tennessee, UTK, local municipal agencies including Knox County and the City of Knoxville (including the Knoxville Police Department (KPD), Knoxville Fire Department (KFD), and Engineering Department), semi-public entities such as KCDC and the Public Building Authority (PBA) of Knoxville and Knox County, city and county school systems, regional county governments, local and regional public housing authorities, private developers and architects, and the federal government. All of

these projects required detailed knowledge of the applicable guidelines, regulations, and procedures of local municipalities including Knox County, multiple Divisions of TDEC, TOSHA, EPA, federal OSHA, ASTM and more.

Shield has been operating as a geotechnical, construction materials testing and environmental consulting firm since 1988 and in the East Tennessee area for more than 15 years. A large segment of their over 1,000 completed projects have included work for various government entities and their consultants such as Knox County, the City of Knoxville, Oak Ridge National Lab (ORNL), Y-12, K-25, TRU-Waste, Spallation Neutron Source (SNS), Tennessee Valley Authority (TVA), Army Corp of Engineers, BWXT, Bechtel Jacobs Corporation, Knoxville Utilities Board, City of Gatlinburg, Jefferson County, City of Madisonville, Grainger County Schools, Hamblen County Schools, and the City of Bristol, Virginia.

Examples of directly applicable project experience are listed in the following paragraphs. Many of the projects cited are located within active communities and campus, where strict compliance with the Owner's requirements for access and escort were essential to the work. The brief project descriptions below demonstrate our capabilities and experience on projects of similar scope at the City, County, and State level. Section "b." provides more detailed examples of several larger projects comparable in size and scope to the New Public Safety Complex. Our Team recognizes the importance of good communication with involved stakeholders and maintains a record of working successfully with public clients and regulatory agencies. We excel at creative problem solving; and managing staff, budgets, and timelines to meet project goals; and we pay the required attention to detail required to successfully and cost-effectively manage complex projects.

Work at the City Level

QE2 is headquartered in Knoxville, and Shield also has its East Tennessee base in Knoxville. We take very seriously our role in the Knoxville community in aiding development while protecting local resources and public health. The QE2 Team has been continuously under contract with the City of Knoxville for one or more projects for much of the last decade, and we continue to provide quality work for the City of Knoxville, and its Police and Fire Departments. Specific projects in the last 8 years have included:

- Lakeshore Mental Health Hospital – hazmat surveys of more than 20 structures, abatement design and oversight, demolition design and oversight, soil testing, construction materials testing, geotechnical investigations, UST and AST removal (see detailed discussion in Section "b.")
- Lakeshore Administration Building - renovation for new City Parks and Recreation Office, hazmat survey, abatement design and oversight
- Fire Stations #4, 6, 7, 8, 12, 16, and 17 – hazmat surveys and quantification for renovations

- KFD Headquarters and Fire Station #3 – IAQ assessments
- KFD Arson Investigation Office – hazmat survey, LBP testing, and IAQ assessment for renovations
- Public Safety Building – three separate IAQ assessments, and lead dust testing at the indoor firing range
- KPD Walker Boulevard Office – IAQ assessment
- Knoxville College Property – Phase I ESA, hazardous materials consulting
- Cal Johnson Recreational Center – hazmat survey, LBP testing, abatement quantities and cost estimates
- Milton Roberts Recreational Center – roof sampling for hazardous materials
- Sediment Sampling at City Properties
- McClung Warehouses – hazmat sampling, abatement and demolition oversight
- Ft. Dickerson Entrance – hazmat sampling, abatement cost estimates
- City of Knoxville 5-Year Environmental Review Program
- Old Supreme Court Building – hazmat survey (for the State), Phase I and Phase II ESAs (for the City), geotechnical drilling and testing for private developer (see Section “b.” for detailed description)
- 1000 Val Street structure – hazmat survey, abatement estimate for demolition and road extension
- Transformer Spill Emergency Response – soil sampling, remediation of materials, transportation and disposal oversight
- City Vehicle Impound Lot – hazmat survey for demolition, subsurface soil sampling, vapor screening and remediation design
- Knoxville Coliseum and Civic Auditorium – full hazmat survey, abatement design, quantification and cost estimating, LBP testing and removal planning, oversight
- Jefferson City, City Center - forensic soil study
- McGhee Tyson Airport Fire Station – geotechnical testing
- City of Morristown Airport - sinkhole repair
- City of Jonesborough - utility poles assessment
- Jefferson City Library – geotechnical investigation
- Chilhowee Park Building – geotechnical investigation
- Blountville, Tennessee Landfill – geotechnical investigation
- City of Oak Ridge, derelict structure program – hazmat surveys and abatement oversight at multiple neglected residences prior to demolition
- Clinton City Hall – hazmat sampling in support of renovations
- West Morristown High School - geotechnical investigation for additions
- Old Rutledge High School - geotechnical investigations for additions
- Washburn Elementary Gymnasium – geotechnical investigation for additions
- Rutledge Primary School – geotechnical investigation for additions

Work at the County Level

QE2 and Shield have performed environmental and geotechnical services at several Knox County and other regional county-owned properties, and specific projects in the last 8 years have included:

- Willow Bend Environmental Review (ER) for Knox County Community Development (KCCD)
- Young High Pike Housing Site ER for KCCD
- Hollywood Road Housing Site ER for KCCD
- Downtown YWCA – pre-renovation hazmat sampling for KCCD
- Atkins Road property – EA and hazmat survey
- Ramona Avenue property - ER for KCCD
- Mascot, Bluebonnet Road - EAs for KCCD
- Helen Ross McNabb Site, Coster Road – EA for KCCD
- Middlebrook Veterans Home Site – Phase I ESA
- Helen Ross McNabb John Tarleton Center – hazmat survey for demolition
- Knox County 5-Year Environmental Review Program
- Knox County Domestic Violence Shelter – geotechnical investigation
- Jefferson County Green Housing – geotechnical investigation
- Claiborne County Landfill – geotechnical investigation
- Roane County Solid Waste Parking – geotechnical investigation
- Grainger County Landfill – groundwater sampling, monitoring, reporting
- Grainger County High School – geotechnical investigations for new high school construction

Work for KCDC, PBA, and other Semi-Public Entities

The QE2 Team has served semi-public agencies like KCDC, PBA, and local and regional housing authorities on multiple projects over the last decade including:

- Bearden Elementary School – pavement settling study for PBA
- KCDC Montgomery Village Apartments – hazmat surveys, abatement monitoring before renovations and demolitions
- KCDC Taylor-Williams Homes – hazmat surveys, abatement monitoring before renovations and demolitions; Phase I ESAs
- KCDC Western Heights Apartments – hazmat surveys, abatement monitoring before renovations and demolitions, LBP testing, mold assessments and abatement planning
- Bethel Avenue property, Bethel & McConnell properties – Phase I ESA
- KCDC Cagle Terrace – EA
- Eastport School Residence Project – Phase I ESA, radon testing
- KCDC Clifton Road - noise study
- KCDC Western Heights Apartments - LBP Inspection
- Helen Ross McNabb Housing Facilities - indoor air quality testing
- KCDC Verandas on Flenniken - indoor air quality testing

- KCDC North Ridge Crossing - indoor air quality testing
- KCDC Vista Apartments - indoor air quality testing
- Delmar Haynes Auto Dealership Site for KCDC – Phase I and Phase II ESA, hazmat survey
- Break-Through Housing – geotechnical investigation
- Dogwood Manor Assisted Living in Oak Ridge – geotechnical investigation
- 1201 E. Harper Avenue Habitat Home – geotechnical investigation
- Jellico Housing Duplexes – geotechnical investigation
- Tazewell Airport – geotechnical investigation
- KCDC Oglewood Avenue – geotechnical investigation
- Tazewell Airport Runway / Hanger Expansion – geotechnical investigation
- Jellico Welcome Center Parking Area – geotechnical investigation
- Prosser Road Head Start Facility – geotechnical investigation
- Morristown Housing Authority Apartments – geotechnical investigation
- Greeneville Housing Duplexes – geotechnical investigation
- East Tennessee Historical Society - forensic investigation

The Team has also served local and regional utility, transportation, and housing providers that may sometimes receive public funding or serve the public such as the Knoxville Utilities Board (KUB), the Chattanooga Area Regional Transportation Authority (CARTA), the Helen Ross McNabb Center, Middle Tennessee Electric Corporation, McMinnville Electric, the Erwin Housing Authority, the Boys and Girls Club of East Tennessee, and the Knoxville Botanical Gardens. Work has included hazardous materials surveys, IAQ investigations, UST and AST consulting, worker training, and Phase I and Phase II ESAs.

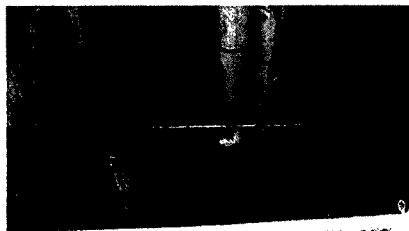
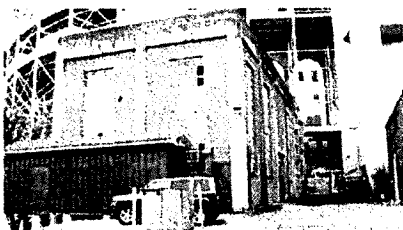
Work at the State Level

QE2 is proud to include on our corporate resume that we were the State of Tennessee’s Hazardous Materials Consultant from 1998 to 2003, and their Statewide Environmental Services Consultant under two different contracts spanning from 2003 to 2012. We have also been the UTK Facilities Services Department’s environmental services consultant since 2015. Through those contracts we have worked on more than a thousand public projects, and served almost every department of the State of Tennessee. Shield has served the State of Tennessee on numerous geotechnical and construction materials testing projects at UTK, Pellissippi State, Tennessee School for the Deaf, Austin Peay State, UTK Sorority Houses, the East Tennessee Veterans Cemetery, and the Tennessee Air National Guard. Shield also maintained an “on-call” contract with TDOT and consulted on issues at interstate interchanges, road repairs, and lane additions. The following paragraphs provide detailed descriptions of a few of the larger projects with similar scopes to the New Public Safety Complex project. An additional list of smaller projects with similar scopes follows.

UTK Engineering Services Facility Site (Berry Hall, Estabrook Hall, and the Pasqua Nuclear Engineering Building)

QE2 was selected by UTK as the environmental consultant for the pre-demolition hazardous materials surveys in support of the abatement and demolition of Berry Hall, Estabrook Hall, and the Pasqua Nuclear Engineering Building on the UTK campus in Knoxville, Tennessee. The three structures were being demolished to make way for the construction of the new Engineering Services Facility. Estabrook Hall featured several construction phases and many renovations over a 120-year period, and the covering and reconfiguring of old steam systems made the asbestos survey difficult. Berry Hall dated to before 1940 and multiple renovations lead to the covering of suspect materials with layers of flooring. Pasqua had also undergone multiple renovations in its history, especially during the asbestos era. The 3-building site included a wide array of asbestos-containing materials including piping insulation, asbestos ceiling panels, roofing materials, and multiple layers of flooring. Many of these materials were hidden within wall, ceilings, and crawlspaces. The hazardous materials services scope of work included performing a physical hazardous materials survey, sampling, testing, quantifying confirmed hazardous materials, and preparing a written Hazardous Materials Survey Report with findings, recommendations, and opinions of probable abatement costs. QE2 completed the field work in late 2016 issued the final report in January 2017.

QE2 was selected by the lead design firm to provide Asbestos Abatement Design Specifications for the initial interior abatement phase, and the post-demolition subsurface piping abatement. QE2 led abatement contractor walk-through visits, attended kick-off meetings, and provided responses to contractor questions for Addendums. QE2 also reviewed abatement contractor submittals and payment applications, and performed onsite verification of hazardous materials removal throughout the abatement and demolition effort. Frequent visits for quantification of unit price items were required to keep costs down. Once the abatement was completed, QE2 assisted in the review of the required Post-Job Submittals, including administrative logs, disposal manifests, air monitoring data, and certificates of completion.



UTK Hazardous Materials Surveys, Knoxville, Tennessee

As UTK Facilities Services Department environmental consultant, QE2 has performed detailed asbestos surveys at several structures in the early stages of planning for demolition and/or renovation. The buildings surveyed have included twelve existing structures at the newly acquired North Concord Street property, three buildings comprising Melrose Hall, the Alpha Gamma Rho fraternity house, and the east and south sections of Neyland Stadium and structures underneath.



The investigations included the identification and sampling of suspect ACM and other hazardous materials including mercury-containing equipment, ODS, PCB-containing equipment, petroleum-containing equipment, chemicals, etc. The surveys included reviewing existing reports and inspecting the structures for potentially hazardous materials; sampling and analyzing potential ACM; evaluating the current status of other potentially hazardous materials and conditions; quantifying confirmed ACM; and preparing reports to document the findings. QE2's work revealed previously overlooked materials from previous contractors inside wall cavities, above ceilings, and below floors. The additional discoveries will be incorporated into abatement design scopes prior to bidding during future phases of the projects. Catching these materials in advance of bidding will lead to more accurate design, and more accurate and competitive bids with minimal change orders.

QE2 was selected by Cope Architecture and UTK in 2018 to provide abatement design documents for the upcoming Neyland Stadium renovations. The initial phases of abatement design have been completed, but bidding and demolition activities have been temporarily postponed by UTK.

UTK Science Laboratory Facility Project

On behalf of UTK and under to contract to the lead design firm, QE2 provided hazardous materials surveys, abatement design and oversight, and project closure for the Science Laboratory site. The project included the removal of several existing 100-year old structures from property on the block between Cumberland Avenue, 13th Street, and White Avenue; and modifications to steam piping configurations in an adjacent steam/utility tunnel to support the building of a newly opened, state of the art science laboratory facility. Prior to project construction work, QE2 conducted surveys required to assess potential impacts to hazardous materials, and to determine disposal options. The hazardous materials services scope of work was conducted in two main phases. The first phase included performing a physical hazardous materials survey, sampling, testing, quantifying confirmed hazardous materials, and preparing a written Hazardous Materials Survey Report with findings, recommendations, and opinions of probable abatement costs. QE2 completed the first phase in July 2015. The second phase included preparation of abatement design specifications, assistance to the General Contractor in preparing subcontractor bidding events, review of abatement contractor submittals, and onsite verification of hazardous materials removal. The oversight work included physical inspections to confirm removal and to ensure that proper work procedures were followed. QE2 takes pride in the fact that abatement bids from multiple contractors are usually within a narrow range, which indicates that the contractors were able to gain a good understanding of the scope of work from QE2's documents.



