

Request for Proposal

Pole Barn
At "Boneyard"
For MBWWTP

Contract No. W-19-004-201

City of Chattanooga, Tennessee

February 2020



Section 1

Introduction

**REQUEST FOR PROPOSALS
POLE BARN AT “BONEYARD” FOR MBWWTP
CONTRACT NO. W-19-004-201
CITY OF CHATTANOOGA, TENNESSEE
(December 19, 2019)**

1.0 INTRODUCTION

1.1 BACKGROUND

A. GENERAL

The City of Chattanooga (City) is issuing this Request for Proposals (RFP) to solicit proposals from qualified individuals or firms for the purpose of selecting a Vendor from those who submit Letters of Interest with which to negotiate an Agreement for the design and construction of a pole barn storage structure for the Moccasin Bend Waste Water Treatment Plant (MBWWTP) at the maintenance “boneyard”.

1.2 PURPOSE OF RFP

A. GENERAL

This RFP results from the City's desire to select a Vendor to design, fabricate, and construct a utility structure pole barn to store pipe and other equipment and materials for MBWWTP.

B. OBJECTIVE OF RFP

The MBWWTP is a regional wastewater treatment facility that processes 140 million gallons per day (MGD). As part of ongoing improvements to the facility and to enhance the City's ability to maintain the public infrastructure that delivers flow to the Plant for treatment, the City wishes to construct a utility structure pole barn to store pipe and other equipment and materials. The primary objective is to provide shelter for storage of polymer pipe to protect it from ultraviolet rays and to keep it out of the weather. This will permit longer term storage of pipe stockpiles and speed up planned and critical repairs made by City forces on pipe systems.

The pole barn structure shall be constructed of treated dimensional lumber, engineered metal plate connected wood trusses, treated round timber columns, heavy timbers, and/or galvanized or stainless steel structural members. All fasteners used shall be corrosion-resistant, and roofing shall be metal roofing with minimum 25 year warranty. Foundations may be concrete cast-in-place shallow isolated footings, augered cantilever poles, or driven steel piles.

The pole barn structure shall have a single pitch roof, sloping down toward the north side of site. The structure shall be nominally 120' long by 34' wide (34' clear width). A maximum of five (5) 24' bays shall comprise the length of the pole barn. A minimum 14' clear height to any structural members above finished grade is required. The roof shall overhang three (3) feet. End trusses or roof-supporting members shall be clad at the gable ends of the structure.

The pole barn structure is Occupancy U, and must be designed by the Vendor for all appropriate loads as dictated by IBC 2012, including wind and seismic loads. The final building footprint will be under 5000 square feet (sf). The Vendor will be responsible for providing drawings, calculations, and all other documentation necessary for obtaining building permits, and for providing shop drawings to the City for review during fabrication and construction.

The Vendor shall also perform minor site grading and shall provide, place and compact City standard aggregate 33P (TDOT mineral aggregate Type A, Grading D, or "pug") to the elevations specified, to a minimum thickness of 6" (unless a thinner layer of aggregate is authorized by the City). This aggregate base will be the working floor of the structure.

The Vendor shall also provide railroad ties to be used as cribbing storage racks for pipe storage, as directed by Plant staff.

The Vendor shall be responsible for compliance with all applicable State, Federal, and local laws and regulations regarding the design and construction of the pole barn, including obtaining all necessary permits. The cost of all permit reviews and permitting fees shall be included in the Vendor's fee.

Section 2

Instructions for RFP

2.0 INSTRUCTIONS FOR RFP

2.1 GENERAL

Three (3) bound copies, one (1) unbound original copy, and an electronic copy in Word or PDF format of the RFP shall be submitted. The RFP will be limited to 25 pages excluding the resumes of key project personnel requested.

All RFPs shall be submitted in a sealed envelope or box marked "Pole Barn at "Boneyard" For MBWWTP, CONTRACT NO. W-19-004-201, City of Chattanooga, Tennessee." The original and copies of the RFP shall be indexed with tabs for each section of the RFP.

All RFPs shall be submitted no later than 4:00 p.m. EST, on March 12, 2020 to the attention of:

City of Chattanooga
Purchasing Department
101 E. 11th Street, Suite G13
Chattanooga, TN 37402
bidinfo@chattanooga.gov
Phone: (423) 643-7230
FAX: (423) 643-7244

NOTE: RFP responses shall address only the information requested in the RFP. The City is not interested in "fluff or filler." It is interested in the resumes of the people that will be working on the project and descriptions of similar projects that they have worked on singularly or together. Resumes of others who will not be working on the project or project descriptions that are not recent or not relevant to the RFP are not wanted.

2.2 RFP WITHDRAWAL PROCEDURE

RFPs may be withdrawn up until the date and time set above for opening of RFPs. Any RFP not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of ninety (90) days to provide the services set forth in the RFP or until one of the RFPs has been accepted and a contract has been executed between the City and the successful RFP submitter.

2.3 RESERVATION OF CITY RIGHTS

- A. The City reserves the right to request clarification of information submitted and to request additional information of one (1) or more RFPs.

- B. The City reserves the right to negotiate the Agreement/Contract for the Pole Barn at "Boneyard" for MBWWTP with the next most qualified finalist if the successful finalist does not execute an Agreement/Contract within five (5) days after submission of an Agreement to such offeror. The City reserves the right to negotiate all elements of work that comprise the selected RFP.
- C. The City reserves the right, after opening the RFPs or at any other point during the selection process, to reject any or all RFPs, modify or postpone the proposed project, evaluate any alternatives offered or accept the RFP that, in the City's sole judgment, is in its best interest.
- D. The City reserves the right to terminate the Agreement if the Vendor fails to commence the work described herein upon giving the Vendor a 30 (thirty) day written Notice of Intent.

2.4 **PRE- RFP CONFERENCE** – A Pre-RFP Conference will be held on Thursday, February 27, 2020 at 10 AM, at MBWWTP, located at 455 Moccasin Bend Road, Chattanooga, TN 37405.

2.5 **FACILITY VISIT** – The Pre-RFP Conference will be held at the MBWWTP O&C Building.

2.6 **ADDITIONAL REQUESTS FOR INFORMATION**

Any additional requests for information must be directed in writing to the City by **4:00 p.m. EST, on Friday, March 6, 2020**. The requests will be addressed to the fullest extent possible by the City in writing and sent to each responder to the RFQ by **end of day on Monday, March 9, 2020**. The City's preferred method of communication is via e-mail. After that time, no further requests for information will be received or responded to.

Requests for information or clarification shall be sent to:

City of Chattanooga
Purchasing Department
101 E. 11th Street, Suite G13
Chattanooga, TN 37402
bidinfo@chattanooga.gov
Phone: (423) 643-7230
FAX: (423) 643-7244

The City specifically requests that any contact concerning this RFP be made exclusively with the **City of Chattanooga Purchasing Department** until selection has been completed. Failure to honor this request will be negatively viewed in the selection process.

2.7 **Affirmative Action Plan**

The City is an equal opportunity employer and during the performance of this Contract, the Vendor agrees to abide by the equal opportunity goals of the City of Chattanooga as follows:

1. The Vendor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or handicap. The Vendor will take affirmative action to ensure that applicants are employed,

and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or handicap. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The Vendor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

2. The Vendor will, in all solicitations or advertisements for employees placed by or on behalf of the Vendor; state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, or handicap.
3. The Vendor will send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice advising said labor union or workers' representatives of the Vendor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. In all construction contracts or subcontracts in excess of \$10,000 to be performed for the City, any Vendor and/or subcontractor is further required to file in duplicate within ten (10) days of being notified that it is the lowest responsible bidder, an affirmative action plan with the EEO Director of the City of Chattanooga. This plan shall state the Vendor's goals for minority and women utilization as a percentage of the work force on this project.
5. This Plan or any attachments thereto, shall further provide a list of all employees annotated by job function, race, and sex who are expected to be utilized on this project, and shall further describe the methods by which the Vendor and/or subcontractor will utilize to make good faith efforts at providing employment opportunities for minorities and women.

During the term of this contract, the Vendor upon request of the City will make available for inspection by the City copies of all payroll records, personnel documents, and similar records or documents that may be used to verify the Vendor's compliance with these Equal Opportunity provisions.

Section 3

RFP Contents

3.1 GENERAL INFORMATION

The Proposal shall provide the following general information:

- A. Identify the name, address, telephone, and facsimile numbers of the Vendor and the principal contact person.
- B. Identify the type of firm or organization (corporation, partnership, joint venture, etc.) and describe the entity that will serve as the contracting party.
- C. Submit a project organization chart.
- D. RFP shall identify the portions of the work that will be undertaken directly by the Vendor and what portions of the work will be subcontracted. At a minimum, RFPs must identify the lead parties that will undertake the various roles for the various phases.
- E. Describe the proposed contractual relationships between the Vendor and all major partners and subcontractors relative to the various phases of the project.
- F. Describe the history of the relationships among the Project Team members, including a description of past working relationships.
- G. Provide the history, ownership, organization, and background of the Vendor. If the Vendor is a joint venture, the required information must be submitted for each member of the joint venture firm. Include the following:
 1. Names of partners, and company officers who own 10 percent or more of the shares;
 2. If the Vendor or joint venture is a subsidiary of a parent company, state when the subsidiary was formed and its place in the corporate structure of the parent company. If a subsidiary is newly created for the purposes of responding to this RFP, the reasons for this action must be fully disclosed; and
 3. Identify any lawsuits or litigation, permit violations, and/or contract disputes for other projects by the Vendor.
- H. Provide a proposed plan to design and construct a utility storage pole barn as described in this RFP. The plan may include additional optional upgrades that the Vendor feels may enhance the function or economy of the structure; however those additional options should be priced separately to allow the City to make fair comparisons based on the base request.

- I. An Opinion of Probable Cost (OPC) shall be provided along with the hourly rates and charges. At the minimum the Vendor shall provide pricing for the base request of constructing the pole barn, placing aggregate, and providing pipe cribbing, including design, permitting, mobilization, fabrication, and construction of the pole barn.
- J. The Vendor shall provide a proposed schedule to complete all the work in one project. Then provide the estimated days for each sub-component if broken into multiple projects.
- K. Vendor shall provide initial training of all improvements.
- L. Warranties, upgrades, and services shall be for a period of one year, with the exception of roofing, which shall be a minimum twenty-five (25) year term, with options to extend if available.

3.2 QUALIFICATIONS AND EXPERIENCE

The Vendor shall provide the following regarding technical qualifications and experience dealing with the design, fabrication, and construction of large storage structures and/or pole barns.

A. General Experience

Provide a summary of the experience of the Vendor Project Team working together for the design, fabrication, and construction of large storage structures and/or pole bars.

B. Project Team Members Experience

Provide resumes of the Vendor Project Team including the Project Manager and all key technical personnel that will be used for the construction of the pole barn and/or other projects as applicable to this RFP. Resumes should include information on registrations, affiliations and certifications of each team member.