QE2 provided environmental submittal review oversight during the actual abatement including a pre-construction meeting and walk-through to review abatement plans onsite. QE2's past experience has proven that many potential slow-downs and mistakes can be avoided by good communication between contractors, Designers, regulators, and Owner representatives before and during the project. Frequent visits for quantification of unit price items were required to keep costs down. Once the abatement was completed, QE2 assisted in the review of the required Post-Job Submittals, including administrative logs, disposal manifests, air monitoring data, and certificates of completion.

UTK Ferris, Perkins, and Harris Halls, and Hoskins Library, Window Replacement Project, Knoxville

On behalf of UTK and under to contract to the lead design firm, QE2 provided hazardous materials surveys and abatement design for the Window Replacement and Masonry Repairs Project at four buildings on the UTK campus in 2017. The buildings included Ferris, Perkins, and Harris Halls, and the Hoskins Library. The work was performed to support the replacement of windows in the four 70+-year old structures. QE2 conducted surveys to assess the potential impacts to hazardous materials, and to determine removal methods and disposal options. The hazardous materials services scope of work included performing a physical hazardous materials survey, sampling, testing, quantifying confirmed hazardous window components like glazing, caulk, and lead-based paint, and preparing a written comprehensive Hazardous Materials Survey Report with findings, recommendations, and opinions of probable abatement costs. QE2 completed the first phase in August 2017. The second phase included preparation of abatement design specifications. Work included assistance to the Designer and UTK in preparing subcontractor bidding documents, and review of abatement contractor submittals. Field work began in January 2019, and onsite verification of hazardous materials removal is ongoing.



Other significant State projects include:

- Brushy Mountain State Penitentiary – hazmat surveys at more than twenty structures, Phase I and II ESAs, abatement cost estimates, demolition oversight, UST and AST assessments
- Former Tennessee State Prison in Nashville – hazmat surveys for renovation planning, abatement design and oversight, IAQ assessments, soil testing and drilling, mortar testing and masonry repairs
- UTK Tennis Facility, Knoxville – hazmat survey for renovation, abatement design and oversight, clearance inspections
- Tennessee School for the Deaf, Cottage E - hazmat survey for renovation, abatement and demolition design, bidding documents, oversight, clearance inspections
- UTK West Campus Redevelopment Project - hazmat survey at five residence structures, abatement design and oversight at two completed, and two more pending (see Section “b.” for a detailed description)

- UTK, Neyland Stadium South Renovations and Neyland Biology Annex pending demolition - hazmat survey, abatement design, actual abatement work pending; geotechnical drilling oversight
- UTK College of Nursing renovations - hazmat survey and report, quantities and cost estimates
- UTK Melrose Hall Complex - three building hazmat survey and report, abatement quantities
- UTK Engineering Services Facility - three buildings hazmat survey, abatement design and oversight, soil sampling, Soil Management Plan (see Section "b." for a detailed description)
- UTK Concord Street Property – twelve structures hazmat and LBP surveys, vapor monitoring, UST assessments, vapor remediation design and Brownfields consulting
- Volunteer Boulevard Sidewalks – geotechnical investigations
- Pellissippi State – geotechnical investigation for parking lot expansion
- Tennessee School for the Deaf - sinkhole investigation and repair
- Austin Peay State - Alumni Memorial geotechnical investigation
- UTK Biology Building - geotechnical investigations for renovations
- UTK Sorority House Zeta Tau Alpha – geotechnical assessment
- East Tennessee Veterans Cemetery – geotechnical assessment
- TDOT Broadway & I-640 – geotechnical assessments at interchange
- TDOT Campbell County – geotechnical investigations for truck lane expansions
- McGhee Tyson Tennessee Air National Guard – geotechnical investigation for apron and hanger expansion
- UTK Student Center – hazmat surveys of three buildings, quantities and cost estimation, abatement design and oversight (see Section "b." for a detailed description)
- East Tennessee State University Fine Arts Center – soil sampling and assessment, Soil Management Plan for unsuitable soils, disposal and treatment oversight

b. Renovation Projects of Comparable Size and Scope

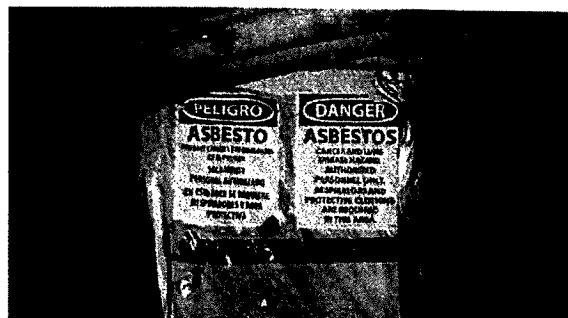
The QE2 Team has worked on multiple local projects of similar size and scope to the New Public Safety Complex project. Five prime examples are provided in this section, which show the QE2 Team's directly applicable experience.

Former Baptist Hospital Site, Knoxville, Tennessee

Shield served as the geotechnical consultant during the design phase of redevelopment of the former Baptist Hospital site. Shield oversaw the drilling program to characterize the soil and bedrock of the site. Results of the drilling revealed a very weathered and cavity prone bedrock due to the close proximity to the Tennessee River. Due to the nature of the underlying bedrock and soils, structural loads, and design parameters, a deep foundation system was recommended that included micro

piles. The need for use of a deep foundation system was further emphasized due to the formation of sinkholes during the demolition phase of the former hospital.

QE2 was selected as the environmental consultant on the lead development team for abatement and demolition of the former Baptist Hospital campus. The campus included twelve or thirteen structures up to nine stories in height, most of which were demolished. Several of the structures remained intact for renovation. Several adjacent buildings and major streets remained active and safety was of main concern. Most of the structures were built between 1948 and 1980 and included a wide array of asbestos-containing materials including piping insulation contained in steam tunnels. The structures were tied together in an assortment of ways, both structurally and with utilities. The many eras of renovations and the connections between the multi-aged structures created numerous challenges for hazardous materials surveys, including multiple layers of flooring, multiple ceilings, and often multiple layers of walls. The Baptist Hospital site was also under a Brownfields Agreement with TDEC due to limited soil contamination, and QE2 reviewed existing reports, surveyed and sampled contaminated and unsuitable soils, and prepared documentation of environmental requirements for bidders and for the awarded contractors.

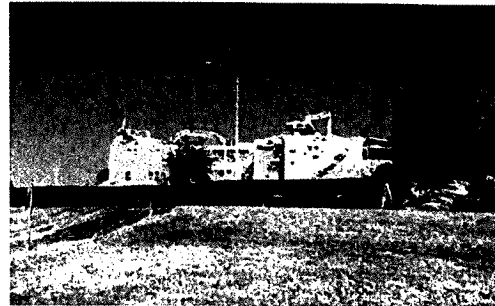


QE2 completed oversight of the abatement work and cooperated with the contractor to make sure all hazardous materials were removed prior to the multi-story building demolition, and that usable materials were salvaged and recycled to the greatest extent possible. Additionally, QE2 prepared a Remedial Action Plan to address the site soils because of the Brownfield Agreement, and we worked closely with TDEC to aid the plan's implementation. QE2 also provided oversight for the removal of several large USTs, and assisted the contractor in obtaining air permits for temporary rock and concrete crushing operations.

Former Lakeshore Mental Health Institute/Lakeshore Park, Knoxville, Tennessee

In November 2013, QE2 was awarded a City of Knoxville professional services contract to accomplish building abatement and demolition at the former Lakeshore Mental Health Institute located on Lyon's Bend Drive in Knoxville. The City of Knoxville acquired the campus of the former Lakeshore

Mental Health Hospital from the State of Tennessee with plans to convert and expand the campus into a public-use recreational facility. The Campus included several five- to seven-story structures and multiple smaller structures formerly used to treat and house patients. The vast majority of the structures were built during the 1950's and 1960's at the height of the use of asbestos materials. QE2 provided the professional services needed to complete the hazardous material surveys for 23 buildings which were demolished.



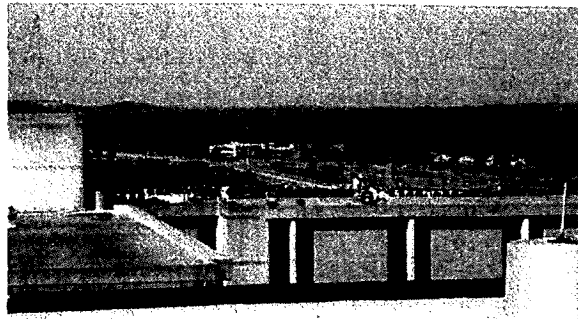
Several of the buildings had connections to old steam tunnels with asbestos-containing materials (ACMs), or had foundation tunnels which required assessments. QE2's scope of work also included developing project design plans, specifications, and bid packages for hazardous materials abatement and building demolition, as well as providing abatement and demolition monitoring to ensure that all material was permitted and disposed of properly. All of the work occurred while the Lakeshore Park remained active, and planning included traffic, pedestrian, and utility concerns. Other portions of the project included utility coordination, abandonment, and replacement; steam tunnel evaluations and closures; and underground and aboveground storage tanks (USTs and ASTs) removals. Work remained on schedule with plans originally set by the City and their specific budget cycles.

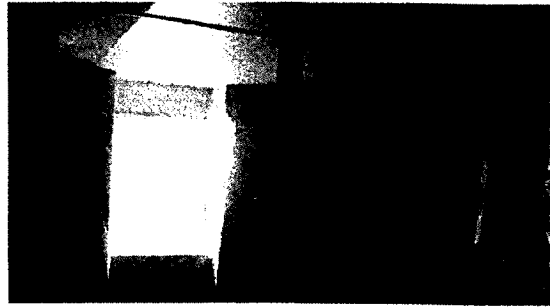


Several building sites required soil testing, grading plans, and storm water management plans. One of the buildings was partially demolished, new walls were constructed, and interiors were renovated for City use. Construction material's testing was performed as needed. Shield provided the materials testing services, and also assisted in slope stability and undercutting assessments.

UTK West Campus Redevelopment Project, Knoxville, Tennessee

On behalf of UTK and under contract to the Architect and Designer, QE2 performed hazardous materials surveys to assess the presence of ACMs and other hazardous materials at the 15-story Apartment Residence Hall; the 8-story, 2-tower Humes Residence Hall; the 2-tower, 8-story Reese Residence Hall; the 15-story Morrill Residence Hall; and the 2-tower, 15-story Carrick Residence Hall between December 2014 and January 2017. These structures are, or have been, part of the construction area of the new West Campus Redevelopment project, which has been managed onsite by construction management firms and UTK. With our past knowledge of State databases and our working relationship with the UTK Facilities Services Department, QE2 acquired historical asbestos survey reports for most of the buildings. The hazardous materials surveys included reviewing the previously prepared reports, identifying data gaps, performing sampling to fill the gaps, and quantifying hazardous materials. We also obtained historical drawings and original construction plans from the 1960's. Some of the work was performed while parts of the structures were occupied by students, camp groups, and administrative personnel. Timing of the field work was carefully coordinated with project designers, managers, and UTK housing and maintenance staffs. During the surveys, QE2 inspectors found multiple areas of previously overlooked asbestos-containing flooring and/or mastic underneath carpet and newer tile, areas of asbestos-containing ceiling and wall texture above new ceiling tiles in areas thought to have been abated, and asbestos-containing thermal system insulation under newer non-asbestos materials.

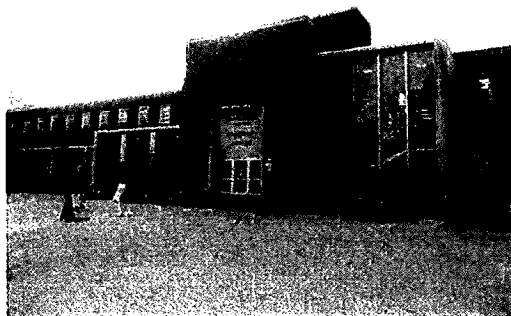




QE2's scope of work has included developing project abatement design plans, specifications, cost estimates, and bid packages for Apartment Residence Hall, Humes Hall, and Morrill Hall; attending project meetings; and overseeing hazardous materials abatement and building demolition at two of the structures. A third structure will be abated and demolished this summer. Project oversight included abatement contractor submittals review and visual and air clearance monitoring to ensure that all abated material was permitted and properly disposed in accordance with the Project Manual and technical specifications. Future work on the West Campus project will likely include hazardous materials abatement design and oversight at Reese and Carrick Halls.

UTK Carolyn P. Brown University Center and Student Counseling Center, UTK, Knoxville, Tennessee

On behalf of UTK and under to contract to the lead design firm, QE2 conducted hazardous materials surveys to assess the presence of ACM and other hazardous materials at the Carolyn P. Brown University Center and the Student Counseling Center at the UTK campus. The field work was performed during September and October 2014 while the facility was fully operational. Field work was coordinated with Facilities Services and daily communication was maintained with the building's administrator and maintenance staff for access to restricted areas. The scope of work for the survey portion of the project included reviewing the existing reports and inspecting three structures for potentially hazardous materials; sampling and analyzing potential ACM not previously assessed; evaluating the current status of other potentially hazardous materials and conditions; quantifying confirmed ACM; and preparing a report to document the findings.



QE2's work revealed numerous previous contractor mistakes and previously overlooked materials inside wall cavities, above ceilings, and below visible floors. The additional discoveries were incorporated into the abatement design scope prior to bidding. Catching these materials in advance of bidding saved the Client tens of thousands of dollars in later change orders and time delays. The project included abatement and demolition design, cost estimates, meetings, unit quantity reviews, onsite monitoring, and clearances as the project progressed to ensure that all material was permitted and properly disposed. The project was completed in 2015 and a new Student Center has recently opened at the site.

Former State Supreme Court Site, Knoxville

Shield served as the geotechnical consultant during the design phase of the original redevelopment project for a private client. The anticipated structure initially included a 5-story below grade parking garage covering approximately one square city block in downtown Knoxville. The garage would be utilized to support a combination of retail shops, condominiums, apartments and hotel. Due to the nature of the underlying bedrock and soils, structural loads, and design parameters, a deep foundation system was recommended which included micro piles or drill piers (caissons). Additionally, due to the depth of the cut, temporary shoring was designed to support the cut face of the rock and soil and the surrounding utilities, roadways, and structures. Temporary shoring recommendations included soil nailing, soldier pile and lagging tieback systems, and rock anchoring. Due to delays in financing the original project was canceled; however, Shield is currently consulting on the new phase of the project which is currently in design.

QE2 provided environmental services at the Supreme Court site for the State in 2012. QE2 performed the initial hazardous materials screening survey, and made abatement quantity calculations and budgets. Once the property was turned over to the City of Knoxville, QE2 provided documentation and consultation as the City requested proposals for development. QE2 also performed a Phase I ESA for the City, which indicated that several potential contaminant sources had historically been in the immediate vicinity. The hazardous materials assessments also revealed that the building had an existing, out-of-use underground storage tank with some remaining fuel and water. Based on the subsurface historical information, QE2 also conducted a Phase II ESA to assess subsurface conditions. Several borings were drilled onsite and soil was sampled and analyzed. All data was passed on to the City and to potential developers.

c. Experience and Approach to Performing Hazardous Material Testing, Assessments and Surveys for Demolition and Renovations

The information presented here will demonstrate the QE2 Team's knowledge and experience performing hazardous materials in complex multi-structure sites, the applicable regulations and

sequences, and our ability to work in cooperation with municipal project managers and regulators in a timely and cost-efficient manner. The scope of work and sequence of phases are likely to vary based on the results of initial work, and the most immediate needs of the City. This summary will convey to the City that QE2 has a good understanding of the work required, and we are qualified to perform this work. Priority factors for projects may include immediate safety and security concerns, specific redevelopment plans, and budget availability. QE2 realizes that the ultimate factor in many decisions could be budget availability. QE2 is experienced with developing preliminary estimates and is prepared to provide all the technical information available and experienced professional opinions to help the City make the most responsible public decisions.

Based on QE2's understanding of the upcoming work, site preparation for the renovation of existing facilities will include building demolition, selective interior demolition of finishes and systems, and renovation and build-out of new interior spaces. The project may also involve modifications to subsurface utilities such as steam and condensate piping after demolition or prior to renovation. As part of many large projects similar in size and scope to the New Public Safety Complex, QE2 has performed thorough Hazardous Materials Surveys to assess potential impacts to hazardous materials during future work.

We have a long history of projects with public agencies, and specifically with the City of Knoxville. We understand how to work with different agencies that manage specific buildings, provide maintenance, oversee planning and projects, and maintain historical data and reports. We are comfortable working on active campuses with occupants and administrators. We have experience with complex challenges such as publicity and media, controversial demolition of historically significant structures, and even smaller challenges like parking. We also understand how City projects are funded and scheduled, and we understand the potential difficulties which might be created by poor budget and schedule management of a project. We always strive to provide detailed and accurate reports that minimize budget surprises, change orders, and schedule delays.

Structures at the former Tennova Physicians Regional Medical Center are programmed for demolition or renovation. We will attend any required kick-off or coordination meetings. Once a Notice to Proceed is received, QE2 will begin preparation for the survey work, including coordinating with the City and any remaining occupants of the facility. Hazardous materials data may be available for some structures and if so, QE2's Tennessee licensed Asbestos Inspectors will review the existing reports and formulate a plan to walk-through and perform physical inspections to confirm documented quantities and ensure that no suspect materials were overlooked. Although the New Public Safety Complex project is not specifically regulated by the Asbestos Hazard Emergency Response Act (AHERA), asbestos sampling will be conducted in general accordance with AHERA protocol for

selection of materials, locations, laboratory methods, and number of samples. Exceptions to AHERA will be made as appropriate, for example, to assess exterior materials. In the structures where no previous survey data are available, QE2 will perform physical inspections, determine homogeneous suspect ACM, and sample and analyze in general accordance with AHERA protocol. Other hazardous materials inventories will also be performed. Since demolition is the likely plan for some site structures, QE2 will perform intrusive (or destructive) assessments with City approval in strategic areas to investigate the potential presence of hazardous materials (especially asbestos-containing materials, or ACM) hidden in wall cavities, pipe chases, etc. Knowledge of building plumbing and steam systems is essential in providing an accurate survey, especially in sites of multi-era construction and/or renovation. Any noted suspect ACM will be sampled and/or quantified. QE2's experience with similar projects has proven that these thorough investigations are essential to limit potential Change Orders and project delays for suspect materials uncovered during demolition.

For structures, or portions of structures that are designated for rehabilitation and renovation, QE2 will work with the City to reduce costs by potentially limiting surveys to those materials impacted by the renovations. No destructive or intrusive sampling will be performed in these structures without prior approval by the City. If deemed necessary for renovation purposes, QE2's licensed Tennessee Lead-based Paint Inspector can test painted surfaces for lead content with an x-ray fluorescence (XRF) device for instantaneous results. The QE2 Team also has an experienced indoor air quality (IAQ), moisture intrusion, and fungal activity assessment staff. Our past project experience tells us that IAQ issues are often a concern in renovating structures which have been unoccupied for extended periods with little or no conditioned air.

Cost estimates will be developed for hazardous materials abatement in each of the structures included in the project. In structures which will be renovated with minimal potential impact to ACM, QE2 can provide abatement estimates for specific materials impacted by the renovations. Materials included in the estimates will be ACM, mercury-containing equipment, PCB-containing equipment, ozone-depleting substances, cleaning and maintenance chemicals, paints, lubricants, petroleum products, etc. Other potential environmental concerns may be potentially encountered during work, and we have the experience and staff to address those issues within the abatement packages. These issues may include abandoned steam lines or tunnels in the subsurface, or USTs and ASTs and associated soil contamination. QE2 has experience dealing with all of these potential problems. QE2 has assessed, removed, remediated, or replaced petroleum tanks at hundreds of sites over the past 25 years. QE2 has also assisted the State of Tennessee and other clients with the decommissioning of old boiler plants and coal storage areas, including conducting subsurface investigations and preparing deed restrictions. Deed restrictions can be used effectively to limit certain uses of contaminated areas without incurring massive costs in cleanup.

Permitting requirements will be determined and will likely include abatement and demolition notifications required by National Emission Standards for Hazardous Air Pollutants (NESHAP) and Knox County. Petroleum storage tank removal may require TDEC Division of Underground Storage Tanks (DUST) notification and/or local Fire Marshal review. Survey reports can be prepared and submitted to the City based on individual structures, on phases of planned work, or as one comprehensive report after all hazmat surveys are complete. Significant time and cost savings can be often be realized by obtaining the existing historical data, therefore eliminating many hours of re-work.

With the information obtained during the hazardous materials surveys, QE2 can assist the City in developing a prioritized list of buildings designated for abatement, demolition, and renovation. Priority factors may include immediate safety and security concerns, geographic proximity or structure similarity, specific redevelopment plans, and budget availability. The City may choose to demolish structures by geographic location so that one grading and one storm water and grading plan can be utilized for several buildings. The need for the development of a specific project in a specific area may also be a major factor. QE2 realizes that budget availability, safety and aesthetic concerns, and planned development are all major factors in prioritization decisions and we will provide the City all available input to make the most practical decisions. Our experience with developing preliminary abatement cost estimates at similar sites indicates that some structures will likely require extensive abatement, while others require far less. QE2 is prepared to provide all the technical information available and experienced professional opinions to help the City make the most responsible public decisions.

QE2's licensed Abatement Project Designer will develop technical specifications and bid packages for abatement as needed. QE2 takes pride in preparing detailed Hazardous Materials Survey Reports with accurate abatement quantities, which leads to accurate cost estimation and minimal or no change orders as the work is executed. QE2 will utilize similar bid packages and specifications from past work as models to efficiently produce packages for the New Public Works Complex. Once the initial set of Specifications is approved and executed, subsequent packages can efficiently build on the work already established. The specifications will be reviewed by QE2 senior engineering staff and stamped and signed as required. The sections will include specifications for submittals, monitoring, environmental administrative logs, and procedures for the removal and disposal of ACMs and other hazardous materials. QE2 will assist the City in the preparation of permit application to the Knox County Department of Air Quality Management and Fire Marshal review, if desired. NESHAPS notification permits for Asbestos Abatement and/or Demolition will likely be filed after a Contractor is chosen and disposal locations are determined.

Project specifications will include Pre-Job Submittals to verify that all work will be performed with licensed firms and workers in accordance with applicable regulations. QE2's abatement and demolition project experience has resulted in good professional working relationships with many well-qualified local and regional abatement and demolition contractors. Through our network of contacts, QE2 will ensure that the City receives the maximum potential bidding participation from qualified contractors. Specifications can be submitted as a complete package if desired, although the work may be performed in several smaller geographic phases as budgets allow.

QE2's project manager and Asbestos Designer will attend the demolition/abatement bid meeting and help with any required walk-throughs. We will be prepared to present some brief but important aspects of the abatement project, which will minimize contractor confusion and questions and limit unnecessary time spent on Addendums related to abatement. If questions related to the abatement are received from bidders, QE2 will help prepare clear and concise responses to be reviewed and included by the Designer and/or Construction Manager. QE2's takes pride in the fact that abatement bids from multiple contractors are usually within a narrow range, which indicates that the contractors were able to gain a good understanding of the scope of work from QE2's documents and comments.

After an abatement contractor (or combined abatement and demolition contractor) is selected, QE2 can provide input on the review and confirmation process, if desired. As part of QE2's scope of work, we will review the abatement contractor's required Pre-Job Submittals. The review will include assessing asbestos and other hazardous materials abatement plans, security measures, administrative log forms, worker and supervisor qualifications and certifications, regulatory notification documents, equipment capabilities, and any other materials required to meet the Specifications, and applicable regulations of EPA, NESHAP, ASTM, and TDEC APC and DWSM.

Oversight during the actual abatement will likely include a pre-construction meeting and walk-through to review abatement plans onsite. Our past experience has proven that many potential slow-downs and mistakes can be avoided by good communication between contractors, Designers, regulators, and Owner representatives before and during the project. As the abatement work progresses, QE2 will review daily personnel and/or area air monitoring data from the contractor to ensure that a safe work environment is maintained. We will also review qualifications and certifications for any new workers added to the crews after the start of work, and review any necessary changes to the pre-job plans. Checks on containment methods and other work practices will also be made to ensure adherence to technical Specifications. As areas of friable abatement are completed, QE2 can provide a Tennessee-licensed Asbestos Project Monitor to collect air clearance samples and visually inspect the work. After satisfactory clearance testing and visual inspections, the work containment will be approved for breakdown. In areas of non-friable abatement or other areas

where full containment and negative air pressure is not required (e.g., most exterior abatement) QE2 will performed detailed physical inspections to ensure that all materials have been adequately abated. Site visits will be documented by QE2 Field Reports, which will be emailed to the involved parties after inspections. Any serious issues will be brought to the attention of the Designer, Construction Manager, or other Owner's representative.

Any potential ACM discovered during abatement or demolition which had not been discovered during the initial surveys (e.g., materials hidden inside wall cavities) will be sampled and tested. Confirmed ACMs will be removed and disposed according to the existing procedures detailed in the specifications. If unit rates are utilized during the project, QE2's onsite inspectors will assist in the determination of those quantities as the project progresses and help confirm contractor pay requests. The removal and proper disposal of ODSs, mercury-containing equipment, electronics and batteries, PCB-containing equipment, petroleum-containing equipment, chemicals, and other hazardous materials will also be verified and documented.

Once the abatement is completed, QE2 will assist in the review of the required Post-Job Submittals, which will include administrative logs, disposal manifests, air monitoring data, and certificates of completion. QE2 can attend post-job meetings as deemed necessary.

d. Geotechnical Exploration of Previously Developed Sites

Shield's Knoxville office has extensive experience performing geotechnical explorations on existing facilities for both interior and exterior additions. Shield has completed over 1,000 projects ranging in size from small office buildings, new education facilities, parking garages, major interstate interchanges, state of the art office and lab facilities, and multi-story high rise structures. Shield's geotechnical group has provided analysis for foundations, retaining structures, slope stability, liquefaction, settlement, consolidation, and groundwater flow and monitoring. Shield also provides forensic evaluations for commercial and residential structures. Shield provides preliminary opinions based on visual observations only, as well as remediation recommendations and/or designs based on investigations of building materials and/or subsurface soils.

One exploration was for a 100,000+ square foot addition to Aisin Automotive in Clinton, Tennessee. The exploration included over 20+ borings extending to bedrock and was conducted to characterize portions of the site adjacent to the existing facility. The additional work could not interfere with plant operations. Due to the difficult geology that was prone to sinkhole formation, Shield provided recommendations for a deep foundation system.

Shield investigated subsurface conditions at the existing Plasti-Line facility in Clinton, Tennessee. Plasti-Line moved their production facilities into a closed warehouse facility. The move required the addition of new office facilities and a large concrete apron expansion. Shield performed soil test borings around the perimeter of the structure being careful not to damage an intricate matrix of existing utilities. Shield also designed the concrete apron to perform under the weight of fully loaded vehicles.

An interior geotechnical exploration was performed by Shield at the Great Dane manufacturing facility in Huntsville, Tennessee. Great Dane intended to retrofit a portion of the existing facility and required an investigation. Shield utilized a low overhead drill rig on the interior of the warehouse to sample through existing slabs. Shield provided recommendations for new foundations for the new service line as well as a new slab on grade.

Shield provided remediation recommendations for a large sinkhole that formed adjacent to multiple railway lines servicing the Petosky Plastics plant and four other businesses in Morristown, Tennessee. A sinkhole approximately 75 feet by 150 feet in dimension had formed and Shield performed a geotechnical exploration that included soil test borings and geophysical testing to characterize the subsurface conditions at the site. Knowledge obtained from the studies was used to formulate and design repairs to the sinkhole. Shield later supported Petosky in characterizing the subsurface conditions adjacent to the existing facility for a service line addition. The data obtained from drilling complemented by previous studies helped provide foundation and site development recommendations for the new service to accommodate the complex sinkhole prone geology.

e. Construction Materials Testing on Renovated Facilities

Shield maintains and operates its own nationally accredited materials testing laboratory in the Knoxville office. These facilities provide local support to our geotechnical and construction materials testing groups, field personnel, and clients. The laboratory is staffed with experienced engineering technicians and scientists, supervised by licensed professional engineers. The goal of Shield's laboratory is to provide precise and accurate results customized to the client's specific standards and budget in a timely manner. This goal is further achieved by Shield's participation in the soil and aggregate proficiency sample programs.

Shield provided materials testing at the Aisin Automotive Facility in Clinton, Tennessee. During construction of a new service line, Shield observed the excavation of foundations, interior equipment pit excavations, placement of reinforcing steel for concrete and testing fresh concrete for various foundations and walls.

Interior construction materials tests were performed by Shield at the Great Dane manufacturing facility in Huntsville, Tennessee. Prior to placement of concrete for the new service line, Shield observed the exposed subgrade and then later tested fresh concrete during placement. Post placement, Shield's testing services were utilized to determine the cause of spalling and cracking in the slab. The concrete was cored and sampled for laboratory testing. The results of petrographic analysis revealed the concrete supplier had delivered the wrong concrete mix. Shield's analysis was used to assist Great Dane in recovering the costs of the mistake and have repairs made.