C. Previous Experience With Similar Projects

Provide a list of ten (10) to fifteen (15) pole barn or similar type project(s) the Vendor's Project Team has worked on together or singularly within the past five years. Include name of each project, description of each project, location of each project, dates and times work was performed, and name, address and phone number of owner and/or contact person.

3.3 PROPOSAL SCOPES OF WORK

A. General Scope of Work

1. The Vendor shall describe in detail its overall approach that will be used by its Project Team to perform the scope of work described herein for the Pole Barn at "Boneyard" for MBWWTP.
2. The Vendor shall provide all labor, benefits, equipment, materials, fuel, utilities, insurance, out-of-pocket expenses, and other related services required in connection with design, fabrication, and construction of the Pole Barn at "Boneyard" for MBWWTP project.

3. The Vendor shall obtain all necessary permits and approvals from all Federal, State, and local regulatory agencies related to the Pole Barn at "Boneyard" for MBWWTP project. Furnish copies of all required permits and approvals to the City.
4. The Vendor shall provide and submit reports and certifications as required by all applicable Federal and/or State regulations in regards to the construction of the Pole Barn at "Boneyard" for MBWWTP project. Furnish a copy of all required reports to the City in a timely manner.
5. The Vendor shall coordinate its work with the City of Chattanooga Waste Resources Division, including Plant staff.
6. The Vendor shall conduct the work for the Pole Barn at "Boneyard" for MBWWTP project in compliance with all applicable Federal, State, and local laws, regulations, permits, and approvals.
7. The Vendor shall provide adequate supervision and technical and managerial oversight of the Vendor's employees, subcontractors, and agents.

B. Specific Scope of Work

1. Work with the MBWWTP Plant Manager and other personnel to implement the installation plan submitted by the Vendor.

3.4 City Supplied Services

The City will provide the following as apart of the project:

- A. The City will provide a project manager as the single point of contact, who will be the responsible party for the City.

3.4 Financial Resources

The Vendor shall provide documentation that the firm is of sound financial standing and has the financial ability to work in the capacity of Vendor for the duration of this project.

3.6 Terms and Conditions

The terms and conditions shall be those addressed in the City standard construction specifications, unless otherwise listed below, to include the supplemental section provided by Appendix A.

- A. Except for information and data that is protected under law as confidential, all reports, permits, applications, etc. filed in connection with the work will be available for public inspection.
- B. Representatives of the City shall have access at reasonable times to the site(s) of the Vendor operations for the purposes of conducting inspections, or reviewing or copying records related to the construction of the Pole Barn at "Boneyard" for MBWWTP project.

- C. All records and documentation pertaining to the Vendor shall be maintained for a period of five (5) years following expiration or termination of the Agreement.
- D. Audit Provisions
1. The City or its assignee may audit all financial and related records (including digital) associated with the terms of the contract or agreement including timesheets, reimbursable out of pocket expenses, materials, goods, and/or equipment claimed by the Vendor. The City may further audit any Vendor records to conduct performance audits (to identify waste and abuse or to determine efficiency and effectiveness of the contract or agreement) or to identify conflicts of interest.
 2. The Vendor shall at all times during the term of the contract or agreement and for a period of five (5) years after the end of the contract, keep and maintain records of the work performed pursuant to this Contract or Agreement. This shall include proper records of quotations, contracts, correspondence, invoices, vouchers, timesheets, and other documents that support actions taken by the Vendor. Documents shall be maintained by the Vendor necessary to clearly reflect all work and actions taken. All such records shall be maintained in accordance with generally accepted accounting principles. The Vendor shall at its own expense make such records available for inspection and audit (including copies and extracts of records as required) by the City at all reasonable times and without prior notice.
 3. The obligations of this Section shall be explicitly included in any subcontracts or agreements formed between the Vendor and any subcontractors or suppliers of goods or services to the extent that those subcontracts or agreements relate to fulfillment of the Vendor's obligations to the City.
 4. Costs of any audits conducted under the authority of this section and not addressed elsewhere will be borne by the City unless the audit identifies significant findings that would benefit the City. The Vendor shall reimburse the City for the total costs of an audit that identifies significant findings that would benefit the City.
 5. This Section shall not be construed to limit, revoke, or abridge any other rights, powers, or obligations relating to audit which the City may have by Federal, State, or Municipal law, whether those rights, powers, or obligations are express or implied.

3.7 ALTERNATE APPROACHES (Not Required)

3.8 LENGTH OF CONTRACT

The length of the contract shall be as determined by the time required for the design, fabrication, and construction of the pole barn. It is the desire of the City that the construction may be performed in no more than eight (8) weeks.

The "Boneyard" is an integral part of the maintenance and operation of the MBWWTP, and so construction operations shall be performed to minimize obstruction of the gate and travel aisles inside the enclosure. Construction activities shall also minimize obstruction of the road around the "Boneyard."

Section 4

Review and Evaluation of RFPs

4.0 REVIEW AND EVALUATION OF RFPs

4.1 REVIEW COMMITTEE

A review committee consisting of individuals selected by the City shall receive and review all RFPs submitted. The City, in its sole judgment, shall decide if an RFP is viable.

4.2 FORMAL PRESENTATIONS

After reviewing each RFP submittal, the City may prepare a short list of up to three (3) qualified firms for formal presentations. The City reserves the right to invite more or less than this number if the quality of the RFPs so merits, or not to prepare a short list and require formal presentations.

4.3 SELECTION CRITERIA

Selection of Vendor for formal presentations and the one (1) contract/agreement negotiation will be based on an objective evaluation of the following criteria:

A. Cost Criteria – 30 Points

Evaluation of the Cost of the Proposed Maintenance/Repairs/Updates

B. Experience and Qualifications – 35 points

Identify key professionals on the project team, including any subcontractors. Explain their project role, relevant qualifications and experience that demonstrate ability, capacity, skill, and number of years' experience in providing the required services particular for a project of similar size, scope, and complexity. Similar scope and complexity includes but is not limited to design, fabrication, and construction of storage facilities and/or pole barns.

Provide relevant past project experience that demonstrates the specific information for at least five jobs of similar size, scope and complexity performed by the Vendor and each firm on the project team within the past five (5) years. Must provide specific information and show examples of experience of similar size, scope, and complexity. The determination of a project as being of similar size, scope, and complexity, is at the sole discretion of the City of Chattanooga. Past project experience should reflect work performed by the proposing firm and not just by current employees who previously performed work while employed by another firm.

All project information should include the following:

- Project name, geographical location and prime consultant
- Owner/Client for which performed
- Dates of project
- Brief description of project showing how it is similar in scope to this request
- Owner/Client reference contact person, name, number, and email address
- Dollar value of contract
- Dollar value of total construction
- Schedule Duration (Include Original Schedule and Actual Completed Schedule)
- Photos or graphics images that effectively highlight relevance to this project
- If applicable, a description of unusual or unexpected challenges that were faced during construction and how these challenges were overcome
- The City of Chattanooga reserves the right to check any or all references for projects submitted.

Provide the name and relevant experience of the proposed full-time on-site project Manager.

For each proposed team member answer the following:

Claims and Suits

- Has your organization ever failed to complete any work awarded to it?
- Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against you organization of its officers?
- Has your organization filed any law suits or requested arbitration with regard to construction contract within the last five years?
- Has your firm been assessed liquidated damages on any project in the past 5 years? Provide explanation.

Workload

- List the major construction projects your organization has in progress, listing the name of the project, value, percent complete, and anticipated completion date.
- State average annual dollar amount of construction work performed during the past five (5) years.

Safety

- Current Safety Rating
- List any major safety related incidences or violations in the past two (2) years
- State company policy for dealing with subcontractors who fail to follow safety procedures on-site.
- List any safety defects of components installed that occurred during the warranty period. Provide the owners name and location, type of injury, outcome of claim, and resolution to component.

C. Schedule / Project Approach – 35 points

Provide a detailed narrative demonstrating your understanding of the project on how you will accomplish the stated Scope of Work. Describe in detail how this specific job will be approached, including major tasks and sub-tasks to be accomplished. Identify any issues you would anticipate with this type of project, and provide countermeasures you would employ to minimize and overcome those issues.

Describe in detail the role each part of the Vendor's team will play in completing the scope of work. An organization chart should be provided to demonstrate team relationships.

Provide any additional information that communicates how you intend to achieve the required outcomes and how your team may bring any unique insight or creative measures to successfully complete the projects on time and on budget.

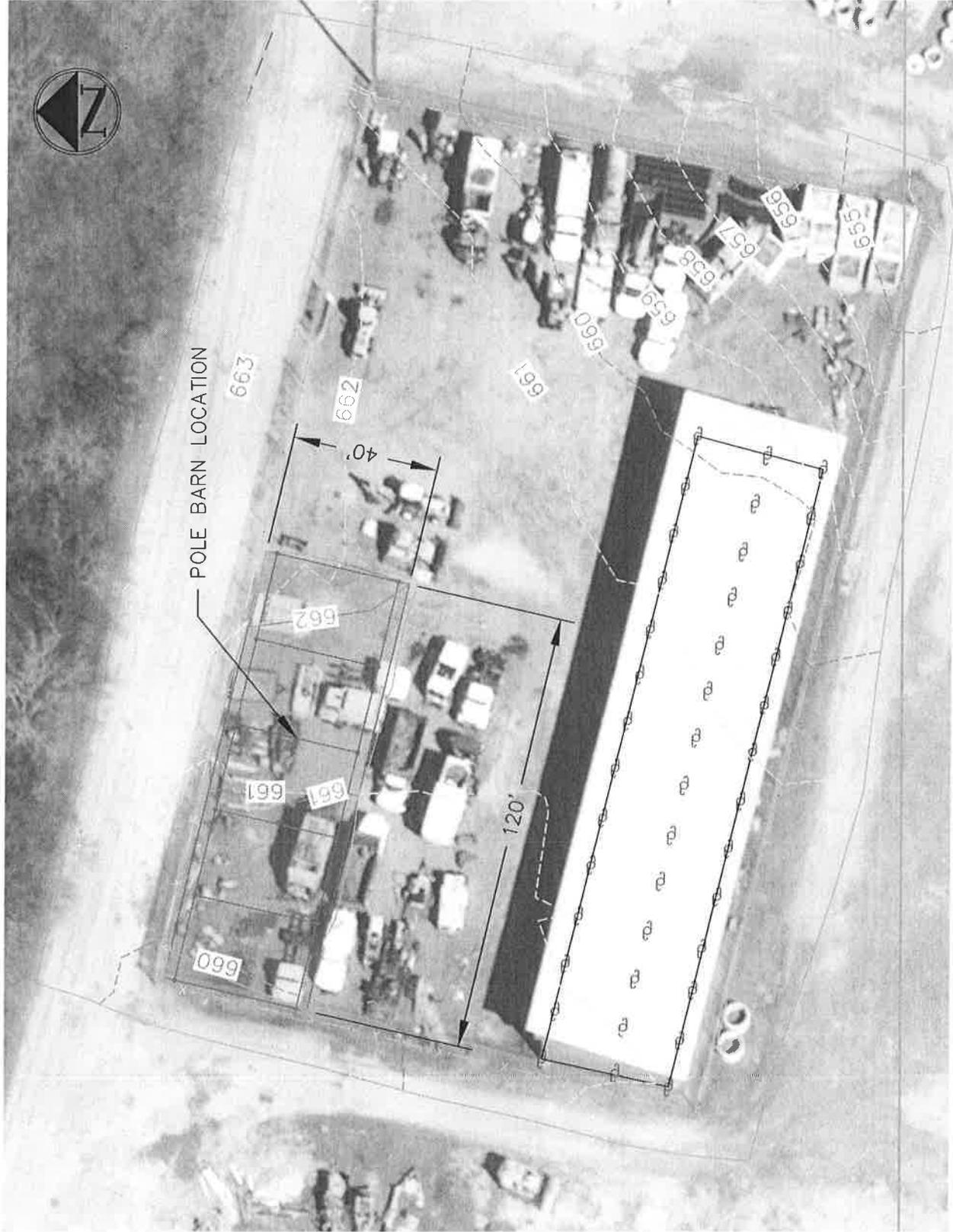
Include a detailed project schedule for completion of the project. Include in the schedule all tasks, subtasks, and major milestones which you believe to be critical to the completion of the project.