Shield consulted as ORNL retrofitted an existing structure in the "7000 area" of the campus. The existing 7018 building was stripped down to its shell and converted from a small warehouse facility to a larger service center. Shield observed footing excavations to confirm design bearing capacities for additions to the original building foundations, subgrades in driveway areas prior to roller compacted concrete placement, and inspected structural steel.

REFERENCES

The QE2 Team has performed work for the following referenced clients on projects similar in scope and/or size to that solicited in the RFQ. QE2 continually receives positive reference letters and accolades from our clients for technically accurate and cost-efficient work.

Southeastern Development Associates – Former Baptist Hospital Site Redevelopment

Chris Senn

Vice President, Southeastern Development Associates

Augusta Corporate Center

2743 Perimeter Parkway, #370

Augusta, GA 30909

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Email: chris.senn@southeastern.com

Robert Caudill, Randy Hamilton – Former UTK Student Center, multiple QE2 UTK projects

University of Tennessee Facilities Services Department

2040 Sutherland Avenue

Knoxville, TN 37921

Telephone: 865-974-5685 (office)

Email: rcaudill@utk.edu, rhamilt6@utk.edu

Shawn Fitzpatrick, P.E. – Former QE2 Lakeshore Mental Health Hospital Site

City of Knoxville, Engineering Department

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Knoxville, TN 37909

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Stephen B. Moore – QE2 UTK West Campus Redevelopment Project

Project Manager & Architectural Department Manager

Jacobs Engineering

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Knoxville, TN 37922

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Dale Dunlap, Architect – Shield geotechnical projects
Green Valley Farm (Architect)
8714 Martin Mill Pike
Knoxville, TN 37920
Telephone: 865-851-9296; 865-599-9818

Gregory S. Campbell, AIA, LEED AP – Shield geotechnical projects, pending QE2 work at UTK
Vice President of Operations
Design Innovation Architects
402 S. Gay Street, Suite 201
Knoxville, TN 37902
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Paul McCall, AIA – QE2 UTK Engineering Services Facility Project
Architect, Project Manager, Senior Associate
McCarty Holsaple McCarty Architects & Interior Designers
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Knoxville, TN 37902
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Peter Ludman, AIA; Lanny Cope, AIA – QE2 UTK Neyland Stadium Project
Cope Architecture
2607 Kingston Pike, Suite 5
Knoxville, TN 37919
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Email: pludman@cope-associates.com

Tennessee Department of Corrections – multiple QE2 projects for the State of Tennessee

Steven Westerman

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Tennessee Department of Corrections

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PERSONNEL QUALIFICATIONS / PROJECT TEAM

QE2 maintains a current State of Tennessee Contractor license. QE2 also has a special Tennessee Corrective Action Contractor license for reimbursable UST work, and company certifications to perform asbestos and lead activities in Tennessee. QE2 staff members also have current Professional Engineer (P.E.) licenses and Professional Geologist (P.G.) licenses, and certifications as Asbestos Inspectors, Asbestos Abatement Project Designers, Lead Inspectors, and TDEC Level I & II Erosion Prevention and Sediment Control Specialists. Copies of the licenses are provided in Attachment B. The proposed Project Team is described below. Knowledgeable, certified, and experienced personnel are the backbone of the QE2 Team's operations. Resumes and pertinent certifications for the listed individuals are provided in the Appendix, and include projects discussed in the earlier sections.

George J. Hyfantis, PhD, P.E., is the Managing Principal of QE2. Before founding the company, he was manager of the regional waste management program for the Tennessee Valley Authority, President of International Waste Management Systems, and Vice President of Environmental Systems Corporation (ESC). Dr. Hyfantis is an adjunct Professor in the University of Tennessee's Civil and Environmental Engineering Department, teaching post graduate Solid and Hazardous Waste Management. Dr. Hyfantis has provided extensive environmental consulting to Federal and State agencies, municipalities, and transit authorities, covering a broad variety of environmental concerns. He currently serves on the TDEC Underground Storage Tanks & Solid Waste Disposal Control Board. As a board member, Dr. Hyfantis helps set environmental policy and regulations and is a subject matter expert regarding the ever-changing federal and state rules.

Dr. George Hyfantis is the principal manager and senior engineer for QE2 and is responsible for the oversight of all staff, project managers and senior level staff. Dr. Hyfantis coordinates the efforts of the Knoxville headquarters to ensure efficient delivery of QE2 services. Founder and President of QE2, Dr. Hyfantis has more than 40 years of experience in the environmental engineering industry. He specializes in site assessments, emergency response, environmental remediation, indoor air quality, waste water treatment system design, and solid and hazardous waste management areas. Dr. Hyfantis is a Certified Hazardous Materials Manager and is co-author of the Certified Hazardous Materials Manager's Manual (1987). His experience encompasses a wide range of environmental

activities that have been conducted on a broad base of contracts. Dr. Hyfantis will be the main point of contact for the QE2 Team.

Key Project Team Members. The primary technical experts for hazardous materials tasks include Terence Davis, P.G., as hazardous materials expert and licensed Asbestos Inspector and Abatement Designer; and Jessica Lindbom as hazardous materials expert, licensed Asbestos Inspector and Lead-based Paint Inspector. These individuals have led and participated in many similar jobs for QE2, and are seasoned professionals who conduct fieldwork and reporting efficiently. They both are comfortable and considerate working within active facilities, and they have an excellent understanding of the City of Knoxville processes and access requirements. They also work comfortably with the utility managers, building administrators, and maintenance staff who provide access to restricted areas, and insider knowledge of mechanical systems and renovation events. QE2 technical expert Matt Teglas, P.G., has extensive experience in site investigation, and assessment and remediation of subsurface soil and groundwater contamination. If any soil contamination or petroleum tank issues are encountered during demolition or site work, QE2 has the experience to provide reliable recommendations and solutions. Resumes for Key Project Team Members, and individual certifications to perform asbestos, LBP, engineering, and geology work in the State of Tennessee are provided in the Appendix.

Terence Davis, P.G. is a Tennessee-licensed Asbestos Inspector and Abatement Project Designer, and Tennessee Professional Geologist. Mr. Davis will be the abatement Project Designer and prepare the abatement cost estimates and Specifications for asbestos and other miscellaneous hazardous materials which must be removed from the structures prior to impact or disturbance from renovation or demolition. Mr. Davis is trained in the areas of asbestos, lead, other hazardous materials assessments; abatement planning and oversight; and demolition. He has developed extensive knowledge of multi-structure, multi-story building systems and materials while conducting years of hazardous materials testing and abatement, and indoor air quality work. He is familiar with complex utility systems and steam tunnel configurations. Mr. Davis is the Designer and primary cost estimator for QE2 abatement work and he has extensive experience creating accurate budgets for multi-structure projects. His recent work includes survey, abatement design, and oversight at the former riverfront Baptist Hospital site (demolition of 8 to 10 multi-story buildings); survey, design, and oversight at Lakeshore Park (demolition of more than 20 buildings at an active park); abatement oversight at the McClung Warehouses demolition; survey, abatement design, and oversight for the UTK West Campus Redevelopment Project (five structure surveys and three large dormitory abatement and demolitions); survey, LBP testing, and abatement design for the Knoxville Coliseum and Civic Auditorium complex; survey, abatement design, and oversight for the UTK Student Center (three structures abatement and demolition in an active campus area); survey and abatement design for the Western Heights housing project renovations and demolitions (multiple occupied structures); survey, abatement design, and oversight for the UTK Science Laboratory Facility (demolition of three

structures); survey, abatement design and oversight for the Oak Ridge Applewood Apartments (abatement and demolition of thirteen Federal government built units in the 1940's); survey and abatement design of portions of the Neyland Stadium site for the future renovation project; survey of more than 10 structures at the UTK Concord Street site; and survey, abatement design, and abatement oversight at the UTK Engineering Services Facility Site (demolition of three structures).

Raymond Tant, P.E. has provided engineering services on numerous geotechnical explorations and foundation investigations, including multi-story reinforced concrete and steel structures, small to large water and wastewater treatment plants, stadium expansions and cellular towers. His duties include drilling and laboratory coordination, evaluation and analysis of drilling and laboratory data, and preparation of geotechnical reports, including foundation recommendations. Mr. Tant has been involved in conducting field testing services for construction projects ranging from small commercial structures to multi-story office buildings and football stadium expansion projects. Field services have included caisson inspection, reinforcing steel inspection and soils testing. Mr. Tant currently manages the Construction Testing Services Group and reviews daily logs and field reports for field engineers. Several projects have utilized deep foundation systems such as caissons, micro-piles, and driven piles. Mr. Tant also reviewed caisson logs and micropile logs as well as soil fill density test results and concrete test results, for many sites. Mr. Tant's responsibilities included coordinating field activities for the geotechnical subsurface exploration and investigation of a major stadium. He was responsible for coordinating the investigation including utility clearances, boring layout, and drilling activities. Other responsibilities included visually classifying soil and rock samples and assigning appropriate strength parameters, as well as conducting laboratory tests such as triaxial compression to unconfined compression and consolidation. Mr. Tant also has experience in construction testing and monitoring and drafting geotechnical exploration and investigation reports. Mr. Tant is responsible for acting as the liaison between the represented firm and the client, while tracking and managing project activity. Management responsibilities included delegating geotechnical and environmental project duties to the appropriate individual and tracking progress.

Justin Goss, P.E. is Shield's Project Manager and Senior Engineer for landfill expansions and closures, Geotechnical Engineering and explorations, construction materials testing, and construction quality assurance/ quality control (CQA/CQC) of earthwork, foundations, concrete, rock, and structural steel. Mr. Goss has more than 10 years of experience in the geotechnical engineering profession. His career began as a staff geotechnical professional which included providing CQA/CQC field and office management of new landfill cell construction and cap closures throughout the southeast region. Mr. Goss has also managed numerous geotechnical explorations consisting of small residential structures, to commercial/industrial buildings, substations, cell towers, sinkhole exploration and assessments, and large land developments. Mr. Goss also has training and field experience in Construction

Materials Testing and Special Inspections per the International Building Code, Chapter 17 for small and large commercial and industrial building construction projects. Mr. Goss currently serves as the geotechnical/construction materials testing project manager. Field coordinating responsibilities have included utility clearances, boring layout, and scheduling subsurface drilling. Other responsibilities have included visually classifying soil and rock samples and assigning appropriate strength parameters, as well as conducting general to complex laboratory tests. Mr. Goss' experience in construction materials testing includes monitoring shallow and deep foundation system installations such as driven H-pile, vibropiers, geopiers, micropiles, and caissons. Inspections include documenting the size of the foundation, observing reinforcing bar size and arrangement, and determining soil bearing capacity prior to casting of concrete. Other experience includes monitoring shallow foundation systems, fresh concrete testing, subgrade stabilization, including the use of geo-fabrics, geogrids, flowable fill, proofrolling, and compacted fill placement. Mr. Goss currently manages, coordinates, and training of technicians for field observations and reviews daily logs and field reports for construction activities and observations. His experience also includes borrow studies for structural fill, low permeability soils, and protective cover soils for use in landfill construction utilizing borings and test pits, settlement calculations for post landfill construction, and interface friction calculations for compacted soil clay liners and geosynthetic liners.

Jessica Lindbom is a Tennessee-licensed Asbestos Inspector and Lead Paint Inspector at QE2. Ms. Lindbom will aid Mr. Davis in assessment, quantification, abatement oversight, and cost estimating. She has performed hundreds of hazardous materials assessments during the course of her career and has developed extensive knowledge of building systems and materials. Ms. Lindbom routinely assists in materials quantifications and cost estimations and has experience with numerous related government funded projects including multiple-structure projects at mental health facilities, hospitals, housing projects, prisons, and schools and universities. Her recent work includes hazardous materials survey work for the existing structures at the Engineering Services Facility and Neyland Stadium sites, at the former Baptist Hospital site (10 to 12 multi-story buildings), the McClung Warehouses, Lakeshore Park (more than 20 buildings), Western Heights housing project (multiple occupied structures), the UT Support Services Complex, the UTK West Campus Redevelopment Project (occupied dorm units), UTK Melrose Hall, the College of Nursing, Neyland Stadium, the UTK Student Center and many others.

Matt Teglas, P.G., is a Tennessee Professional Geologist at QE2. He has expertise in areas of demolition, remediation of soil contamination issues, disposal options and associated permitting. He has extensive knowledge of issues related to soil and groundwater contamination and personally oversaw work at several UTK sites. He was also active in UST and Brownfields compliance issues at the multi-structure former Lakeshore Mental Health Hospital site, and at the former Baptist Hospital

site where soil contamination concerns were managed. He regularly completes yearly reports for small and large quantity hazardous waste generators, and can generate and maintain the necessary documentation for the client to complete any required waste generation reports, if required. He recently performed Phase II ESA subsurface soil testing work at the UTK Engineering Services Facility and Concord Street sites and he is familiar with potential soil contamination issues related to past petroleum storage, coal, and foundry operations.

Joseph Matalucci is highly experienced in construction and demolition planning, estimating, construction monitoring, field observation, and reporting. Mr. Matalucci's QE2 expertise includes soil compaction and verification, geomembrane use, and cost effective site rehabilitation and design as may be required to make a site suitable for future construction or other uses. Mr. Matalucci effectively works with contractors to establish goals in the initial project development phase which limits the risks associated with project overruns due to changing objectives. He has extensive experience overseeing demolition and site restoration activities, and has completed the TDEC Level I Training Course, Fundamentals of Erosion Prevention and Sediment Control for Construction Sites.

James Law is the Senior Engineering Technician at Shield. Mr. Law has performed plant inspections during the construction periods and coordinated required construction material testing between the project and laboratory. He has provided construction engineering inspection and oversight of highway grade work and density testing of soils and dense aggregate base; various utility construction operations of water, sewer, gas and storm drainage; rebar inspection of various onsite structures; concrete testing during concrete pours; and gradation of stone aggregate as required. For the City of Knoxville-Blount Greenway, he provided construction engineering inspection and full project oversight including grading, drainage, gabion wall construction, and a pre-cast pedestrian bridge with cast in-place abutments and decking for nearly two miles of greenway construction. Daily duties included inspection of contractors' work, implementation of EPSC measures, and inspection of materials for quality assurance with the plans and specifications. Mr. Law has provided onsite quality control for concrete, asphalt, MSE walls, and deep foundation inspection. Concrete testing for the 28,000 cubic yards of concrete required for the bridges required multiple crews working days and nights. Mr. Law has provided field and laboratory oversight of the technicians involved in construction of a new haul roads at a TVA site and worked with TVA construction managers of the project with testing of materials in the field and lab, along with coordinating technicians for field testing when required. He has provided onsite testing of the soils, stone, and geotextiles for haul roads; observed proofrolling before placement of structural fill; provided written procedures for work; and provided final reports summarizing the work completed and all test results. Mr. Law has performed construction oversight for the reconstruction of a slope failure of a Drilling/Fracking well pad, including the construction of a large stone buttress with drains at the bottom of a long slope.