4.4 SELECTION OF FINALIST

After the review of the RFPs by the Review Committee and possibly formal presentations, the City may, at its sole option, elect to reject all Proposals or elect to pursue the project further. In the event that the City decides to pursue the project further, the City will select the highest ranked finalist to negotiate an Agreement

Section 5

Site Grading Plan



POLE BARN LOCATION

663

662

661

662

661

661

660

699

659

658

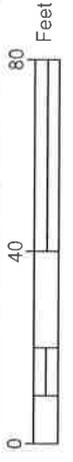
657

656

655

40'

120'



Section 6

Geotechnical Report



September 17, 2019

City of Chattanooga
Department of Public Works
1250 Market Street, Suite 2100
Chattanooga, TN 37402

ATTENTION: Mr. Andrew C. Hutsell, P.E.
ahutsell@chattanooga.gov

Subject: **REPORT OF GEOTECHNICAL EXPLORATION**
New Warehouse / Pole Barn
Moccasin Bend Waste Water Treatment Plant
Chattanooga, Tennessee
GEOservices Project No. 41-19534

Dear Mr. Hutsell:

We are submitting the results of the geotechnical exploration performed for the subject project. The geotechnical exploration was performed in general accordance with GEOS Proposal No. 14-19451.r, dated June 26, 2019. The following report presents our findings and recommendations for the proposed warehouse structure in Chattanooga, Tennessee.

GEOservices sincerely appreciates the opportunity to serve as your geotechnical consultant. Should you have any questions regarding this report, or if we can be of any further assistance, please contact us at your convenience.

Sincerely,
GEOservices, LLC

J. Russell Ashburn III, P.E.
Senior Engineer



Jeremy T. Haley, P.E.
Geotechnical Engineer
TN 117,997

Submitted to:

*City of Chattanooga
Department of Public Works
1250 Market Street, Suite 2100
Chattanooga, TN 37402*

REPORT OF GEOTECHNICAL EXPLORATION

NEW WAREHOUSE / POLE BARN – MOCCASIN BEND WWTP

455 Moccasin Bend Road
Chattanooga, Tennessee

Submitted by:

*GEOServices, LLC
5559 North Lee Highway
Cleveland, Tennessee 37312*

*Phone (423) 614-6471
FAX (423) 614-6479*

GEOS
GEOServices, LLC, Geotechnical and Materials Engineers

GEOSERVICES, LLC
PROJECT NO. 41-19534

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
1.1 PURPOSE	1
1.2 PROJECT INFORMATION AND SITE DESCRIPTION	1
1.3 SCOPE OF STUDY	2
2.0 EXPLORATION AND TESTING PROGRAMS	3
2.1 FIELD EXPLORATION	3
2.2 LABORATORY TEST PROGRAM	3
3.0 SUBSURFACE CONDITIONS	5
3.1 GEOLOGIC CONDITIONS	5
3.2 SUBSURFACE CONDITIONS	6
3.2.1 Surficial Materials	6
3.2.2 Alluvial Soils	6
3.2.3 Subsurface Water	6
3.2.4 Auger Refusal Conditions	7
3.2.5 General	7
4.0 ENVIRONMENTAL ANALYTICAL TESTING	8
5.0 CONCLUSIONS AND RECOMMENDATIONS	9
5.1 SITE ASSESSMENT	9
5.1.1 Moisture Sensitive Alluvial Soils	9
5.1.2 Karst Geology	9
5.2 SITE PREPARATION	10
5.2.1 Subgrade	10
5.2.2 Structural Soil Fill	10
5.2.3 Compacted Crushed Stone Fill	11
5.3 FOUNDATIONS	11
5.3.1 Shallow Foundations	11
5.3.2 Seismic Conditions	12
5.3.3 Slabs-on-Grade	12
5.3.4 Settlement	13
6.0 CONSTRUCTION CONSIDERATIONS	14
6.1 EXCAVATIONS	14
6.2 MOISTURE SENSITIVE SOILS	14
6.3 DRAINAGE AND SURFACE WATER CONCERNS	15
6.4 SINKHOLE CONSIDERATIONS	15
7.0 LIMITATIONS	17
APPENDICES	
APPENDIX A – Figures and Test Boring Records	
APPENDIX B – Soil Laboratory Data	

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this geotechnical exploration was to characterize the subsurface conditions for the design and construction of the proposed warehouse structure at the existing Moccasin Bend Waste Water Treatment Plant in Chattanooga, Tennessee. This report provides recommendations for general site preparation, excavation and fill requirements, foundation recommendations, and slab-on-grade construction recommendations for the proposed warehouse structure.

1.2 PROJECT INFORMATION AND SITE DESCRIPTION

Project information was provided by Mr. Andrew Hutsell with the City of Chattanooga. The site for the proposed warehouse structure is located at the existing Moccasin Bend Waste Water Treatment Plant at 455 Moccasin Bend Road in Chattanooga, Tennessee. The proposed site is located in the “bone yard” portion of the facility which is located along the northern edge of the property. The site currently exists as a gravel lay down area that is currently fenced and used for equipment storage. The site is relatively level, with an elevation change on the order of 1 to 3 feet. Grading information was not available at the time of this report; however, based on the existing grades, we anticipate earthwork cuts and fill will likely be on the order of 3 feet or less in order to establish the final grades at the site.

We understand that the project will consist of the construction of a new warehouse or pole barn structure and the associated parking and drive areas. Based on the information provided, we understand that the structure will either be a metal-framed warehouse building or a wood framed pole barn. Additionally, the structure will have a footprint of approximately 40 feet by 100 feet and will have a concrete slab-on-grade. Detailed structural loading information was not yet available at the time of this report; however, based on our experience with similar construction, we anticipate

maximum column loads will likely be on the order of 100 kips or less and maximum continuous foundation loads will likely be on the order of 2 to 3 kips per linear foot or less.

1.3 SCOPE OF STUDY

This geotechnical exploration involved a site reconnaissance, field drilling, laboratory testing, and engineering analysis. The following sections of this report present discussions of the field exploration, site conditions, and conclusions and recommendations. Following the text of this report, Appendix A presents figures and test boring records. Appendix B presents a summary of laboratory test results.

The scope of services did include baseline testing for metals in the soils based on conversations with you. These results are presented in a separate section. Any other statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes.

2.0 EXPLORATION AND TESTING PROGRAMS

2.1 FIELD EXPLORATION

The site subsurface conditions were explored with a total of four (4) soil test borings (B-1 through B-4). Each of the borings were performed within the area for the proposed warehouse structure. The boring locations and depths were selected by GEOServices personnel in conjunction with our site observations and our conversations with City of Chattanooga personnel. Boring locations are shown on the Boring Location Plan, Figure 3 of Appendix A. The boring locations were located and staked in the field by GEOServices personnel. Drilling was performed on August 15, 2019. The depths reference the ground surface elevations at the site that existed at the time of the exploration. The borings were advanced using 3.25-inch inside diameter hollow stem augers (HSA) with an ATV-mounted drill rig. The drill crew worked in general accordance with ASTM D6151 (HSA Drilling). Sampling of overburden soils was accomplished using the standard penetration test procedure (ASTM D1586). The borings were backfilled with soil cuttings before leaving the site. Detailed test boring records are presented in Appendix A.

In split-spoon sampling, a standard 2-inch O.D. split-spoon sampler is driven into the bottom of the boring with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampler the last 12 inches of the standard 18 inches of total penetration is recorded as the Standard Penetration Resistance (N-value). These N-values are indicated on the boring logs at the testing depth and provide an indication of the relative density of granular materials and strength of cohesive materials.

2.2 LABORATORY TEST PROGRAM

Soil samples collected during drilling were transported to our laboratory for visual classification and laboratory testing. The following laboratory testing was performed on select samples to determine various properties of the soil:

- Atterberg Limits (ASTM D4318): One Atterberg limits test was performed for this project. These tests help us to confirm our visual classifications according to the Unified Soil Classification System (USCS). The plastic limit and liquid limit represent the moisture content at which a cohesive soil changes from a semi-solid to a plastic state and from a plastic state to liquid state, respectively.
- Natural Moisture Content (ASTM D2216): Moisture content determinations were performed on 32 samples for this project. The natural moisture content is defined as the ratio of the weight of water present in the soil to the dry weight of soil.

The test results are presented on individual laboratory data sheets and a Soil Data Summary, both enclosed in Appendix B.

3.0 SUBSURFACE CONDITIONS

3.1 GEOLOGIC CONDITIONS

The project site, as most of east Tennessee, lies in the Appalachian Valley and Ridge Physiographic Province. The Province is characterized by elongated, northeasterly-trending ridges formed on highly resistant sandstones and shales. Between ridges, broad valleys and rolling hills are formed primarily on less resistant limestones, dolomites and shales.

Published geologic information indicates that the site is underlain by Newman Limestone. The Newman Limestone varies considerably across the plateau and consists of gray massive limestone, shaly limestone or calcareous shale or siltstone. These rock units weather to produce a thick residual clay overburden which is somewhat cherty. The shalier limestone produces a siltier clay. Due to the proximity to the Tennessee River, the subsurface conditions at this site are more influenced by water-deposited alluvial soils than the underlying geology.

Since the bedrock formation at the site contains limestone, the site is susceptible to the typical carbonate hazards of irregular weathering, cave and cavern conditions, and overburden sinkholes. Carbonate rock, while appearing very hard and resistant, is soluble in slightly acidic water. This characteristic, plus differential weathering of the bedrock mass, is responsible for the hazards. Of these hazards, the occurrence of sinkholes is potentially the most damaging to overlying soil supported structures. In East Tennessee, sinkholes occur primarily due to differential weathering of the bedrock and "flushing" or "raveling" of overburden soils into the cavities in the bedrock. The loss of solids creates a cavity or "dome" in the overburden. Growth of the dome over time or excavation over the dome can create a condition in which rapid, local subsidence or collapse of the roof of the dome occurs.

3.2 SUBSURFACE CONDITIONS

3.2.1 Surficial Materials

A surficial layer of gravel mixed with clay ranging from 12 to 24 inches in thickness was encountered in each of the four borings. Additionally, slag fragments were observed within the above-mentioned mixture in two of the borings (B-1 and B-3). Beneath this surficial layer, alluvial soils were encountered to the predetermined boring termination depth of 30 feet.

3.2.2 Alluvial Soils

Beneath the surficial layer in each of the four borings, alluvial soils were encountered to the boring termination depth of 30 feet. Alluvial soils are generally classified as soils that has been transported and placed by water. We anticipate that the alluvium has been placed over many years by the adjacent Tennessee River. The alluvial soils generally consisted of brown clays with sand, brown sandy clays, and brown sandy silts. The N-values of the alluvium ranged from 5 to 21 blows per foot (bpf), indicating a consistency of firm to very stiff. The alluvium was generally stiff in consistency. The firm soils were isolated to deeper samples (greater than 20 feet) in each of the borings. The natural moisture contents of the residuum ranged from 14.9 to 27.8 percent and generally increased with depth. Atterberg limits testing on one select sample of the alluvium revealed a liquid limit (LL) of 36 percent and a plasticity index (PI) of 19 percent. These soils are classified as CL (lean clay) in general accordance with the Unified Soil Classification System.

3.2.3 Subsurface Water

Subsurface water was observed in each of the four borings at depths ranging from 26 to 28 feet at the time of drilling. Subsurface water levels may fluctuate due to seasonal changes in precipitation amounts and the levels of the adjacent Tennessee River. Additionally, discontinuous zones of perched water may exist within the overburden and/or at the contact with bedrock. The groundwater information presented in this report is the information that was collected at the time of our field activities.

3.2.4 Auger Refusal Conditions

Auger refusal materials were not encountered in each of the four borings during field exploration. Refusal is a designation applied to any material that cannot be penetrated by the power auger. Auger refusal may indicate dense gravel or cobble layers, boulders, rock ledges or pinnacles, or the top of continuous bedrock.

3.2.5 General

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in Appendix A should be reviewed for specific information at individual boring locations. The depth and thickness of the subsurface strata indicated on the boring cross-sections were generalized from and interpolated between test locations. The transition between materials will be more or less gradual than indicated and may be abrupt. Information on actual subsurface conditions exists only at the specific boring locations and is relevant to the time the exploration was performed. Variations may occur and should be expected between boring locations. The stratification lines were used for our analytical purposes and, unless specifically stated otherwise, should not be used as the basis for design or construction cost estimates.

4.0 ENVIRONMENTAL ANALYTICAL TESTING

Due to the past uses of this portion of the property, you requested that analytical testing of selected soil samples be performed. These tests were for RCRA metals which consist of arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. A total of four selected samples (one from B-1, one from B-2, and two from B-3) were tested for these metals. Based on these tests, only arsenic had levels greater than the Regional Screen Limit (RSL) for industrial sites. Due to the fact that soils in this area naturally contain arsenic, we are of the opinion that none of the RCRA metal concentrations are at actionable levels.

In addition, one sample (SB-3A) was tested for polychlorinated biphenyls (PCBs). PCB's were not detected at the Reporting Limits or Method Detection Limits in this sample. The results of these all the analytical tests are presented in Appendix B – Soil Laboratory Data.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 SITE ASSESSMENT

The results of the field exploration indicate that the site is adaptable for the proposed construction, however, there are some challenges associated with the development of this site. These challenges include the moisture sensitive soils and the underlying karst geology.

5.1.1 Moisture Sensitive Alluvial Soils

The fine-grained alluvial soils (sandy clays and sandy silts) encountered at this site will be sensitive to disturbances caused by construction traffic and changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and support capabilities. Construction traffic patterns should be varied to prevent the degradation of previously stable subgrade. These siltier soils generally degrade quicker than other fine-grained soils (i.e. clays) and could be affected by even the slightest change in moisture content. We caution if site grading is performed during the wet weather season, methods such as discing and allowing the material to dry will be required to meet the required compaction recommendations. It will, therefore, be advantageous to perform earthwork activities during dry weather.

5.1.2 Karst Geology

A certain degree of risk with respect to sinkhole formation and subsidence should be considered with any site located within geologic areas underlain by potentially soluble rock units. While a rigorous effort to assess the potential for sinkhole formation on this site was beyond the scope of this evaluation, our borings did not encounter obvious indications of sinkhole development. Additionally, a review of the USGS topographic map of the area did not reveal the presence of any closed depressions, which may denote past sinkhole activity, in the vicinity of the project site. Based on these findings and our experience with this formation at other sites, we consider that

this site has no greater risk for sinkhole activity than other sites in the immediate vicinity of this site.

5.2 SITE PREPARATION

5.2.1 Subgrade

Gravel, topsoil, construction debris, rock fragments greater than 6 inches, and other debris should be removed from the proposed construction areas. In previously developed areas, it is often common to find buried zones of construction debris. If these materials are encountered, they should be undercut and replaced at the discretion of the geotechnical engineer.

After completion of any stripping operations and any required excavations to reach subgrade level, we recommend that the subgrade be proofrolled with a fully-loaded, tandem-axle dump truck or other pneumatic-tired construction equipment of similar weight. The geotechnical engineer or his qualified representative should observe proofrolling. Areas judged to perform unsatisfactorily should be remediated at the geotechnical engineer's discretion. Typically, remedial options consist of undercutting and replacement with structural soil fill or dense graded aggregate.

5.2.2 Structural Soil Fill

Material considered suitable for use as compacted fill should be clean soil free of organics, trash, and other deleterious material, containing no rock fragments greater than 6 inches in any one dimension. Preferably, borrow material to be used as structural soil fill should have a standard Proctor maximum dry density of 90 pounds per cubic foot (pcf) or greater and a plasticity index (PI) of 35 percent or less. All material being used as soil fill should be tested and confirmed by the geotechnical engineer to be in accordance with the project requirements before being placed. Based on limited laboratory testing, we anticipate the on-site soils are suitable for use as structural soil fill. Structural fill should be placed in loose, horizontal lifts not exceeding 8 inches in thickness. Each lift should be compacted to at least 95 percent of maximum dry density per the standard

Proctor method (ASTM D698) and within the range of minus 2 percent to plus 3 percent of the optimum moisture content. Each lift should be compacted and tested by geotechnical personnel to confirm that the contractor's method is capable of achieving the project requirements before placing any subsequent lifts. Any areas which have become soft or frozen should be removed before additional structural fill is placed.

5.2.3 Compacted Crushed Stone Fill

Compacted crushed stone fill should be Type A, Class A, and Grading E in accordance with Section 903.05 of the Tennessee Department of Transportation specifications. The crushed stone fill should be placed in loose, horizontal lifts not exceeding 10 inches in loose thickness. Each lift should be compacted to at least 98 percent of maximum dry density per the standard Proctor method (ASTM D698). Each lift should be compacted and tested by geotechnical personnel to confirm that the contractor's method is capable of achieving the project requirements before placing any subsequent lifts.

5.3 FOUNDATIONS

5.3.1 Shallow Foundations

Foundations for the proposed structures are anticipated to bear in stiff or better newly placed fill soils or alluvial soils. The recommended allowable bearing capacity for design of the foundations is 2,500 pounds per square foot (psf). We recommend that continuous foundations be a minimum of 18 inches wide and isolated spread footings be a minimum of 24 inches wide to reduce the possibility of a localized punching shear failure. All exterior footings should be designed to bear at least 18 inches below finished exterior grade to protect against frost heave.

Foundation subgrade observations should be performed by a GEOServices geotechnical engineer, or his qualified representative, so that the recommendations provided in this report are consistent with the site conditions encountered. A dynamic cone penetrometer (DCP) is commonly utilized to provide information that is compared to the data obtained in the geotechnical report. Where

unacceptable materials are encountered, the material should be excavated to stiff, suitable soils or remediated at the geotechnical engineer's direction. Typical remedial measures consist of undercutting, overexcavation, or combinations thereof.

5.3.2 Seismic Conditions

International Building Code, 2012

The project site is located approximately 274 miles from the New Madrid seismic source zone as designated by the United States Geologic Survey. In accordance with the International Building Code, 2012, we have provided the following table of seismic design information. After evaluating the subsurface conditions at each boring individually, it was determined that each structure would be located within seismic site class D and seismic design category C. A table follows, showing the calculated spectral response accelerations for both a short and 1-second period.

Structure	S_s g	S₁ g	S_{Ds} g	S_{D1} G
Warehouse / Pole Barn	0.369	0.124	0.370	0.191

5.3.3 Slabs-on-Grade

For slab-on-grade construction, the site should be prepared as described previously. We recommend that the subgrade be topped with a minimum 4-inch layer of crushed stone (mineral aggregate base or a dense graded aggregate base) in the building area to act as a capillary moisture layer. The subgrade should be proofrolled and approved prior to the placement of the crushed stone. Based on the conditions encountered on this site, we recommend that the floor slabs bearing in soil be designed using a subgrade modulus of 125 pounds per cubic inch (pci). This modulus is based on a 1 foot by 1 foot area and should be adjusted for wider loads.

5.3.4 Settlement

We have estimated the total and differential settlements expected at this site based on the Federal Highways Administration (FHWA) Empirical Settlement Analysis Procedure. This FHWA empirical method allows the use of the SPT N-values in this calculation and includes the type of soil encountered. Based on the conditions encountered in our borings and the assumed structural loading mentioned previously, maximum total settlements of less than 1 inch and maximum differential settlements of less than $\frac{3}{4}$ inches in 40 feet should be expected. If the loads vary greatly from those assumed at the time of this analysis, GEOServices should be contacted to provide updated anticipated settlements.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 EXCAVATIONS

Excavations should be sloped or shored in accordance with local, state, and federal regulations, including OSHA (29 CFR Part 1926) excavation trench safety standards. The contractor is usually solely responsible for site safety. This information is provided only as a service and under no circumstances should GEOServices be assumed to be responsible for construction site safety.

6.2 MOISTURE SENSITIVE SOILS

The fine-grained soils encountered at this site will be sensitive to disturbances caused by construction traffic and changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and support capabilities. Construction traffic patterns should be varied to prevent the degradation of previously stable subgrade. In addition, plastic soils which become wet, may be slow to dry and thus significantly retard the progress of grading and compaction activities. We caution if site grading is performed during the wet weather season, methods such as discing and allowing the material to dry will be required to meet the required compaction recommendations. It will, therefore, be advantageous to perform earthwork and foundation construction activities during dry weather. Climate data for Chattanooga, Tennessee obtained from Weatherbase indicate in the following table the average monthly precipitation. The average amount of precipitation does not vary much throughout the year. However, December through March is typically the difficult grading period due to the limited drying conditions that exist.