These professionals possess the skills and training required to ensure success in meeting project goals, schedules, and budgets for complex projects. Other QE2 Team staff will assist as needed in these and other tasks that arise during the course of this project. Resumes and pertinent certifications for the listed individuals are provided in the Appendix, and include projects discussed in the earlier sections.

APPENDIX

Resumes



George J. Hyfantis, Jr., Ph.D., P.E., CHMM
Quantum Environmental & Engineering Services, LLC
President – Managing Principal / Senior Engineer

Years in Environmental Engineering and ES&H 40
Years with Company (including predecessors) 25

EDUCATION:

Ph.D., Environmental Engineering, Vanderbilt University, Nashville, Tennessee, 1977
M.S., Radiation Chemistry, West Virginia University, Morgantown, West Virginia, 1973
B.S., Chemistry, Waynesburg, Pennsylvania, 1970

REGISTRATIONS:

Registered Professional Engineer Tennessee (14150)
Registered Professional Engineer North Carolina (9928)
Registered Professional Engineer Alabama (18620)
Member of the Tennessee Underground Ground Storage Tank and Solid Waste Control Board
Certified Hazardous Materials Manager, Master Level
American Society of Civil Engineers
Editorial Advisory Board of Journal of Cleaner Production
Institute of Hazardous Materials Managers

EMPLOYMENT HISTORY:

Quantum Environmental & Engineering Services, LLC, 2003-Present, President,
Environmental Systems Corporation, 1990 – 2003, Vice President
Advanced Waste Management Systems, 1986 – 1990, President
University of Tennessee, Knoxville, Civil Engineering Department, 1977-Present, Adjunct Professor
Waste Management Program, Tennessee Valley Authority, Office of Natural Resources and Economic
Development, 1983-1985, Manager
Solid and Hazardous Waste Management Program Office of Natural Resources, Tennessee Valley
Authority, 1977-1980, Program Manager
Environmental Assessment and Compliance Staff, Tennessee Valley Authority, 1976-1977,
Environmental Engineer

RELEVANT EXPERIENCE:

Founder and Principle of Quantum Environmental & Engineering Services, LLC, (QE2) Dr. Hyfantis has over 40 years of experience in hazardous materials management. He is the managing principle for QE2 and is responsible for the oversight of all the QE2 staff, including assignment of staff to specific projects and technical overview of project managers and senior level staff. He is a **Certified Hazardous Materials Manager** and is co-author of the Certified Hazardous Materials Manager's Manual (1987). His experience encompasses a wide range of environmental activities that have involved:

- RCRA Waste Management
- Demolition Design
- Hazardous Materials Management
- Lead contamination identification and remediation
- CERCLA (Superfund) response and implementation
- Indoor Air Quality assessments



- Brownfield Assessments
- NEPA Assessments
- PCB contamination
- Stream Restoration Design

Dr. Hyfantis has conducted extensive consulting services for Foreign Governments, U.S. Federal and State agencies, municipalities, and transit authorities, covering a broad variety of environmental concerns. Before founding QE2, he was Vice President of Environmental Systems Corporation, President of another international waste management company and Manager of the regional waste management program for the Tennessee Valley Authority. He also serves as an Adjunct Professor in the Civil and Environmental Engineering department at the University of Tennessee.



Terence L. Davis, P.G.

QUANTUM ENVIRONMENTAL & ENGINEERING SERVICES, LLC

Sr. Environmental Specialist / Geologist

EDUCATION:

B.S., Geology, Memphis State University, Memphis, Tennessee, 1983

Completed Masters Coursework, Vanderbilt University, Nashville, Tennessee, 1985

ENVIRONMENTAL EMPLOYMENT HISTORY:

Quantum Environmental & Engineering Services, 2008-Present

Tusquittee Trading Company, LLC, Hayesville, NC, 2005-2008

Theta Technologies, Inc., Oak Ridge, Tennessee, 1995-2005

PEER Consultants, P.C., Oak Ridge, Tennessee, 1993-1995

Env. Manager / Owner

Sr. Geo. / Mgr. Env. Services

Geologist / Prog. Manager

PROFESSIONAL REGISTRATIONS:

Registered Professional Geologist, Tennessee (TN 3196)

Registered Lead Inspector, Tennessee, 2002-2005 (TN LBP2002-990-10351)

Licensed Asbestos Inspector, Tennessee (A-I-46113-69117)

Licensed Asbestos Project Designer, Tennessee (A-PD-46113-72846)

SPECIAL TRAINING & QUALIFICATIONS:

Initial EPA/AHERA Asbestos Inspector, TEI 1998 & 2002, Resolution 2008

Mold Assessment & Remediation, TEI, 2008

Initial EPA/AHERA Asbestos Project Designer, TEI, 2011

Initial EPA Lead Inspector, EPA/TSCA 40 CFR Part 745, No. 1177, Environmental Institute, 1998, 2002

National Lead Assessment and Abatement Council (NLAAC), Lead Inspector, No. 33-US-33000177, 1998

40-hour Management of UST Systems, Cert. No. 1080, Georgia Institute of Technology, 1998

40-hour OSHA 29 CFR 1910.120 (current)

Soil and Groundwater Corrective Remediation Technologies Seminar, UT-Chattanooga, 1994

EPA/AHERA Inspector Refresher, current

EPA/AHERA Project Designer Refresher, current

RELEVANT EXPERIENCE:

Mr. Davis is currently a Senior Environmental Specialist for QE2. In this role, he supervises and conducts a comprehensive range of environmental services, including hazardous material assessments (asbestos, lead-based paint, mercury-containing equipment, etc.), asbestos and hazardous materials abatement design, and abatement oversight. Mr. Davis has been involved with several hundred pre-renovation and pre-demolition hazardous materials assessments and has written design plans and Specifications and/or provided abatement oversight for private residential & commercial, State, and municipal facilities including the 11-structure, multi-story former Knoxville Baptist Hospital; the 22-structure, multi-story



former Lakeshore Mental Health Institute; the UT Engineering Services Facility site; the UT West Campus Redevelopment Project which includes assessment and demolition of 3 to 5 multi-story housing towers; the 300,000-SF+, multi-structure UT University Center project; the UT Science Laboratory Facility site; the Boys & Girls Club survey and demolition; housing units at the Tennessee School for the Deaf; the 8-story McClung Warehouses; the UT Knoxville Facilities Services Complex; the UT Knoxville Concord Street Complex; National Guard, college, and prison sites; public housing sites; and residential units for the City of Oak Ridge. He has extensive experience with multiple story, multiple structure sites of mid-century, "asbestos-era" construction, including hazardous materials assessment, abatement planning and design, and aiding in building demolition design and oversight. He was also part of the team which performed asbestos inspections and surveys campus-wide at UT Knoxville.

Mr. Davis has also conducted indoor air quality and mold investigations and abatement design and oversight, underground and aboveground storage tank compliance, environmental/health and safety regulatory compliance audits, industrial hygiene and exposure assessments, Environmental Assessments, NEPA assessments, Categorical Exclusions, Phase I ESAs, and environmental related design and construction. Mr. Davis has also served as the Senior Project Manager for the Statewide Environmental Services contract with the State of Tennessee, and has managed the day-to-day operations of a contract including several hundred environmental projects.

Mr. Davis has 25 years of experience in environmental and business management and knows well the important of budgets and project schedules. He has conducted and overseen asbestos and lead paint inspections and waste management, mold assessment, SPCC planning, permitting, demolition, PCB/pesticide investigation and remediation, RCRA waste management, storm water/NPDES sampling and reporting, Phase I and II assessments, and landfill investigations. Mr. Davis has expertise in all UST-related activities including soil boring advancement and monitoring well construction, soil and groundwater testing, soil vapor surveys, aquifer testing, UST testing and operation, UST removal and closure, treatment system O & M, free product recovery, exposure assessments, and remediation system design and construction. Mr. Davis has also prepared and/or certified all applicable UST-required reports. His extensive experience as a State Consultant and State Contractor give Mr. Davis the knowledge to work within public sector administration and funding mechanisms.

In his previous environmental management position, Mr. Davis was the project manager for Theta's Region I State Storage Tank Program (SSTP) Contract with the State of Tennessee, Department of Finance and Administration, and for Theta's Leaking UST (LUST) Trust Fund Contract with the Tennessee Division of UST's. As manager of these contracts, he managed petroleum-contaminated sites at State-owned and State-managed facilities. As Manager of Theta's Environmental Services Department, Mr. Davis coordinated the staffing, budgeting, and scheduling for all State, local, public and private environmental clients, which included managing municipal and State projects and ensuring that work was conducted within budget constraints.



**C. RAYMOND TANT, P.E.
PRINCIPAL ENGINEER**

EDUCATION:

M.S., Civil Engineering, University of Tennessee, 1996
B.S., Civil Engineering, University of Tennessee, 1994

CERTIFICATIONS:

Professional Engineer: TN, VA, GA & KY

CAREER SUMMARY:

Shield Engineering 2004-present

Law Engineering & Environmental Service's (LAW)
1997-1998, LAWGibb 1998-2001, Law Testing &
Solutions 2001-2002, Mactec Engineering & Consulting
2002-2004

S&ME – Summer 1994

Mr. Tant started his career with Law Engineering & Environmental Service's (LAW) Nashville, Tennessee branch in January 1997 and later transferred to their Knoxville branch the same year. During his tenure at LAW, Mr. Tant was fortunate enough to become involved in several large and high profile projects such as the Knoxville Convention Center. Over time Mr. Tant served as the geotechnical and materials testing department manager from the fall of 1999 until May 2004. In 2004, the opportunity to open a new branch office for Shield Engineering, Inc. was afforded Mr. Tant as well as a becoming a principal in the company.

EXPERIENCE SUMMARY:

Foundation Investigations/Design

Mr. Tant has provided engineering services on numerous geotechnical explorations and foundation investigations, ranging from multi-story reinforced concrete and steel structures, small to large water and wastewater treatment plants, stadium expansions and cellular towers. His duties include drilling and laboratory coordination, evaluation and analysis of drilling and laboratory data, and preparation of geotechnical reports, including foundation recommendations.

Construction Testing and Monitoring

Mr. Tant has been involved in conducting field testing services for construction projects ranging from small

commercial structures to multi-story office buildings and football stadium expansion projects. Field services have included caisson inspection, reinforcing steel inspection and soils testing. Mr. Tant currently manages the Construction Testing Services Group and reviews daily logs and field reports for field engineers.

PROJECT EXPERIENCE:

Mr. Tant's experience includes the coordination of field activities and the scheduling of field personnel such as engineers and technicians for many projects. Several projects noted below have utilized deep foundation systems such as caissons, micro-piles, and driven piles. Mr. Tant also reviewed caisson logs and micropile logs as well as soil fill density test results and concrete test results, for many sites.

Geotechnical Subsurface Exploration and Investigation

Mr. Tant's responsibilities included coordinating field activities for the geotechnical subsurface exploration and investigation of a major stadium. Mr. Tant was responsible for coordinating the investigation including utility clearances, boring layout and drilling activities. Other responsibilities included visually classifying soil and rock samples and assigning appropriate strength parameters, as well as conducting laboratory tests such as triaxial compression to unconfined compression and consolidation. Mr. Tant also has experience in construction testing and monitoring and drafting geotechnical exploration and investigation reports.

Management

Mr. Tant was responsible for acting as the liaison between the represented firm and the client, while tracking and managing project activity. Management responsibilities included delegating geotechnical and environmental project duties to the appropriate individual and tracking progress.

AFFILIATIONS:

- ASCE Student Member 1993
- ASCE University of Tennessee Student Chapter President 1993-1994

- ASCE Southeast Regional Student Conference at the University of Tennessee – Chairperson 1994-1996
- ASCE Knoxville Branch Secretary/Treasurer 2003-2004, Vice-President 2004-2005, President 2005-2006
- ASCE Tennessee Section Vice President (2007-2008), President Elect– (2008-2009)
- Chi Epsilon – National Civil Engineering Honor Fraternity, Inducted 1993, Marshall 1995-1996

PUBLICATIONS:

- Drumm, E.C., Mauldon, M. and Tant, C.R. (1998) "Stabilization of Coal Mine Waste with Soil Nails" Ground Improvement, Thomas Telford Publishing, UK, Vol. 2, pp 147-156.
- Drumm, E.C., Tant, C.R., Mauldon, M. & Berry, R.M. (1996). Instrumentation of a nailed mine-waste slope. Proc. of the International Symposium on Earth Reinforcement, Ochiai, Yasufuku and Omine Editors, Balkema, pp. 741-752.
- Tant, C.R., Drumm, E.C., Mauldon, M., Berry, R.M. (1996) "Application of Soil Nails to the Stability of Mine Waste Slopes" Proceedings, Annual Meeting of the American Society for Surface Mining and Reclamation, Knoxville, TN, pp 282-293.
- Tant, C.R., Drumm, E.C. Mauldon, M. and Berry, R.M. (1995) "Application of Earth Inclusions for Slope Stabilization" Southeastern Transportation Geotechnical Engineering Conference, Huntsville AL, October.

CAREER PROJECTS (PE-Served as Engineer)

University of Tennessee

Neyland Stadium East Skybox (PE)
 Neyland Stadium South End Zone Scoreboard
 Thornton Academic Facility
 Student Athletic Center Additions to UT
 Alumni Gymnasium Renovations
 Boathouse
 Forensic Investigation of UT Hoskins Library
 Estes Kefauver Wing (PE)
 Forensic Investigation of Thompson Boling
 Arena West Ramp Settlement (PE)
 Agricultural Campus Additions
 Knoxville Place (12 Story Dormitories) (PE)

Knoxville Convention Center Preliminary and Final
 Geotechnical Report

Proposed Cumberland Avenue and Poplar St. Parking
 Garage

TVA Gas Turbine Sites in Seven States

SNS Target Building, CUB, and Utilities Installation (PE)

Sans Guide Hall

CROET Horizon Center

HFIR Building

Cumberland Gap, Chuckey Doak & Claiborne Co. HS
 (PE)

East TN Historical Center Additions (PE)

Ripley's Aquarium of the Smokies

HWY 321 Parking Garage

ORNL - East Campus Additions (300,000 sf) (PE)

KUB Mark B. Whitaker Water Treatment Plant 4 mil.
 gallon tank and pump station (PE - CMT)

Church Street United Methodist Church Proposed
 Parking Garage

Tennessee Valley Authority (TVA) Condensate Tanks –
 seven sites in Southeast U.S.