Precipitation Averages

Month	Monthly Precipitation Average (Inches)	Month	Monthly Precipitation Average (Inches)
January	4.9	July	4.9
February	4.8	August	3.5
March	5.0	September	4.0
April	4.0	October	3.3
May	4.1	November	5.0
June	4.1	December	4.9

6.3 DRAINAGE AND SURFACE WATER CONCERNS

To reduce the potential for undercut and construction induced sinkholes, water should not be allowed to collect in the foundation excavations, on floor slab areas, or on prepared subgrades of the construction area either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater, subsurface water, or surface runoff. Positive site surface drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs. The grades should be sloped away from the building and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas of the building.

6.4 SINKHOLE CONSIDERATIONS

There is some inherent risk associated with building on any site underlain by carbonate rock. This risk can be reduced but not eliminated by preparing the site as described in this report. At this site, control of surface water during construction and over the project life will be very important to reduce the potential for sinkhole development. If a sinkhole develops, the

appropriate corrective action is dependent on the size and location of the sinkhole. As described herein, GEOServices should be retained to observe site and subgrade preparation activities. If sinkhole conditions are observed, the type of corrective action is most appropriately determined by GEOServices on a case-by-case basis.

7.0 LIMITATIONS

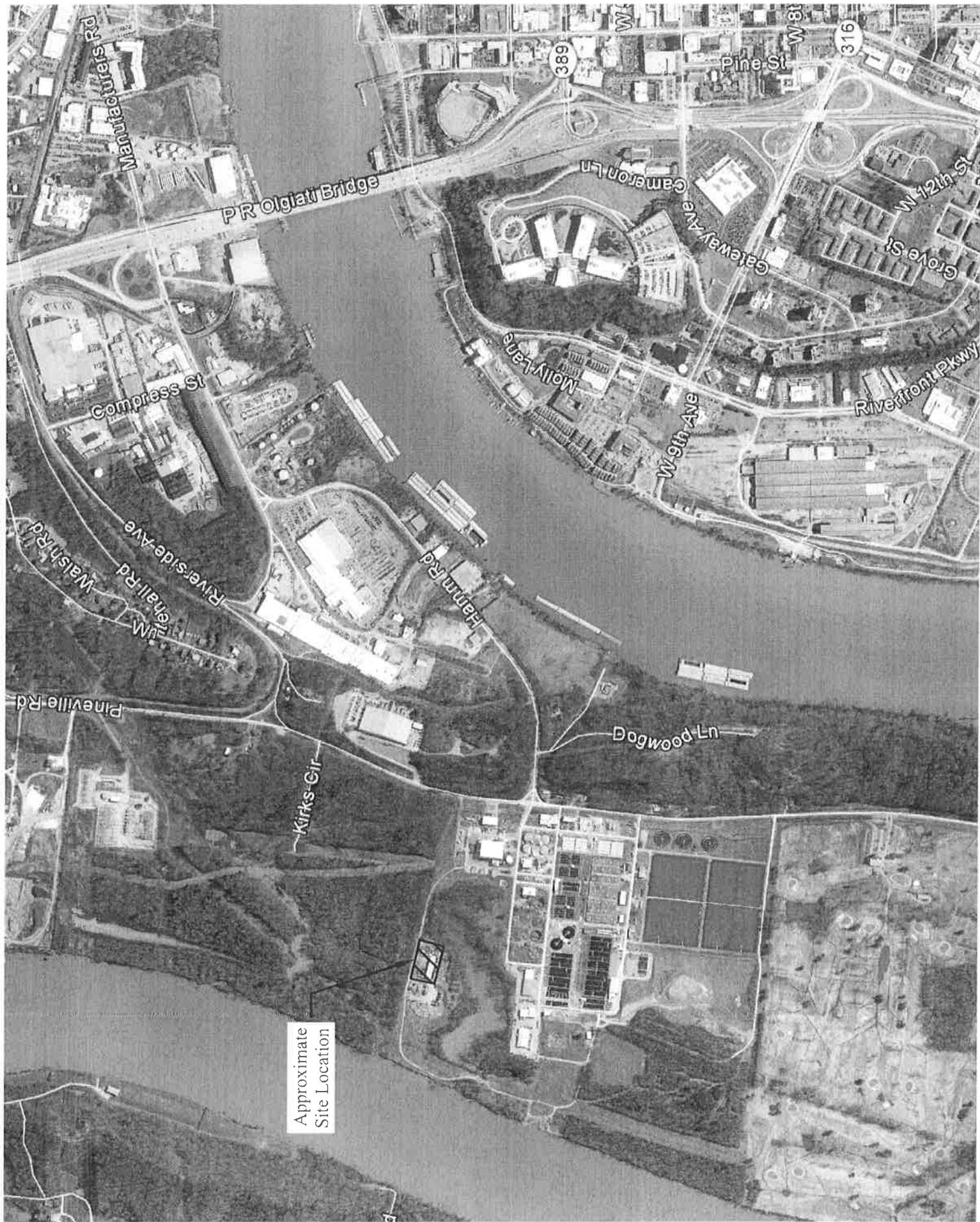
This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. This report is for our geotechnical work only, and only limited environmental assessment efforts have been performed. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, express or implied, is made.

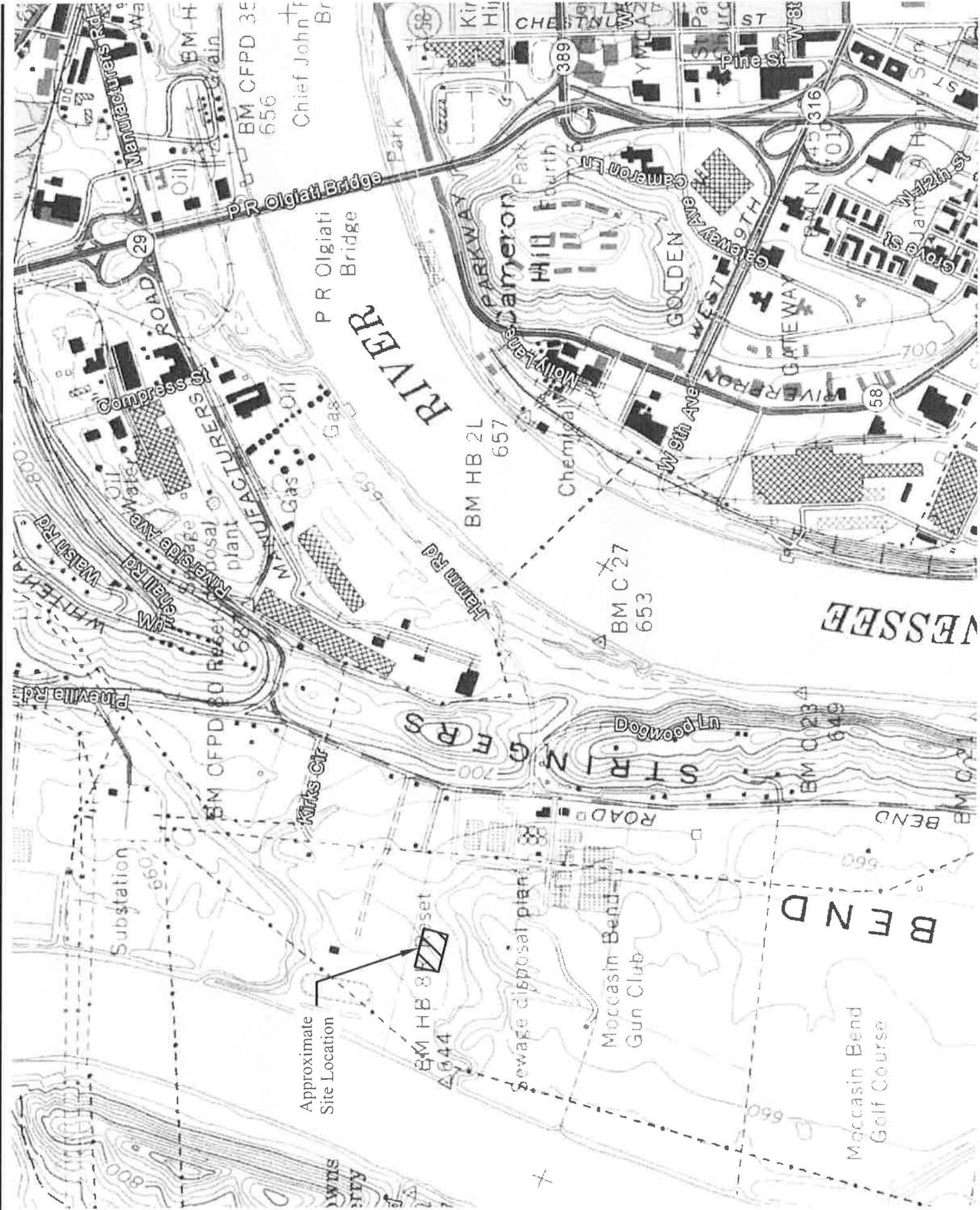
The analyses and recommendations submitted herein are based, in part, upon the data obtained from the exploration. The nature and extent of variations between the borings will not become evident until construction. We recommend that GEOServices be retained to observe the project construction in the field. GEOServices cannot accept responsibility for conditions which deviate from those described in this report if not retained to perform construction observation and testing. If variations appear evident, then we will re-evaluate the recommendations of this report. In the event that any changes in the nature, design, or location of the project are planned, the conclusions and recommendations contained in this report will not be considered valid unless the changes are reviewed and conclusions modified or verified in writing. Also, if the scope of the project should change significantly from that described herein, these recommendations may have to be re-evaluated.