TVA Kingston Steam Plant Coal Unloading Facility

TVA Allen Coal Crushing Facility

TVA Kemper County, MS Gas Turbine Facility

Pro2Serve Corporate headquarters (PE)

The Bluff at German Creek (PE)

Pellissippi State Technical College Additions (PE)

Cherokee Health Systems Corporate Headquarters

Hope VI – 40 Sites

Tennessee State Office Building University Avenue (PE)

Rohm and Haas Warehouse Additions

Rohm and Haas Storage Tank Additions

Rohm and Haas Storage Fire System Building

Fort Sanders Hilton Garden Inn (PE)

Downtown Hampton Inn (PE)

Proposed Knox County Criminal Justice Center

Vifan factory Additions (over 500k sf)

Millennium Square (PE)

Coca-Cola Distribution Center Additions

Blount Memorial Hospital Parking Garage (PE)

Denso 101, 301, 501 & 801 Additions (PE)

South College New Campus (PE)

Pepsi-Cola Warehouse Additions

Homewood Suites – Turkey Creek

St. Mary's Parking Garage

Oak Ridge Demolition Landfill VI (PE)

PERSONAL AFFILIATIONS

- University of Tennessee National Alumni Association
 Knox County Chapter Board of Directors – Elected
 Member 2004, Treasurer 2006-2007, Secretary 2007 –
 2008, Vice-President 2008-2009, President Elect
 2009-2010, President 2010-2011.
- Knoxville Development Partners Advisory Group
 (DPAG), Zoning & Subdivision Committee - 2005



**JUSTIN A. GOSS, P.E.
SENIOR PROJECT ENGINEER**

FIELDS OF SPECIALIZATION:

Project Manager/Engineer for CQA/CQC landfill expansions and closures, Geotechnical Engineering and explorations, Construction Materials Testing, QA/QC of earthwork, foundations, concrete, rock, and structural steel.

EDUCATION:

B.S., Civil Engineering, University of Tennessee, Knoxville – May 2007

CAREER SUMMARY

Bunnell-Lammons Engineering, Inc. 2007 - 2008
ECS Limited, LLC 2008 - 2009
Shield Engineering, Inc. 2009 - Present

CERTIFICATIONS:

- Professional Engineer – TN (2012)
- 40-Hour HAZWOPER
- OSHA 30-Hour Construction
- ACI Level I – Concrete
- TDOT Class 2 & 3 Concrete Tech
- TDOT Ready Mix Plant Operator Cert
- Nuclear Density/Moisture Gauge Hazardous Material Transportation
- Confined Space Entry

EXPERIENCE SUMMARY:

Mr. Goss has over 10 years experience in geotechnical engineering profession. His career began as a staff geotechnical professional which included providing CQA/CQC field and office management of new landfill cell construction and cap closures throughout the southeast region. Mr. Goss has also been managed numerous geotechnical explorations consisting of small residential structure, to commercial/industrial buildings, substations, cell towers, sinkhole exploration and assessments, and large land developments. Mr. Goss also has training and field experience in Construction Materials Testing (CMT) and Special Inspections per the International Building Code, Chapter 17 for small and large commercial and industrial building

construction projects. Mr. Goss currently serves as the geotechnical/CMT project manager.

PROJECT EXPERIENCE:

Geotechnical Explorations

Experience includes coordinating field activities for geotechnical exploration projects. Field coordinating responsibilities include utility clearances, boring layout, and schedule subsurface drilling. Other responsibilities included visually classifying soil and rock samples and assigning appropriate strength parameters, as well as conducting general to complex laboratory tests.

Construction testing and monitoring

Experience includes monitoring shallow and deep foundation system installations. Deep foundations systems include driven H-pile, vibropiers, geopiers, micropiles, and caissons. Inspections include documenting the size of the foundation, observing reinforcing bar size and arrangement, and determining soil bearing capacity prior to casting of concrete. Other experience includes monitoring shallow foundation systems, fresh concrete testing, subgrade stabilization, including the use of geo-fabrics, geogrids, flowable fill, proofrolling, and compacted fill placement. Mr. Goss currently manages, coordinates, and training of technicians for field observations and reviews daily logs and field reports for construction activities and observations.

Landfill Construction COA/COC

Experience includes field activities within landfill cell construction; monitored mass excavations and structural fill applications, processing of low permeability soil/clay liners, monitored and documented geosynthetic clay liners (GCL) and HDPE geomembrane deployment, monitored destructive and non-destructive geomembrane seam testing, monitored protective cover and leachate collection installation, monitored pressure testing of solid leachate piping.

Experience also includes borrow studies for structural fill, low permeability soils, and protective cover soils for use in landfill construction utilizing borings and test pits. Settlement calculations for post landfill

construction. Interface friction calculations for compacted soil clay liners and geosynthetic liners.

PROJECT EXPERIENCE:

Geotechnical Explorations

- The Falls Development Bristol VA
- Gateway Downtown Knoxville
- ORNL Max Labs
- ORNL Transitional Research Building
- ORNL 7000 Buildings
- ORNL 5510A Forensic Exploration
- ORNL 1.5 MG Water Tank
- ORNL Parking Garage II
- SNS Maintenance Building
- Dandridge Baptist Church Addition

Construction Materials and Testing

- Knoxville Mark B. Whitaker 4MG Storage Tank
- ORNL Modernization of Laboratory Facilities
- ORNL Max Labs
- SNS Maintenance Facility Building
- ORNL HFIR Maintenance Facility Building
- ORNL MOC Building
- Dandridge Baptist Church Addition
- ZTA Sorority House – Knoxville, TN

Landfill Construction COA/CQC and Materials Conformance Testing

- Stones Throw MSW Landfill, Alabama
- Foothills Regional Landfill, North Carolina
- Greenville C&D Landfill, South Carolina
- Stephens MDS C&D Landfill, Georgia
- Uwharrie Regional Landfill, North Carolina
- Upstate MSW Landfill, South Carolina
- Cedar Grove MSW Landfill, Georgia
- Nassau County C&D Landfill, Florida
- ORNL – SWSA I and III RCRA Cap, Tennessee

Landfill borrow studies and geotechnical explorations

- Upstate Regional Landfill, North Carolina
- Stones Throw MSW Landfill, Alabama
- Stephens MDS C&D Landfill, Georgia
- Uwharrie Regional Landfill, North Carolina
- Cedar Grove MSW Landfill, Georgia
- Eagle Point MSW Landfill, Georgia
- Rodgers Lake Landfill Transfer Station, Georgia
- Wolf Creek Landfill, Georgia
- ORNL – SWSA I and III RCRA Cap, Tennessee

AFFILIATIONS & TRAINING:

- American Society of Civil Engineers (ASCE)
Knoxville Chapter (Past President 2012-2013)
- TRI Short Course on CQA/CQC of compacted clay liners and geosynthetic liner installation.
- University of Madison Wisconsin – Sanitary Landfill Design short course



Jessica Lindbom

QUANTUM ENVIRONMENTAL & ENGINEERING SERVICES, LLC

Biologist/Senior Environmental Technologist

EDUCATION:

B.S., Biology and Marine Science, University of Alabama, Tuscaloosa, Alabama 1988

REGISTRATIONS:

Asbestos Inspector, Tennessee, A-1-58301-70735

Lead Based Paint, Inspector - Tennessee, TNLBP2010-2277-50281

OTHER PROFESSIONAL QUALIFICATIONS:

Wetland Identification and Delineation, Water Quality Standards, Habitat Assessment and Rapid Bioassessment Protocols, 40 hour OSHA Hazardous Waste Operations Training, Hazardous Waste Site Sampling, Radiation Worker Training, Radiological Response Team Member, and ASTM E1527-97 Standard Practice for Environmental Site Assessments

EMPLOYMENT HISTORY:

Quantum Environmental & Engineering Svcs., LLC	2009 – Pres.	Sr. Environmental Technologist
Terracon Consultants, Inc., Nashville, TN	1999 – 2009	Project Manager/Biologist
ATC Associates, Inc., Nashville, TN	1996 – 1999	Project Manager/Biologist
TDEC/Dept. of Energy Oversight, Oak Ridge, TN	1991 – 1996	Supervisor, Division of Environmental Monitoring
Fulton County Env. Health Dept, Atlanta, GA	1989 – 1991	Environmental Specialist
Newfound Harbor Marine Inst., Big Pine Key, FL	1989	Instructor

RELEVANT EXPERIENCE:

Ms. Lindbom has provided consulting services for a variety of clients from the private and public sectors including Fortune 500 retail corporations, petroleum distributors, local and state government, nationwide assisted living facilities, national banking, financing, communication, and mining corporations. These services included project management, and/or surveys with Phase I/Phase II ESAs, Asbestos and Lead-based Paint inspections, hazardous materials inventories, asbestos abatement oversight, air quality assessments, and radon testing. Ms. Lindbom has provided consulting for wetland determinations and/or delineations, threatened and endangered species surveys and NEPA Environmental Assessments and reviews.

Ms. Lindbom is currently an Environmental Specialist for QE2. In this role, she supervises and conducts a comprehensive range of environmental services, including hazardous material assessments (asbestos, lead-based paint, mercury-containing equipment, etc.) and abatement oversight. Ms. Lindbom has been involved with well over 100 pre-renovation and pre-demolition hazardous materials assessments and has provided abatement oversight for private, State, and municipal facilities including the multi-structure, multi-story former Knoxville Baptist Hospital, the multi-structure, multi-story former



Lakeshore Mental Health Institute, the future UT Engineering Services Facility site, the 8-story McClung Warehouses, the UT West Campus Redevelopment Project which includes assessment and demolition of 5 to 7 housing units, the UT University Center project, the Boys & Girls Club survey and demolition, multiple structures at the Brushy Mountain Penitentiary, the multi-structure KCDC Western Heights housing complex, and residential units for the City of Oak Ridge. She has extensive experience with multiple story, multiple structure sites of mid-century era construction, including hazardous materials assessment, and abatement oversight. She was also part of the team which performed asbestos inspections and surveys campus-wide at UT Knoxville.

While working for the State of Tennessee, she supervised a staff of five environmental specialists in environmental sampling and compliance monitoring on the Department of Energy (DOE), Oak Ridge Reservation. During that time she also served as a statewide technical program specialist, providing consultative or educational services in the area of sampling, methodologies, or development of programs. She supervised and participated in performing environmental risk studies of pollution and its effects; developed standards and prepared reports of findings submitted to the DOE and the public.



Matthew S. Teglas, P.G.

Quantum Environmental & Engineering Services, LLC

Senior Geologist

EDUCATION:

B.S., Geology, University of Tennessee Knoxville, 1996

B.A., Environmental Studies, University of Tennessee Knoxville, 1996

Geology Field Study, University of Memphis, 1996

Sigma Gamma Epsilon Earth Science Honors Society

REGISTRATIONS AND QUALIFICATIONS:

Prof. Geologist: Tennessee (TN4202); Kentucky (KY2539); Alabama (AL1372); Georgia (PG002131)

Phase I Environmental Site Assessor

SPCC and Industrial SWPPP trainer

Department of Justice NEPA training

UST Compliance Inspector

ISO 14001 and 9001 Auditing and Training procedure implementation

40 Hour HAZWOPER Training, with current 8-hr Refreshers

30 Hour OSHA Construction Training

DOT Hazmat Training

8 Hour RCRA Training

Confined Space Training

Bloodborne Pathogens Training

Hazardous Communications Training

RELEVANT EXPERIENCE:

Mr. Teglas has over 20 years' experience in the environmental and engineering consulting industry. He currently manages QE2's Field Services Group, overseeing the activities of staff environmental scientists and technicians. Mr. Teglas has conducted and managed numerous subsurface site investigations, Phase I and II Environmental Site Assessments, Voluntary Cleanup, Oversight and Assistance Program (VOAP) and Brownfield investigations, NEPA assistance, groundwater and soil remediation designs, UST removal, UST compliance inspections, hazardous materials assessments, and construction oversight. He has provided UST and subsurface contamination consulting for hazmat surveys and demolition projects.

Mr. Teglas' primary responsibilities consist of management of all groundwater and soil sampling activities for QE2. He provides services for landfill projects ranging from hydrogeologic investigations for permits, leachate system design and installation oversight, monitoring well installation, groundwater monitoring programs, groundwater assessment plans, and providing sampling and analysis plans for groundwater monitoring. The projects were located in various geologic settings including known karst areas. Mr. Teglas is also the project manager for all sites in the VOAP and Brownfield programs, including



sites in Knoxville, Johnson City, and Chattanooga, Tennessee. Work on these sites has included development of Remedial Action Plans, groundwater use surveys, field reconnaissance, geologic mapping, monitoring well installation and sampling, dye-tracing studies, groundwater basin identification and flow evaluation, plus statistical analysis of analytical data. His work at the former Baptist Hospital site in downtown Knoxville, and recent work at East Tennessee State University has included oversight and planning to address potential soil contamination issues from historical operations. He was also the field geologist for Phase II ESA sampling at the Engineering Services Facility site in early 2017.

Mr. Teglas is also the Project Manager for a Department of Defense (DOD) site in Millington, Tennessee. Work at the DOD site includes monitoring and remedial efforts at two onsite solid waste management units (SWMU). This work includes long term groundwater monitoring, SWMU maintenance, in situ bioremediation design and installation to address solvents in groundwater, RCRA permitting, and NPDES permitting.



JAMES A. LAW
SENIOR ENGINEERING TECHNICIAN

EDUCATION:

Coursework, Architectural Design, Cleveland State Community College.
Coursework, General, Columbia Military Academy

CERTIFICATIONS:

ACI Concrete I
NICET IV, : Soils, Concrete, Asphalt
NICET II, Highway Materials / Construction Material Testing
HAZWOPER 40 Hour
MSHA annual refresher
OSHA 10 Hour Construction Safety and Health

CAREER SUMMARY:

Shield Engineering, Inc. – Senior Engineering Technician, Field/Lab Construction Supervisor, 2015 - Present

AMEC Foster Wheeler Environment & Infrastructure, Inc. Principal Technician 2004 – 2015

Engineering & Testing Solutions, LLC (ETS). Senior Technician, Field/Lab Construction Supervisor 2000 - 2004

LAW Engineering, Inc. Principal Technician 1982 – 2000

Harrison Concrete - Plant Dispatcher, 1980 - 1982

EXPERIENCE SUMMARY:

Construction Oversight: WVA. National Cemetery, Grafton WVA. / Jan 06 /2013 through Oct.17/2013: Field construction oversight of the construction of a 2500 crypt placement, drainage system and new drive paving for National Cemetery Associations of the Veterans Administration.

Environmental Technician Assistant: 2012:

Assisted with several environmental projects at various times throughout the year as need in constructing and operating new type of chemical injection wells at several

different site for chemical remediation's of environmental contaminations.

Senior Engineering Technician: HMUF 9720-82 Distribution Building Y-12: a NQA1 project - Fees: 5.4 million. Construction date: Beginning 2005 through 2009. Construction Engineering Inspection. Batch plant inspection during the construction period. Coordinated of required construction material testing between the project and laboratory.

CEI Inspector: City of Sevierville 2.2 miles of hwy 66 expansion phase II / Oct 2013 to present
Construction engineering inspection and oversight of highway grade work and density testing of soils and dense aggregate base. Various utility construction operations of water, sewer, gas and storm drainage. Rebar inspection of various onsite structures. Concrete testing during concrete pours. Gradation of stone aggregate as required.

CEI Inspector: City of Knoxville (TN) - Knox-Blount Greenway, Knoxville Tennessee - Parks / Recreation – Fees: \$349,006. Estimated Completion: 6/1/14. Construction engineering inspection / full project oversight. Project includes grading, drainage, gabion wall construction and a pre-cast pedestrian bridge with cast in-place abutments and decking for nearly two miles of greenway construction. Daily duties included inspection of contractors' work, implementation of EPSC measures, and inspection of materials for quality assurance with the plans and specifications.

Construction Quality Control: U.S. 460 Connector - Phase I

AMEC provided onsite construction inspectors to perform overall quality control of the project during construction. AMEC's inspectors provided quality control on concrete, asphalt, MSE walls, and deep foundation inspection. Concrete testing for the 28,000 cubic yards of concrete required for the bridges required multiple crews working days and nights. AMEC provided an onsite laboratory to perform concrete testing.

Equipment operator and core logging assistant:

FEES: \$3 million, Estimated Completion Summer of 2013.

Operated one of the two water trucks. Kept several drilling crews in water for continuous drilling along with the packer systems in operation. When not operating the water truck assisted the geologist with logging the cores in the designated trailers and putting them in order.

Construction Oversight: TVA Paradise Steam Plant. Piezometer Installation: Fees: \$90,000, Estimated Complete: 2013.

Oversee construction of Vibrating Wire Piezometer pads installations by the contractor. Wired up each Piezometer after completing the pads

Project Coordinator: TVA Kingston Haul Road Construction Oversight

Fees: \$115,000, Estimated Complete: 2012.

Field and laboratory oversight of the technicians involved in construction of a new haul road from two new scrubber silos and a new route into the plant from excavation embankment fill based on asphalt and concrete. Worked with TVA construction manager of the project with testing of materials in field and lab along with coordinating technicians for field testing when required and special situation problem solving with the TVA construction manager.

Project Coordinator: TVA Marietta Silos

Fees: \$32,000, Estimate Complete: 2011.

Field construction oversight of several technicians during construction of two coal scrubber silos along with building haul roads into and out of the new storage area. Position consisted of technician oversight along with coordinating testing schedule of technicians with the TVA construction manager and material testing in field and laboratory.

Project Coordinator: TVA Bull Run Facility Concrete Testing for Marietta Silos Power Generation - Fossil -

Fees: \$10,388. Estimated Complete: 2011 101052. Provide concrete testing and sampling. Responsible for project scheduling and project coordination, along with on-site senior technician responsibilities.

Project Coordinator: Tennessee Valley Authority Kingston Plant Gypsum Pond Road, Harriman, Tennessee Power Generation - Fossil -

Fees: \$51,062. Estimated Complete: 2011 101057.

QA/QC Conformance Testing for the Gypsum Pond Haul Road at the TVA Kingston Fossil Plant in Harriman, Tennessee. TVA will be constructing a haul road to accommodate the gypsum pond. AMEC will observe construction and provide testing of the soils, stone and

geotextile for the haul road; observe proofrolling of all areas before placement of structural fill; provide a written procedure of the work to be performed; provide a final report summarizing the work completed and all test results. Responsible for project scheduling and project coordination of all technicians working onsite, along with on-site senior technician responsibilities.

Senior Technician: Construction Oversight at O.E. Burge Site, South of Cameron WV Drilling/Fracking gas well pad - Fees: \$50,000. Completed 07/11/12.

Performed construction oversight for the reconstruction of a slope failure of the Drilling/Fracking well pad. A large stone buttress was constructed at the bottom of the long slope with three stone drains constructed on a very steep slope from the top connecting to the buttress at the bottom. Also a smaller drain constructed on an additional slope.

Senior Technician: Construction Oversight at R.A. Baker Site, South of Cameron WV Drilling/Fracking gas well pad - Fees: \$144,000. Completion - 09/06/12

Construction oversight of several major slope failures of the Drilling/Fracking well pad. The Construction consisted of building soil berms along with constructing swells and berms for redirecting the water flow down each of the very steep slopes. Also dredging and reconstructing the creek bed at the bottom to the slope which caught the brunt of the debris off of the slopes.

Senior Technician: Project Management/Oversight:

Honeywell Corp. Gossin Mine, Galax, Virginia. Mine material assessment of in place concrete plug and pipe leaking repair Fees: \$200,000. Phase completion Dec. 06, 2012.

Over site of the contractor during the repair leak in the 12 inch discharge pipe used for the mine water backed up in mine and core samples of the in place concrete plug poured in the late 1960s. Core locations were taken at difficult angles inside a cramped area of the mine entrance. The samples had to be photographed, logged and specially wrapped for transporting to the lab in Ontario Canada.

Environmental: Site personnel assistant on several remediation sites

Assisted during Bio chemical injection on sites for the Saw Chain site in Columbia SC and the Pine St. Site in Spartanburg SC. Assisted in construction of an environmental injection system at the SPX site in McMinnville TN. Assisted in construction of a bio injection system at the site.



Joseph L. Matalucci

Quantum Environmental & Engineering Services, LLC

Director of Construction Services

Years in Environmental/Engineering Services 34
Years with Company 14

EDUCATION:

B.A., Geology, State University of New York at New Paltz, 1978

A.S., Physical Sciences, Orange County Community College, New York, 1976

EMPLOYMENT HISTORY:

Quantum Env. & Engineering Services	2003 – Present	Director of Construction Services
Environmental Systems Corporation	1998 – 2003	Construction Manager
Interstate Industrial Corporation	1995 – 1998	Geologist
United Enterprises	1994 – 1995	Partner
Virogroup - ETE Division	1990 – 1994	Sr. Geologist
Grossinger Development Corporation	1989 – 1990	Construction Manager
Phillips Engineering Construction Company	1984 – 1989	Corporate Officer/Project Manager
Wehran Engineering, PC	1978 – 1984	Staff Geologist

SPECIAL QUALIFICATIONS:

Certified Troxler Laboratories Nuclear Soil Testing Equipment Operator

Site Safety Manager - New York City Dept. of Buildings

40-hour Hazardous Waste Training Program

Level I – Fundamentals of Erosion Prevention and Sediment Control (2011)

Confined Space Entry Training (2016)

RELEVANT EXPERIENCE:

Mr. Matalucci has thirty-four years of experience in civil design support, geology and geologic investigations, ground-water monitoring, site remedial investigations, preparation of remedial plans, environmental site assessments, and construction management. He has a proficient knowledge of field techniques in geologic investigations as well as extensive field management of construction activities. Mr. Matalucci also coordinates the business development, staffing, budgeting, and scheduling for all construction services at QE2.



Mr. Matalucci is the quality control and quality assurance (QA/QC) manager for landfill liner construction, and helps complete solid and hazardous waste landfill design. He verifies quantities of work completed using grade stakes and approves Contractor's payment applications for performing the work to build the landfills.

Mr. Matalucci has experience preparing construction and demolition specifications, and has provided oversight and project management for demolition projects which included hazardous materials abatement. He provided project oversight for the Tennessee School for the Deaf Cottage E Abatement and Demolition. During this project, Mr. Matalucci coordinated with the Contractor to provide milestone reviews and inspections so that the Contractor could continue making progress and QE2 could smoothly approve and process payment applications to the State of Tennessee.



April 18, 2019

Jonathan D. Grammer, P.E., CCM, LEED Green Associate
Senior Construction Manager
Volkert, Inc.
1616 2nd Avenue South, Suite 150
Birmingham, AL 35233

**Subject: Fee Proposal for Hazardous Materials Survey, Abatement Design and Oversight, and Geotechnical Exploration and Construction Materials Testing Services
New Public Safety Complex, Knoxville, Tennessee**

Dear Mr. Grammer:

Quantum Environmental & Engineering Services, LLC (QE2), and our geotechnical Team member Shield Engineering, Inc. (Shield), are pleased to provide this Fee Proposal to Volkert, Inc. (Volkert) for Environmental and Geotechnical Services in support of the City of Knoxville Public Safety Complex project, at the former Tennova Physicians Regional Medical Center site in Knoxville. This Fee Proposal is submitted in response to your telephone and email correspondence dated April 5, 2019, and subsequent scope revisions.

The proposal is presented in two separately priced parts. QE2 proposes the following activities for the Public Safety Complex project:

Phase 1 – Phase I Environmental Site Assessment (ESA) and Report, Hazardous Materials Survey and Report, Abatement Design and Oversight for Renovations at the Professional Building, Central Annex, and Women’s Pavilion; and Demolition of Portions of the Central Wing, Main Entrance, and Annunciation Wing Basement; Geotechnical and Construction Materials Testing Services for New Municipal Court Facility - Cost Estimate \$137,856.00.

- Perform a Phase I ESA and provide the subsequent report in general accordance with American Society for Testing Materials (ASTM) Standard Practice 1527-13 and ASTM Standard E2600-10, Standard Guide for Vapor Encroachment Screening. Asbestos-containing building materials, radon, lead-based paint, mold, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality and biological agents are considered non-scope considerations by ASTM E1527-13 and *are specifically excluded* from consideration in a Phase I ESA scope of work.



www.QE2LLC.com
126 Dante Rd. | Knoxville, TN 37918 | (865) 689-1395

- Review renovation and demolition plans, and existing asbestos survey information from past work at the complex to determine potential data gaps. Determine homogeneous areas (HAs) and materials and sample suspect asbestos-containing materials (ACM) as necessary. All asbestos survey work will be performed by Tennessee-licensed Asbestos Inspectors.
- Pack and ship samples to an approved laboratory for analysis of asbestos content by the polarized light microscopy (PLM) method, review data, and quantify and map confirmed ACMs on site plans.
- Identify other potentially impacted hazardous materials including mercury-containing equipment, ozone-depleting substances (ODS), polychlorinated biphenyl (PCB)-containing equipment, petroleum-containing equipment and tanks, chemicals, etc.
- Provide notification, removal oversight, soil sampling, and reporting if the one (1) underground storage tank (UST) servicing the generator at the Women's Pavilion is removed as part of Phase 1. Provide assistance with Amended Notification Forms and UST ownership changes for USTs registered with the Tennessee Division of Underground Storage Tanks (DUST).
- Prepare a Hazardous Materials Survey Report for Phase 1 with sampling protocol, sample locations, material descriptions, photographs, laboratory reports, lists of confirmed ACMs and other hazardous materials, graphic representations of locations of materials requiring abatement, and conclusions and recommendations for abatement.
- Estimate costs for abatement of potentially impacted ACMs in Phase 1, based on the renovation scope of work.
- Prepare asbestos abatement and disposal design documents (mostly for the Central Wing, Main Entrance, and Annunciation Wing Basement) to be included in a renovation and demolition Bid Package prepared by the selected architect. Abatement design work will be performed by a Tennessee-licensed Asbestos Abatement Project Designer. The abatement design will include approximately six (6) Specifications sections (administrative, submittals, testing, scope of work and methods, etc.).
- Prepare abatement and disposal design documents for other potentially impacted hazardous materials including mercury-containing equipment, ODS, PCB-containing equipment, petroleum-containing equipment, chemicals, etc., to be included in the Bid Package prepared by the selected architect.
- Attend Phase 1 Bid Meetings and assist in responses to questions from potential abatement contractors as requested.

Jonathan Grammer, P.E.

April 18, 2019

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- Provide review of abatement contractor pre- and post-abatement submittals as needed; attend pre-construction and progress meetings. The cost estimate assumes four total planning and progress meetings.
- Provide onsite asbestos and hazardous materials abatement oversight and verification of removal during abatement activities to support the Owner's needs. The cost estimate assumes two (2) site inspections visits per week for six (6) weeks of abatement.
- Provide air clearance testing of asbestos abatement containment areas as appropriate. The cost estimate assumes six (6) air clearance testing events.
- Provide Field Reports and any laboratory reports during oversight. The cost estimate assumes approximately ten (10) Field Reports over the course of Phase 1 work.
- Provide geotechnical testing for the location of a new, 10,000-square foot Municipal Court facility following demolition of structures in the area of the Central Wing Lower Level and Annunciation Wing basement. A Proposal for Geotechnical Services from Shield Engineering, Inc. is attached with scope of work assumptions.
- Provide additional construction materials testing (CMT) as needed during the construction of new facilities and/or renovation of existing facilities. CMT estimates are based on email correspondence from Volkert dated April 14, 2019, and include testing for soil compaction, concrete and masonry reinforcing, concrete compressive strength, steel connections and welding, bar joists and metal deck, masonry and steel lintels, etc. Actual laboratory costs for CMT will be invoiced according to the attached rate sheet provided by Shield.

Phase 2 – Hazardous Materials Survey, Report, Abatement Design and Oversight for Renovations at the original historic building; and Demolition of Main North Wing, McCauley Wing, East Wing, West Wing, St. Joseph's Wing and Boiler Plant, Marian Wing, and the remainder of the Central Wing and Annunciation Wing - Cost Estimate \$108,049.00.

- Review renovation and demolition plans, and existing asbestos survey information from past work at the complex to determine potential data gaps. Determine HAs and materials and sample suspect ACM as necessary. All asbestos survey work will be performed by Tennessee-licensed Asbestos Inspectors.
- Pack and ship samples to an approved laboratory for analysis of asbestos content by the PLM method, review data, and quantify and map confirmed ACMs on site plans.
- Identify other potentially impacted hazardous materials including mercury-containing equipment, ODS, PCB-containing equipment, petroleum-containing equipment, chemicals, etc.

Jonathan Grammer, P.E.