APPENDIX A

Figures and Test Boring Records

Approximate
Site Location





Approximate
Site Location

BM HB 8
644

Kirks Cir

Substation

BM CFPD 30
658

Compress St

ROAD 29

P.R. Olgiati
Bridge

P R Olgiati
Bridge

RIVER

BM HB 2L
657

Hamm Rd

BM C 27
653

Dogwood Ln

Sewage disposal plant

Moccasin Bend
Gun Club

BEND

Moccasin Bend
Golf Course

VESSELS

B BEND

BM C 234
649

STRIN G

F R S

ROAD

GOLDEN
WEST 9TH

GATEWAY
RIVER

W 9th Ave

W 12th St

W 13th St

W 14th St

W 15th St

W 16th St

W 17th St

W 18th St

W 19th St

W 20th St

W 21st St

W 22nd St

W 23rd St

W 24th St

W 25th St

W 26th St

W 27th St

W 28th St

W 29th St

W 30th St

W 31st St

W 32nd St

W 33rd St

W 34th St

W 35th St

W 36th St

W 37th St

W 38th St

W 39th St

W 40th St

W 41st St

W 42nd St

W 43rd St

W 44th St

W 45th St

W 46th St

W 47th St

W 48th St

W 49th St

W 50th St

W 51st St

W 52nd St

W 53rd St

W 54th St

W 55th St

W 56th St

W 57th St

W 58th St

W 59th St

W 60th St

W 61st St

W 62nd St

W 63rd St

W 64th St

W 65th St

W 66th St

W 67th St

W 68th St

W 69th St

W 70th St

W 71st St

W 72nd St

W 73rd St

W 74th St

W 75th St

W 76th St

W 77th St

W 78th St

W 79th St

W 80th St

W 81st St

W 82nd St

W 83rd St

W 84th St

W 85th St

W 86th St

W 87th St

W 88th St

W 89th St

W 90th St

W 91st St

W 92nd St

W 93rd St

W 94th St

W 95th St

W 96th St

W 97th St

W 98th St

W 99th St

W 100th St

W 101st St

W 102nd St

W 103rd St

W 104th St

W 105th St

W 106th St

W 107th St

W 108th St

W 109th St

W 110th St

W 111th St

W 112th St

W 113th St

W 114th St

W 115th St

W 116th St

W 117th St

W 118th St

W 119th St

W 120th St

W 121st St

W 122nd St

W 123rd St

W 124th St

W 125th St

W 126th St

W 127th St

W 128th St

W 129th St

W 130th St

W 131st St

W 132nd St

W 133rd St

W 134th St

W 135th St

W 136th St

W 137th St

W 138th St

W 139th St

W 140th St

W 141st St

W 142nd St

W 143rd St

W 144th St

W 145th St

W 146th St

W 147th St

W 148th St

W 149th St

W 150th St

W 151st St

W 152nd St

W 153rd St

W 154th St

W 155th St

W 156th St

W 157th St

W 158th St

W 159th St

W 160th St

W 161st St

W 162nd St

W 163rd St

W 164th St

W 165th St

W 166th St

W 167th St

W 168th St

W 169th St

W 170th St

W 171st St

W 172nd St

W 173rd St

W 174th St

W 175th St

W 176th St

W 177th St

W 178th St

W 179th St

W 180th St

W 181st St

W 182nd St

W 183rd St

W 184th St

W 185th St

W 186th St

W 187th St

W 188th St

W 189th St

W 190th St

W 191st St

W 192nd St

W 193rd St

W 194th St

W 195th St

W 196th St

W 197th St

W 198th St

W 199th St

W 200th St

W 201st St

W 202nd St

W 203rd St

W 204th St

W 205th St

W 206th St

W 207th St

W 208th St

W 209th St

W 210th St

W 211st St

W 212nd St

W 213rd St

W 214th St

W 215th St

W 216th St

W 217th St

W 218th St

W 219th St

W 220th St

W 221st St

W 222nd St

W 223rd St

W 224th St

W 225th St

W 226th St

W 227th St

W 228th St

W 229th St

W 230th St

W 231st St

W 232nd St

W 233rd St

W 234th St

W 235th St

W 236th St

W 237th St

W 238th St

W 239th St

W 240th St

W 241st St

W 242nd St

W 243rd St

W 244th St

W 245th St

W 246th St

W 247th St

W 248th St

W 249th St

W 250th St

W 251st St

W 252nd St

W 253rd St

W 254th St

W 255th St

W 256th St

W 257th St

W 258th St

W 259th St

W 260th St

W 261st St

W 262nd St

W 263rd St

W 264th St

W 265th St

W 266th St

W 267th St

W 268th St

W 269th St

W 270th St

W 271st St

W 272nd St

W 273rd St

W 274th St

W 275th St

W 276th St

W 277th St

W 278th St



GENERAL NOTES

FINE AND COARSE GRAINED SOIL PROPERTIES

PARTICLE SIZE

BOULDERS:	GREATER THAN 300 mm
COBBLES:	75 mm to 300 mm
GRAVEL:	4.74 mm to 75 mm
COARSE SAND:	2 mm to 4.74 mm
MEDIUM SAND:	0.425 mm to 2 mm
FINE SAND:	0.075 mm to 0.425 mm
SILTS & CLAYS:	LESS THAN 0.075 mm

COARSE GRAINED SOILS (SANDS & GRAVELS)

N-VALUE	RELATIVE DENSITY
0 - 4	VERY LOOSE
5 - 10	LOOSE
11 - 30	MEDIUM DENSE
31 - 50	DENSE
OVER 50	VERY DENSE

FINE GRAINED SOILS (SILTS & CLAYS)

N-VALUE	CONSISTENCY	Qu, PSF
0 - 2	VERY SOFT	0 - 500
3 - 4	SOFT	500 - 1000
5 - 8	FIRM	1000 - 2000
9 - 15	STIFF	2000 - 4000
16 - 30	VERY STIFF	4000 - 8000
OVER 31	HARD	8000 +

STANDARD PENETRATION TEST (ASTM D1586)

THE STANDARD PENETRATION TEST AS DEFINED BY ASTM D1586 IS A METHOD TO OBTAIN A DISTURBED SOIL SAMPLE FOR EXAMINATION AND TESTING AND TO OBTAIN RELATIVE DENSITY AND CONSISTENCY INFORMATION. THE 1.4 INCH I.D./2.0 INCH O.D. SAMPLER IS DRIVEN 3-SIX INCH INCREMENTS WITH A 140 LB. HAMMER FALLING 30 INCHES. THE BLOW COUNTS REQUIRED TO DRIVE THE SAMPLER THE FINAL 2 INCREMENTS ARE ADDED TOGETHER AND DESIGNATED THE N-VALUE. AT TIMES, THE SAMPLER CAN NOT BE DRIVEN THE FULL 18 INCHES. THE FOLLOWING REPRESENTS OUR INTERPRETATION OF THE STANDARD PENETRATION TEST WITH VARIATIONS.

BLOWS/FOOT (N-VALUE)

DESCRIPTION

25.....	25 BLOWS DROVE SAMPLER 12" AFTER INITIAL 6" SEATING
75/10".....	75 BLOWS DROVE SAMPLER 10" AFTER INITIAL 6" SEATING
50/PR.....	PENETRATION REFUSAL OF SAMPLER AFTER INITIAL 6" SEATING

SAMPLING SYMBOLS

ST:	UNDISTURBED SAMPLE
SS:	SPLIT SPOON SAMPLE
CORE:	ROCK CORE SAMPLE
AU:	AUGER OR BAG SAMPLE

SOIL PROPERTY SYMBOLS

N:	STANDARD PENETRATION, BPF
M:	MOISTURE CONTENT %
LL:	LIQUID LIMIT %
PI:	PLASTICITY INDEX %
Qp:	POCKET PENETROMETER VALUE, TSF
Qu:	UNCONFINED COMPRESSIVE STRENGTH, TSF
DUW:	DRY UNIT WEIGHT, PCF

ROCK PROPERTIES

ROCK HARDNESS

ROCK QUALITY DESIGNATION (RQD)

PERCENT	QUALITY
90 TO 100	EXCELLENT
75 TO 90	GOOD
50 TO 75	FAIR
25 TO 50	POOR
0 TO 25	VERY POOR

VERY SOFT:	ROCK DISINTEGRATES OR EASILY COMPRESSES TO TOUCH: CAN BE HARD TO VERY HARD SOIL.
SOFT:	ROCK IS COHERANT BUT BREAKS EASILY TO THUMB PRESSURE AT SHARP EDGES AND CRUMBLES WITH FIRM HAND PRESSURE.
MODERATELY HARD:	SMALL PIECES CAN BE BROKEN OFF ALONG SHARP EDGES BY CONSIDERABLE HARD THUMB PRESSURE: CAN BE BROKEN BY LIGHT HAMMER BLOWS.
HARD:	ROCK CAN NOT BE BROKEN BY THUMB PRESSURE, BUT CAN BE BROKEN BY MODERATE HAMMER BLOWS.
VERY HARD:	ROCK CAN BE BROKEN BY HEAVY HAMMER BLOWS.



**Moccasin Bend Waste Water Treatment Plant
New Warehouse / Pole Barn
Chattanooga, Tennessee**
GEOservices Project No.: 41-19534

LOG OF BORING B-1
SHEET 1 OF 2

DRILLER: Al Bisching
ON-SITE REP: Madeline Phillips

BORING NO. / LOCATION: B-1 DRY ON COMPLETION? No

DATE: August 15, 2019 SURFACE ELEV.: _____ FT.
REFUSAL: No DEPTH _____ FT. ELEV. _____ FT.
SAMPLED: 30.0 FT. 9.1 M
TOP OF ROCK DEPTH _____ FT. ELEV. _____ FT.
BEGAN CORING DEPTH _____ FT. ELEV. _____ FT.
FOOTAGE CORED (LF) _____ FT.
BOTTOM OF HOLE DEPTH: 30.0 FT. ELEV. -30.00 FT.

WATER LEVEL DATA (IF APPLICABLE)
COMPLETION: DEPTH 26.0 FT.
ELEV. -26.0 FT.
AFTER 24 HRS. DEPTH TNP FT.
ELEV. _____ FT.

BORING ADVANCED BY: _____ POWER AUGERING X WASHBORING _____

STRATUM DEPTH	SAMPLE DEPTH		SAMPLE OR RUN NO.	SAMPLE TYPE	FIELD RESULTS		LABORATORY RESULTS			STRATUM DESCRIPTION
	FT.	ELEV.			FROM FT.	TO FT.	N-Value	Qp	LL	
0.0 - 0.5										Gravel / Clay / Slag Mix
1.0 - 1.5			1	SS	13				17.9	
2.5 - 3.0			2	SS	21				18.9	
5.0 - 5.5			3	SS	20				19.0	
7.5 - 8.0			4	SS	11				19.7	
10.0 - 10.5			5	SS	11				16.6	
12.5 - 13.0										Lean CLAY (CL) with sand - brown; very stiff to stiff; moist (ALLUVIUM)
15.0 - 15.5			6	SS	12				16.9	
17.5 - 18.0										
20.0 - 20.5										

REMARKS: _____



**Moccasin Bend Waste Water Treatment Plant
New Warehouse / Pole Barn
Chattanooga, Tennessee
GEOservices Project No.: 41-19534**

LOG OF BORING B-1
SHEET 2 OF 2

DRILLER Al Bisching
ON-SITE REP. Madeline Phillips

BORING NO. / LOCATION B-1

DRY ON COMPLETION ? No

DATE August 15, 2019 SURFACE ELEV. _____ FT.
REFUSAL: No DEPTH _____ FT. ELEV. _____ FT.
SAMPLED 30.0 FT. 9.1 M
TOP OF ROCK DEPTH _____ FT. ELEV. _____ FT.
BEGAN CORING DEPTH _____ FT. ELEV. _____ FT.
FOOTAGE CORED (LF) _____ FT.
BOTTOM OF HOLE DEPTH 30.0 FT. ELEV. -30.00 FT.

WATER LEVEL DATA (IF APPLICABLE)
COMPLETION: DEPTH 26.0 FT.
ELEV. -26.0 FT.
AFTER 24 HRS. DEPTH TNP FT.
ELEV. _____ FT.

BORING ADVANCED BY: _____ POWER AUGERING X WASHBORING _____

STRATUM DEPTH FT. ELEV.	SAMPLE DEPTH		SAMPLE OR RUN NO.	SAMPLE TYPE	FIELD RESULTS		LABORATORY RESULTS			STRATUM DESCRIPTION
	FROM FT.	TO FT.			N-Value	Qp	LL	PI	%M	
22.5 -22.5										(continued)
25.0 -25.0	23.5	25.0	7	SS	6				24.1	
30.0 -30.0	28.5	30.0	8	SS	8				27.6	Boring Terminated at 30 feet
32.5 -32.5										
35.0 -35.0										
37.5 -37.5										
40.0 -40.0										

REMARKS: _____



**Moccasin Bend Waste Water Treatment Plant
New Warehouse / Pole Barn
Chattanooga, Tennessee
GEOservices Project No.: 41-19534**

LOG OF BORING B-2
SHEET 1 OF 2

DRILLER: Al Bisching
ON-SITE REP.: Madeline Phillips

BORING NO. / LOCATION: B-2 DRY ON COMPLETION? No

DATE: August 15, 2019 SURFACE ELEV.: _____ FT.
REFUSAL: No DEPTH _____ FT. ELEV. _____ FT.
SAMPLED: 30.0 FT. 9.1 M
TOP OF ROCK DEPTH _____ FT. ELEV. _____ FT.
BEGAN CORING DEPTH _____ FT. ELEV. _____ FT.
FOOTAGE CORED (LF) _____ FT.
BOTTOM OF HOLE DEPTH 30.0 FT. ELEV. -30.00 FT.

WATER LEVEL DATA (IF APPLICABLE)
COMPLETION: DEPTH 27.0 FT.
ELEV. -27.0 FT.
AFTER 24 HRS. DEPTH TNP FT.
ELEV. _____ FT.

BORING ADVANCED BY: POWER AUGERING X WASHBORING _____

STRATUM DEPTH FT. ELEV.	SAMPLE DEPTH		SAMPLE OR RUN NO.	SAMPLE TYPE	FIELD RESULTS		LABORATORY RESULTS			STRATUM DESCRIPTION
	FROM FT.	TO FT.			N-Value	Qp	LL	PI	%M	
2.5 -2.5	1.0	2.5	1	SS	12				17.1	Gravel / Clay Mix
5.0 -5.0	3.5	5.0	2	SS	11				17.0	Lean CLAY (CL) with sand - brown; stiff; moist (ALLUVIUM)
7.5 -7.5	6.0	7.5	3	SS	13				17.3	
10.0 -10.0	8.5	10.0	4	SS	12				14.9	
15.0 -15.0	13.5	15.0	5	SS	9				20.8	Sandy CLAY (CL) - brown; stiff; moist (ALLUVIUM)
20.0 -20.0	18.5	20.0	6	SS	9				21.9	

REMARKS: _____



**Moccasin Bend Waste Water Treatment Plant
New Warehouse / Pole Barn
Chattanooga, Tennessee
GEOservices Project No.: 41-19534**

LOG OF BORING B-2
SHEET 2 OF 2

DRILLER Al Bisching
ON-SITE REP. Madeline Phillips

BORING NO. / LOCATION B-2 DRY ON COMPLETION ? No

DATE August 15, 2019 SURFACE ELEV. _____ FT.

REFUSAL: No DEPTH _____ FT. ELEV. _____ FT.

SAMPLED 30.0 FT. 9.1 M

TOP OF ROCK DEPTH _____ FT. ELEV. _____ FT.

BEGAN CORING DEPTH _____ FT. ELEV. _____ FT.

FOOTAGE CORED (LF) _____ FT.

BOTTOM OF HOLE DEPTH 30.0 FT. ELEV. -30.00 FT.

WATER LEVEL DATA (IF APPLICABLE)

COMPLETION: DEPTH 27.0 FT.
ELEV. -27.0 FT.

AFTER 24 HRS. DEPTH TNP FT.
ELEV. _____ FT.

BORING ADVANCED BY: _____ POWER AUGERING X WASHBORING _____

STRATUM DEPTH	SAMPLE DEPTH		SAMPLE OR RUN NO.	SAMPLE TYPE	FIELD RESULTS		LABORATORY RESULTS			STRATUM DESCRIPTION
	FT.	ELEV.			FROM FT.	TO FT.	N-Value	Qp	LL	
22.5	-22.5									Sandy SILT (ML) - brown; firm to stiff; moist to very moist (ALLUVIUM)
25.0	-25.0	23.5	25.0	7	SS	6			21.9	
27.5	-27.5									Boring Terminated at 30 feet
30.0	-30.0	28.5	30.0	8	SS	10			27.8	
32.5	-32.5									
35.0	-35.0									
37.5	-37.5									
40.0	-40.0									

REMARKS: _____



**Moccasin Bend Waste Water Treatment Plant
New Warehouse / Pole Barn
Chattanooga, Tennessee
GEOservices Project No.: 41-19534**

LOG OF BORING B-3
SHEET 1 OF 2

DRILLER: Al Bisching
ON-SITE REP: Madeline Phillips

BORING NO. / LOCATION: B-3 DRY ON COMPLETION? No

DATE: August 15, 2019 SURFACE ELEV.: _____ FT.
REFUSAL: No DEPTH _____ FT. ELEV. _____ FT.
SAMPLED: 30.0 FT. 9.1 M
TOP OF ROCK DEPTH _____ FT. ELEV. _____ FT.
BEGAN CORING DEPTH _____ FT. ELEV. _____ FT.
FOOTAGE CORED (LF) _____ FT.
BOTTOM OF HOLE DEPTH: 30.0 FT. ELEV.: -30.00 FT.

WATER LEVEL DATA (IF APPLICABLE)
COMPLETION: DEPTH 27.0 FT.
ELEV. -27.0 FT.
AFTER 24 HRS. DEPTH TNP FT.
ELEV. _____ FT.

BORING ADVANCED BY: _____ POWER AUGERING X WASHBORING _____

STRATUM DEPTH	SAMPLE DEPTH		SAMPLE OR RUN NO.	SAMPLE TYPE	FIELD RESULTS		LABORATORY RESULTS			STRATUM DESCRIPTION
	FT.	ELEV.			FROM FT.	TO FT.	N-Value	Qp	LL	
0.0 - 0.5										Gravel / Clay / Slag Mix
1.0 - 1.5			1	SS	13				19.4	Lean CLAY (CL) with sand - brown; stiff; moist (ALLUVIUM)
2.5 - 3.0			2	SS	9		36	19	18.9	
4.0 - 4.5			3	SS	11				19.4	
5.0 - 5.5			4	SS	12				19.2	Sandy CLAY (CL) - brown; stiff; moist (ALLUVIUM)
6.0 - 6.5										
7.5 - 8.0			5	SS	12				16.6	
8.5 - 9.0			6	SS	9				21.8	
10.0 - 10.5										
11.0 - 11.5										
12.5 - 13.0										
14.0 - 14.5										
15.0 - 15.5										
16.5 - 17.0										
17.5 - 18.0										
18.5 - 19.0										
19.5 - 20.0										

REMARKS: _____



Moccasin Bend Waste Water Treatment Plant
New Warehouse / Pole Barn
 Chattanooga, Tennessee
 GEOServices Project No.: 41-19534

LOG OF BORING **B-4**
 SHEET 1 OF 2

DRILLER: Al Bisching
 ON-SITE REP.: Madeline Phillips

BORING NO. / LOCATION: B-4 DRY ON COMPLETION? No

DATE: August 15, 2019 SURFACE ELEV. _____ FT.

REFUSAL: No DEPTH _____ FT. ELEV. _____ FT.

SAMPLED: 30.0 FT. 9.1 M

TOP OF ROCK DEPTH _____ FT. ELEV. _____ FT.

BEGAN CORING DEPTH _____ FT. ELEV. _____ FT.

FOOTAGE CORED (LF) _____ FT.

BOTTOM OF HOLE DEPTH: 30.0 FT. ELEV. -30.00 FT.

WATER LEVEL DATA (IF APPLICABLE)

COMPLETION: DEPTH 28.0 FT.
 ELEV. -28.0 FT.

AFTER 24 HRS. DEPTH TNP FT.
 ELEV. _____ FT.

BORING ADVANCED BY: _____ POWER AUGERING X WASHBORING _____

STRATUM DEPTH	SAMPLE DEPTH		SAMPLE OR RUN NO.	SAMPLE TYPE	FIELD RESULTS		LABORATORY RESULTS			STRATUM DESCRIPTION
	FT.	ELEV.			FROM FT.	TO FT.	N-Value	Qp	LL	
0.0 - 0.0										Gravel / Clay Mix
2.5 - -2.5			1	SS	16				19.7	Lean CLAY (CL) with sand - brown; very stiff; moist (ALLUVIUM)
5.0 - -5.0			2	SS	20				18.7	
7.5 - -7.5			3	SS	16				17.7	
10.0 - -10.0			4	SS	11				17.0	Sandy CLAY (CL) - brown; stiff; moist (ALLUVIUM)
12.5 - -12.5										
15.0 - -15.0			5	SS	10				19.1	
17.5 - -17.5										
20.0 - -20.0			6	SS	9				16.1	

REMARKS: _____



**Moccasin Bend Waste Water Treatment Plant
New Warehouse / Pole Barn
Chattanooga, Tennessee
GEOServices Project No.: 41-19534**

LOG OF BORING B-4
SHEET 2 OF 2

DRILLER: Al Bisching
ON-SITE REP.: Madeline Phillips

BORING NO. / LOCATION: B-4 DRY ON COMPLETION? No

DATE: August 15, 2019 SURFACE ELEV.: _____ FT.
REFUSAL: No DEPTH _____ FT. ELEV. _____ FT.
SAMPLED: 30.0 FT. 9.1 M
TOP OF ROCK DEPTH _____ FT. ELEV. _____ FT.
BEGAN CORING DEPTH _____ FT. ELEV. _____ FT.
FOOTAGE CORED (LF) _____ FT.
BOTTOM OF HOLE DEPTH: 30.0 FT. ELEV. -30.00 FT.

WATER LEVEL DATA (IF APPLICABLE)
COMPLETION: DEPTH 28.0 FT.
ELEV. -28.0 FT.
AFTER 24 HRS. DEPTH TNP FT.
ELEV. _____ FT.