April 18, 2019

Page 4

- Provide notification, removal oversight, soil sampling, and reporting for five USTs in the Phase 2 areas servicing generators, vehicles, and boiler tanks. Provide assistance with Amended Notification Forms and UST ownership changes for USTs registered with DUST.
- Prepare a Hazardous Materials Survey Report for Phase 2 with sampling protocol, sample locations, material descriptions, photographs, laboratory reports, lists of confirmed ACMs and other hazardous materials, graphic representations of locations of materials requiring abatement, and conclusions and recommendations for abatement.
- Estimate costs for abatement of potentially impacted ACMs in Phase 2, based on the renovation and demolition scope of work.
- Prepare asbestos abatement and disposal design documents to be included in a renovation and demolition Bid Package prepared by the selected architect. Abatement design work will be performed by a Tennessee-licensed Asbestos Abatement Project Designer. The abatement design will include approximately six (6) Specifications sections (administrative, submittals, testing, scope of work and methods, etc.).
- Prepare abatement and disposal design documents for other potentially impacted hazardous materials including mercury-containing equipment, ODS, PCB-containing equipment, petroleum-containing equipment, chemicals, etc., to be included in the Bid Package prepared by the selected architect.
- Attend Phase 2 Bid Meetings and assist in responses to questions from potential abatement contractors as requested.
- Provide review of abatement contractor pre- and post-abatement submittals as needed; attend pre-construction and progress meetings. The cost estimate assumes ten (10) total planning and progress meetings over six months of abatement.
- Provide onsite asbestos and hazardous materials abatement oversight and verification of removal during abatement activities to support the Owner's needs. The cost estimate assumes two (2) site inspections visits per week for twenty-six (26) weeks of abatement.
- Provide air clearance testing of asbestos abatement containment areas as appropriate. The cost estimate assumes twenty-five (25) air clearance testing events.
- Provide Field Reports and any laboratory reports during oversight. The cost estimate assumes approximately twenty-five (25) Field Reports over the course of work.

Jonathan Grammer, P.E.
April 18, 2019
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All work shall be performed in accordance with Environmental Protection Agency (EPA), Tennessee Department of Environment and Conservation (TDEC), Knox County and City of Knoxville requirements.

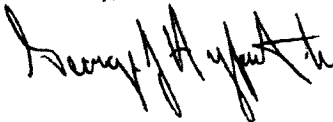
No work is included in the estimates for the structures within the footprint of Clarke Tower. The estimate does include assessments of the potentially impacted areas connecting to Clarke Tower.

The cost estimates do not include testing for lead-containing or lead-based paint (LBP). TDEC does not require testing for LBP for demolition activities or the disposal of demolition debris. QE2 recommends testing for LBP if sanding or scraping of surface coatings is deemed necessary in renovation areas of pre-1978 construction (e.g., the original 1930's historic building), to satisfy the rules and regulations of the Occupational Safety and Health Administration (OSHA) and Tennessee OSHA. A separate cost proposal will be submitted for LBP testing if future design and renovation plans include the sanding or scraping of potential LBP.

Additional services beyond the scope of work and assumptions presented above will be performed according to the attached QE2 Fee Schedule.

QE2 appreciates the opportunity to provide this Fee Proposal, and work with Volkert and the City of Knoxville on this project. If you have any questions concerning this submittal, or need additional information, please feel free to contact Terence Davis or me at (865) 689-1395.

Sincerely,



George J. Hyfantis, Jr., Ph.D., P.E.
President

c: Proposal File 2019-029R



**SCHEDULE OF FEES WITH TERMS AND CONDITIONS
 QUANTUM ENVIRONMENTAL & ENGINEERING SERVICES, LLC**

EFFECTIVE JULY 2017

Quantum Environmental & Engineering Services, LLC (QE2) provides its clients with consulting services in environmental sciences and engineering. Compensation will be based on the following schedule of fees and charges or on a lump sum basis as stipulated in the executed *Task Authorization and Statement of Work*. All fees are quoted and payable in U.S. Dollars.

Hourly Fees for Professional and Technical Staff	Rate/Hour
1. President/Principal.....	\$176
2. Program Manager.....	\$143
3. Senior Engineer	\$136
4. Engineer.....	\$100
5. Senior Environmental Specialist.....	\$120
6. Environmental Specialist	\$83
7. Senior Geologist	\$117
8. Geologist.....	\$98
9. Certified Industrial Hygienist	\$171
10. Industrial Hygienist.....	\$93
11. Staff Professional III.....	\$107
12. Staff Professional II.....	\$90
13. Staff Professional I.....	\$72
14. Contract Administrator.....	\$58
15. CADD Designer	\$79
16. CADD Operator.....	\$64
17. Senior Technician	\$64
18. Technician II.....	\$58
19. Technician I.....	\$50
20. Constr & Engr Inspector (CEI).....	\$90
21. Construction Inspector II.....	\$75
22. Construction Inspector I.....	\$60
23. Administrative	\$46

Expert witness testimony: twice the listed rate. Travel time will be charged at the regular hourly rates, not to exceed 8 hours per day. Rates charged to clients are those rates in effect at the time services are rendered. Client acknowledges that these rates are reviewed annually and may be adjusted accordingly.

Project-related expenses are charged as follows:

1. Travel-related expenses: invoiced at current G.S.A. rates.
2. Subcontractors (drilling, laboratory testing, etc.): at subcontractor invoice with 20 percent markup for overhead and profit.
3. Out-of-pocket, project-expendable materials and supplies, etc.: receipt with 20 percent markup for overhead and profit.



4. Rates for health/safety and field instrumentation equipment rental will be furnished upon request.

Invoicing

Invoices will be issued and are payable according to the terms of the Agreement.

Stoppage of Work

QE2 reserves the right to stop work on this project in the event Invoices for work performed or materials used on this project are not paid within 60 days of the invoice date. QE2 will notify client in writing of the work stoppage.

Hazardous Substance or Pollution Liability

Client acknowledges and agrees that the presence of hazardous substances of pollution at a site may further create risks and liabilities for which QE2 has no responsibility. Consequently, Client will:

- (a) disclose to QE2 the existence of all hazardous substances and pollution at or near the project site to the best of the Client's knowledge, records and investigation; and
- (b) acknowledge that QE2 has no responsibility as a generator, treater, storer, or disposer of hazardous or toxic substances found or identified at a site, unless QE2's own actions create such responsibility.



April 12, 2019

Mr. Terry Davis, P.G.
Senior Environmental Specialist, Geologist
Quantum Environmental & Engineering, LLC
126 Dante Road
Knoxville, TN 37918

Office: 865-689-1395
Email: tdavis@QE2LLC.com

**Subject: Proposal for Geotechnical and Materials Testing Services
Proposed City of Knoxville Court Facility
Knoxville New Public Works Facility
Knoxville, Tennessee
Shield Proposal No.: P2019-726**

Dear Mr. Davis:

Shield Engineering, Inc., (Shield) submits for your review our proposal for performing a geotechnical exploration as well our fee schedule for Construction Materials Testing (CMT) services for the proposed City of Knoxville New Public Works Facility in Knoxville, Tennessee. Our proposal outlines our scope of services, opinion of probable cost, and a method for allowing us to proceed.

PROJECT INFORMATION

Information has been provided to us by an email dated April 9, 2019. The email contained a preliminary conceptual sketch of the site layout for a new 10,000 square foot court facility building. The proposed structure will be a 1 story slab on grade building with 20-25 feet tall walls. Shield has assumed the structure will be constructed of CMU block with a decorative brick veneer.

The proposed site is the former St. Mary's Hospital facility located just off Woodland Drive. Portions of the facility will be demolished. The proposed location for the court facility is currently housed by an existing building that will be demolished before geotechnical work can be completed.

No structural loading information has been provided, however, we have assumed column and wall footings will not exceed a maximum loading condition of 75 kips and 3 kips per linear foot, respectively.

GEOTECHNICAL SCOPE OF SERVICES

Geotechnical Exploration

Task 1: Field Activities:

Based on the proposed site layout, Shield plans to advance a total of nine (9) soil test borings to 20 feet below existing grades in the proposed building footprint. If auger refusal is encountered prior to reaching the predetermined boring depth, the boring will be terminated. The soil test borings will be performed using hollow-stem, continuous-flight-auger drilling techniques in general accordance with ASTM Test Method D-6151. Standard Penetration Tests (SPTs) will be performed at designated intervals and soil samples will be obtained at the soil boring locations in general accordance with ASTM Test Method D-1586.

We have assumed that a truck-mounted drill rig will be adequate for site and boring location access.

After completion of drilling operations, the split-spoon samples collected during drilling operations will be transported to our Knoxville office and visually examined and classified by a geotechnical engineer.

Task 2: Laboratory Testing: Shield proposes performing laboratory classification and moisture content tests on representative samples obtained during drilling operations. These tests include up to the following:

- 2 Atterberg Limits
- 30 Natural Moisture Contents
- 1 Soil Unconfined Compressive Strength, *if necessary*

If the subsurface conditions dictate that additional laboratory testing or sample collection is required, we will consult with you before proceeding.

Task 3: Geotechnical Report Preparation: The results of our work will be presented in a written report outlining the following findings and recommendations. The report will describe the site conditions, topography, drainage conditions, geologic information, and subsurface data and provide an engineering evaluation of the site. The geotechnical report will include, but is not limited to, the following:

- Stamp and signature of professional engineer;
- A brief review of the procedures used and test results;
- A review of subsurface soil with pertinent available physical properties;
- Accommodations for general design and construction criteria for foundations, slabs on grade;

-
- Recommendations for site preparation;
 - Site Location Plan;
 - Boring Location Plan;
 - Boring Logs;
 - Subsurface Profiles;
 - Regional Geology, Topography and Existing Site Conditions;
 - Proposed Project Data;
 - Laboratory Data;
 - Engineering interpretations of the drilling and laboratory data;
 - Recommendations for site preparation and construction of compacted fills;
 - Recommendations for design of shallow foundations; and
 - Recommendation for groundwater control, if necessary.

ASSUMPTIONS & LIMITATIONS

Our proposal is based on our understanding of your requirements and the above scope of services. Shield assumes the site will be accessible to a truck-mounted drill rig. At this time Shield believes the site will be assessable for a truck drill rig without the need for clearing for access after the site has been demolished. Shield cannot be responsible for damages or injuries to or from utilities. Contractor equipment failure, weather delays, or other delays not directly attributable to Shield are considered out of scope and may increase project costs.

SCHEDULE AND AUTHORIZATION

We can complete our activities, including our written reports within 15 working days after written Authorization to Proceed is provided. The services in this proposal will be provided in accordance with the mutually agreed upon Client Services Agreement that will be signed by you. To formally authorize Shield for the performance of this project, please sign the attached Client Services Agreement and return a copy to Shield for our records. In the alternative, your assigning a Purchase Order to complete the work will mean that you have read and understand the Proposal and Client Services Agreement, and agree to the content thereof. If you are not in agreement with any of these documents, please contact us.

GEOTECHNCIAL SCOPE OPINION OF PROBABLE COST

Shield proposes to provide our scope of services for a lump sum fee of \$5,350. If unanticipated conditions are encountered and it becomes necessary to alter our scope of services, we will contact you immediately, prior to proceeding.

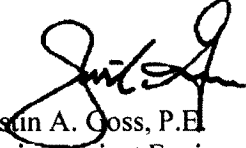
CONSTRUCTION MATERIALS TESTING FEE SCHEDULE

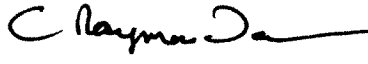
As requested Shield has also attached our fee schedule for Shield personnel and laboratory/field testing that we have estimated may be required for this project given our experience with similar projects. Shield can provide a better cost estimate once the project is further through the design phase of the project.

Shield Engineering, Inc. appreciates the opportunity to provide you with geotechnical services. If you have any questions concerning our proposal, please contact the undersigned at (865) 544-5959.

Sincerely,

SHIELD ENGINEERING, INC.


Justin A. Goss, P.E.
Senior Project Engineer


C. Raymond Tant, P.E.
Principal Engineer

Attachments: Construction Materials Testing Fee Schedule



Fee Schedule – City of Knoxville New Public Works Facility

A. PERSONNEL

	<u>Rates</u>
Administrative Staff.....	\$ 50.00/hour
CAD Operator	\$ 70.00/hour
Technician I.....	\$ 45.00/hour
Technician II	\$ 50.00/hour
Technician III	\$ 55.00/hour
Technician IV.....	\$ 65.00/hour
Technician V	\$ 75.00/hour
Technician VI.....	\$ 85.00/hour
Staff Professional I.....	\$ 85.00/hour
Staff Professional II.....	\$ 90.00/hour
Project Manager	\$ 95.00/hour
Senior Project Manager.....	\$115.00/hour
Senior Professional I	\$125.00/hour
Senior Professional II.....	\$130.00/hour
Technical Specialist	\$135.00/hour
Senior Technical Specialist/Principal.....	\$150.00/hour

Overtime Rates for Hourly Workers:

* *Rates for Technicians and other hourly personnel will be charged at a 1.5 rate multiplier for work time over 8.0 hours per day and on weekends and at a 2.0 rate multiplier on holidays.*

B. TRAVEL

Mileage.....	\$ 0.75/mile
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C. EQUIPMENT

Nuclear Density Gauge	\$ 40.00/day
Floor Flatness Profiler.....	\$150.00/day

D. LABORATORY SERVICES

Natural Moisture Content	\$ 7.00/each
Unit Weight and Natural Moisture Content	\$ 50.00/each
Atterberg Limits Test.....	\$ 65.00/each
Grain Size Analysis w/ Wash 200 Sieve.....	\$ 80.00/each
Grains Size Analysis w/Hydrometer	\$120.00/each
Standard Moisture Density Relationship, 4-inch mold	\$110.00/each
Standard Moisture Density Relationship, 6-inch mold	\$130.00/each
Modified Moisture Density Relationship, 4-inch mold.....	\$130.00/each
Modified Moisture Density Relationship, 6-inch mold.....	\$150.00/each
Compressive Strength (ASTM C39), per cylinder molded	\$ 17.00/each
Compressive Testing of 2-inch mortar or grout cubes (ASTM C109/C1019)	\$ 20.00/each
Compressive Testing of Grout Prism (ASTM C1019), per prism molded	\$ 20.00/each

EXHIBIT D
SCHEDULE OF SERVICES

HAZARDOUS MATERIAL SURVEY – 60 DAYS (MAY 13, 2019 – JULY 12, 2019)

ABATEMENT DESIGN AND OVERSIGHT – 889 DAYS (JULY 12, 2019 – DECEMBER 17, 2021)

GEOTECHNICAL EXPLORATION – 30 DAYS (JANUARY 6, 2020 – FEBRUARY 5, 2020)

CONSTRUCTION MATERIAL TESTING – 608 DAYS (APRIL 19, 2020 – DECEMBER 17, 2021)

SELECTIVE DEMOLITION – 60 DAYS (OCTOBER 1, 2019 – NOVEMBER 29, 2019)