BORING ADVANCED BY: _____ POWER AUGERING X WASHBORING _____

STRATUM DEPTH FT. ELEV.	SAMPLE DEPTH		SAMPLE OR RUN NO.	SAMPLE TYPE	FIELD RESULTS		LABORATORY RESULTS			STRATUM DESCRIPTION
	FROM FT.	TO FT.			N-Value	Qp	LL	PI	%M	
22.5 -22.5										(continued)
25.0 -25.0	23.5	25.0	7	SS	5				22.9	
30.0 -30.0	28.5	30.0	8	SS	8				25.7	Boring Terminated at 30 feet
32.5 -32.5										
35.0 -35.0										
37.5 -37.5										
40.0 -40.0										

REMARKS: _____

APPENDIX B

Soil Laboratory Data

SOIL DATA SUMMARY
Moccasin Bend WWTP - Warehouse / Pole Barn - Chattanooga, Tennessee
GEOservices Project No. 41-19534
September 4, 2019

Boring Number	Sample Number	Depth (feet)	Natural Moisture Content	Atterberg Limits			Soil Type
				LL	PL	PI	
B-1	1	1.0-2.5	17.9%				
	2	3.5-5.0	18.9%				
	3	6.0-7.5	19.0%				
	4	8.5-10.0	19.7%				
	5	13.5-15.0	16.6%				
	6	18.5-20.0	16.9%				
	7	23.5-25.0	24.1%				
	8	28.5-30.0	27.6%				
B-2	1	1.0-2.5	17.1%				
	2	3.5-5.0	17.0%				
	3	6.0-7.5	17.3%				
	4	8.5-10.0	14.9%				
	5	13.5-15.0	20.8%				
	6	18.5-20.0	21.9%				
	7	23.5-25.0	21.9%				
	8	28.5-30.0	27.8%				
B-3	1	1.0-2.5	19.4%				
	2	3.5-5.0	18.9%	36	17	19	CL
	3	6.0-7.5	19.4%				
	4	8.5-10.0	19.2%				
	5	13.5-15.0	16.6%				
	6	18.5-20.0	21.8%				
	7	23.5-25.0	23.0%				
	8	28.5-30.0	26.9%				
B-4	1	1.0-2.5	19.7%				
	2	3.5-5.0	18.7%				
	3	6.0-7.5	17.7%				
	4	8.5-10.0	17.0%				
	5	13.5-15.0	19.1%				
	6	18.5-20.0	16.1%				
	7	23.5-25.0	22.9%				
	8	28.5-30.0	25.7%				

RESULTS OF ANALYTICAL TESTING
MOCCASIN BEND WWTP - NEW WAREHOUSE/POLE BARN
CHATTANOOGA, TENNESSEE
GEOS PROJECT NO. 41-19534

Account: GEOSERCTN SDG: L1129886 Matrices: SS										
Lab Sample ID		L1129886-01		L1129886-02		L1129886-03		L1129886-04		
Client Sample ID		SB-1		SB-2A		SB-3A		SB-3B		
Date Collected		8/15/2019		8/15/2019		8/15/2019		8/15/2019		
Method	Analyte	Units	TN USEPA RSL Residential Soil 4/2009	TN ESEPA RSL Industrial Soil 4/2009	Result	Qualifier	Result	Qualifier	Result	Qualifier
6010B	ARSENIC	mg/kg	0.39*	1.6*	3.83		<2.00		2.61	
6010B	BARIUM	mg/kg	15000	190000	70.8		65.8		40.8	
6010B	CADMIUM	mg/kg	70	800	<0.500		<0.500		<0.500	
6010B	CHROMIUM	mg/kg	280	1400	20.3		18.1		13.9	
6010B	LEAD	mg/kg	400	800	11.2		10.8		15.9	
6010B	SELENIUM	mg/kg	390	5100	<2.00		<2.00		<2.00	
6010B	SILVER	mg/kg	390	5100	<1.00		<1.00		<1.00	
7471A	MERCURY	mg/kg	4.3	24	<0.0300		0.0397		<0.0300	
8082	PCB 1016	mg/kg	3.9	21					<0.0170	
8082	PCB 1221	mg/kg	0.17	0.62					<0.0170	
8082	PCB 1232	mg/kg	0.17	0.62					<0.0170	
8082	PCB 1242	mg/kg	0.22	0.74					<0.0170	
8082	PCB 1248	mg/kg	0.22	0.74					<0.0170	
8082	PCB 1254	mg/kg	0.22	0.74					<0.0170	
8082	PCB 1260	mg/kg	0.22	0.74					<0.0170	
8082	DECACHLOROBIPHENYL	% Rec							73.2	
8082	TETRACHLORO-M-XYLENE	% Rec							72.9	

* Naturally occurring levels of arsenic in Tennessee soils. However, background arsenic levels add 10mg/kg to regulatory criteria for the state of Tennessee.



October 10, 2019

City of Chattanooga
Department of Public Works
1250 Market Street, Suite 2100
Chattanooga, TN 37402

ATTENTION: Mr. Andrew W. Hutsell, P.E.
ahutsell@chattanooga.gov

Subject: **ADDENDUM TO REPORT OF GEOTECHNICAL
EXPLORATION – SUBSURFACE PARAMETERS**
New Warehouse / Pole Barn
Moccasin Bend Waste Water Treatment Plant
Chattanooga, Tennessee
GEOS Project Number 41-19534

Dear Mr. Hutsell:

GEOServices, LLC (GEOS) previously performed a geotechnical exploration for the project site, and prepared a *Report of Geotechnical Exploration*, dated September 17, 2019. The site for the proposed storage development is located at the existing Moccasin Bend Waste Water Treatment Plant at 455 Moccasin Bend Road in Chattanooga, Tennessee. The proposed site is located in the “bone yard” portion of the facility which is located along the northern edge of the property. The site currently exists as a gravel lay down area that is currently fenced and used for equipment storage. Based on the information provided, we understand that the project will consist of the construction of either a metal-framed warehouse building or a wood framed pole barn. Additionally, the structure will have a footprint of approximately 40 feet by 100 foot and will have a concrete slab-on-grade.

In the report, recommendations were provided for conventional shallow foundations for the proposed structure. We were asked to provide additional recommendations and subsurface parameters that can be used in design if a pole barn is to be constructed. Therefore, if a drilled

pier foundation system is to be utilized, parameters recommended for the design analysis are as follows:

Depth Range (ft)	Wet Unit Weight (pcf)	Allowable End Bearing (psf) ⁽¹⁾	Cohesion (psf) ^(2,3)	Total Angle of Internal Friction Φ (°) ⁽²⁾	Effective Angle of Internal Friction Φ (°) ⁽²⁾	Passive Pressure Coefficient Kp
0 – 2	115	NA	Neglect	Neglect	Neglect	Neglect
2 – 10	120	2,500	750	0	26	2.56
10 – 25	120	3,000	500	0	28	2.77
25 – 30	120*	3,000	500	20	28	2.77

(1) Factor of safety of 3.

(2) Based on N values and are conservative estimates based upon prudent engineering judgment. If the structure is considered a “critical structure” or if actual values are needed, laboratory testing should be performed to determine the soil’s strength parameters.

(3) Resistance of concrete against undisturbed natural soil can be taken as 55% of the Undrained Shear Strength (Cohesion) for short term loading conditions.

*The wet unit weights listed in the table are based on prudent engineering judgment and do not reflect the buoyant unit weight of the soils below the groundwater table. The buoyant unit weight is the unit weight of soil minus the unit weight of water.

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. This report is for our geotechnical work only, and no environmental assessment efforts have been performed. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, express or implied, is made.

We appreciate the opportunity to have been of service to you on this project. Please contact us with any questions you may have regarding this letter.

Sincerely,
GEOServices, LLC



Derek K. Kilday, P.E.
V.P. – Chattanooga Area Manager



Jeremy T. Haley, P.E.
Geotechnical Engineer
TN 117,997

**Affirmative Action Plan
For
City of Chattanooga W-19-004**

(Name of Contractor)

The above named Contractor is an equal opportunity employer and during the performance of this contract, the Contractor agrees to abide by the Affirmative Action Plan of the City of Chattanooga as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or handicap. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or handicap. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay, or other forms of compensation, and selection of training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin, or handicap.
3. The Contractor will send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or works' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The DBE goal for this project has been set at 0%.
5. This Plan or any attachments thereto shall further provide a list of all employees annotated by job function, race, and sex who are expected to be utilized on this project.
6. During the term of this contract the following non-discriminatory hiring practices shall be employed to provide employment opportunities for minorities and women:

- a. All help wanted ads placed in newspapers or other publications shall contain the phrase "Equal Employment Opportunity Employer".
 - b. Maintain systematic contracts with minority groups and human relations organizations.
 - c. Encourage present employees to refer qualified minority group and female applicants for employment opportunities.
 - d. Use only recruitment sources which state in writing that they practice equal opportunity. Advise all recruitment sources that qualified minority group members and women will be sought for consideration for all positions when vacancies occur.
7. During the term of this contract, the Contractor, upon request of the City of Chattanooga Office of Economic and Community Development, will make available for inspection by the City of Chattanooga Office of Economic and Community Development, copies of payroll records, personnel records, documents and other records that may be used to verify Contractor compliance with these equal opportunity provisions.
8. The Contractor agrees to notify the City of Chattanooga Office of Economic and Community Development of any failure or refusal on the part of the contractor or any subcontractors to comply with the equal opportunity provisions set forth. Any failure or refusal to comply with the aforementioned provisions by the Contractor and/or Subcontractors shall be a breach of this contract.

(Signature of Contractor)

(Title and Name of Construction Company)

(Date)

No Contact/No Advocacy

Notice Receipt

City of Chattanooga

Purchasing Division

For Submission with Quote Responses:

_____ (Vendor Agent name), states that:

(1) He/She is the owner, partner, officer, representative, or agent of _____
_____ (Business name), the Submitter of the
attached sealed solicitation response to Solicitation # _____, and said

Business has taken notice, and will abide by the following No Contact and No Advocacy clauses:

NO CONTACT POLICY: After the posting of this solicitation, a potential submitter is prohibited from directly or indirectly contacting any City of Chattanooga representative concerning the subject matter of this solicitation, unless such contact is made with the Purchasing Division.

NO ADVOCATING POLICY: To ensure the integrity of the review and evaluation process, companies and/or individuals submitting sealed solicitation responses, as well as those persons and/or companies formally/informally representing such submitters, may not directly or indirectly lobby or advocate to any City of Chattanooga representative.

Any business entity and/or individual that does not comply with the No Contact and No Advocating policies may be subject to the rejection or disqualification of its solicitation response from consideration.

Submitter Signature:

Printed Name:

Title: _____

Date: _____

Chapter No. 817 (HB0261/SB0377). "Iran Divestment Act" enacted.
Vendor Disclosure and Acknowledgement

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 § 12-12-106.

(SIGNED) _____

(PRINTED NAME) _____

(BUSINESS NAME) _____

(DATE) _____

For more information, please contact the State of Tennessee, Central Procurement Office
<https://www.tn.gov/generalservices/procurement/central-procurement-office--cpo-/library-/public-information-library.html>

SECTION 00486

DRUG-FREE WORKPLACE AFFIDAVIT OF PRIME BIDDER

STATE OF _____

COUNTY OF _____

Comes the affiant after having first been duly sworn and testifies as follows:

1. My name is _____ I hold the principal office of _____ for _____
(Name of Principal Office) (Name of Bidding Entity)

2. _____ has submitted a bid to the
(Name of Bidding Entity)
City of Chattanooga for the construction of Contract W-19-004.

3. _____ employs more than five (5) employees.
(Name of Bidding Entity)

4. In accordance with Tenn. Code Ann. §50-9-113, this is to certify that
_____ has in effect at the time of its submission of
(Name of Bidding Entity)
a bid to perform the construction of the City of Chattanooga project identified above,
a drug-free workplace program that complies with Title 50, Chapter 9 of the Tennessee Code.

5. This affidavit is made on personal knowledge.

Further the affiant saith not this _____ day of _____, 20__.

Signature

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

Notary Public

My Commission Expires:

(Date)

(SEAL)

END OF DOCUMENT