

**ACCELERATE**   
**MEMPHIS**



**CITY OF MEMPHIS**

**REQUEST FOR PROPOSAL**

**#52470**

**CONSTRUCTION MANAGER AT RISK FOR**

**THE NEW WHITEHAVEN BANQUET FACILITY**

**Date Issued: November 2<sup>nd</sup>, 2021**

**Proposal Submission Deadline: December 1<sup>st</sup>, 2021**

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## 1. OVERVIEW

### 1.1 GENERAL CONDITIONS

The following data is intended to form the basis for submission of proposals to provide Construction Manager-at-Risk (“CMAR”) services in connection with the design and construction of the New Whitehaven Banquet Facility (the “WBF”). This material contains general conditions for the procurement process, the scope of service requested, contract requirements, instructions for submissions of proposals, and submission forms that must be included in the proposal. The RFP should be read in its entirety before preparing the proposal. All materials submitted pursuant to this RFP shall become the property of the City of Memphis.

To the extent permitted by law, all documents pertaining to this Request for Proposals shall be kept confidential, to the extent necessary for review, until the proposal evaluation is complete. No information about any submission of proposals shall be released until the process is complete, except to the members of the Evaluation Committee established by the City and other appropriate designated 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.

Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the RFP shall be made in accordance with the requirements listed in Section 4.5 Initial Questions Submission, Final Questions Submission. The City of Memphis 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. Any questions or concerns not submitted by the stated time and date will be deemed waived.

If any addenda are issued to this Request for Proposals, the Purchasing Division will post them to the City's website at <https://www.memphistn.gov/business/rfps-rfqs/>. Submitting organizations are strongly encouraged to view this website often to see if addenda are posted. Failure of any proposer to receive such addendum or interpretation shall not relieve such proposer from any obligation under his proposal as submitted. All addenda so issued shall become part of the Contract Documents.

The City of Memphis reserves the right to (a) accept or reject any and/or all submissions of proposals; (b) to waive irregularities, informalities, and technicalities; and (c) to accept any alternative submission of proposals presented which, in its opinion, would best serve the interests of the City. The City shall be the sole judge of the proposals, 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.

## 1.2 OBJECTIVE

The City of Memphis (COM) is soliciting proposals for qualified firms to provide Construction Manager-at-Risk (CMAR) services as it relates to the design and renovation of the WBF. MFA, a joint venture, is serving as the owner's representative for the WBF. The successful firm will be asked to assist the COM with routine and customary CMAR services described below. Procurement of the CMAR will be based on the firm's qualifications and experience on similar projects, qualifications of personnel to be assigned to the project, fees and costs, and the additional criteria set forth in this RFP. The COM will award the CMAR contract to the proposer with the best proposal, as determined by the City.

The COM, has issued this Request for Proposals (RFP) to define the minimum service requirements; solicit qualifications and proposals; detail response requirements; and outline the COM's process for evaluating submissions and selecting the CMAR which shall assist in the final design process and construction of:

WBF

Total Estimated cost for this project: \$2,616,944.

The COM, through the Accelerate Memphis Initiative has contracted Daily Design Group to serve as the architect of record for this project. The CMAR shall provide consulting, pre-evaluation, scheduling, and estimating/cost control services (one pre-construction phase estimate at 100% Design Development) during the production of final construction document phase of the Project, and, as the CMAR during construction, shall hold the trade contracts and provide the management, administration, and construction services during the construction phase. The CMAR shall competitively procure and contract with the trade contractors and assume the responsibility and the risk of construction delivery within the specified cost and schedule terms, after providing a Guaranteed Maximum Price (GMP) for the scope of work for Infrastructure and Construction of the WBF. The COM owns the Whitehaven Banquet Facility campus and shall own all completed structures and improvements.

## 1.3 DESIGN DOCUMENTS

Current 50% Schematic Design Documents and Narrative for the New Banquet Facility are attached hereto as Exhibit 1.

## 2. SCOPE OF SERVICES

### 2.1 PHASE OVERVIEWS

The successful firm will work with the COM to help ensure reasonable and practical design, and quality construction management to include pre-construction cost estimating services, trade contractor bidding and negotiation, and management of construction.

**The primary activities to be performed include but are not limited to the following:**

#### **PRE-CONSTRUCTION PHASE:**

1. Consultation During Project Development: The CMAR will attend regular meetings with the Program manager and Architect during the development of design to advise on site use and improvements, selection of materials, building systems and equipment. The CMAR will be responsible for providing recommendations on construction feasibility, availability of materials and labor, time requirements for installation and construction, and factors related to cost including costs of alternative designs or materials, preliminary budgets, and other cost alternatives. Any material or system proposed by the CMAR shall, upon acceptance by the COM and the Program Manager and Architect, become a part of the Contract Documents.
2. Establishment of the GMP: The CMAR will finalize the GMP within the agreed to project budget and the timeframes established in the COM/CMAR agreement.
3. Review of Contract Documents: Without assuming any of the design responsibility, the CMAR will review the Drawings and Specifications as they are prepared, recommending alternative solutions whenever design details affect construction feasibility or schedules. The CMAR shall concentrate on ways to reduce both the construction costs and schedule without impacting project scope.
4. Construction Planning: The CMAR will recommend for purchase and expedite, with the COM's approval, the procurement of long-lead items to ensure their delivery within the approved construction schedule. The CMAR's scope of work in the construction planning will include: making recommendations regarding the division of work in the drawings and specifications to facilitate bidding and awarding of trade contracts; and allowing for phased construction, taking into consideration such factors as time of performance, availability of labor, overlapping trade jurisdictions, and provisions for temporary facilities. The CMAR will review the drawings and specifications with the Consultant to eliminate areas of conflict and overlapping in the work to be performed by various trade contractors and prepare prequalification criteria for bidders for the COM's approval.
5. Bidding: The CMAR will develop trade contractor or subcontractor interest in the Project and, as working drawings and specifications are completed, take competitive bids on the work from the various Trade Contractors. The COM has established the EBO participation goals for the project (43% MBE and 7% WBE), and the CMAR will be responsible for presenting an EBO Participation plan to the

COM for approval prior to the award of the first Trade Contract bid package. After analyzing the bids, the CMAR will award trade contracts with the COM's approval of such contracts being awarded. The CMAR will prepare and distribute all bidding documents or bid packages and will conduct pre-award and post-award conferences with successful bidders as necessary to protect the interests of the COM.

## CONSTRUCTION PHASE

1. Project Control and Supervision of the Work: The CMAR will monitor and coordinate the work of the trade contractors so as to complete the project for the GMP in full accordance with the plans and specifications and no later than the substantial completion date as established in the terms of the COM/CMAR agreement. The CMAR will use a project management system such as PROCORE, or approved equal.
2. Project and Site Management. The CMAR will maintain a competent full-time staff at the Project site including a full time Project Manager-at-Risk to supervise and ensure that the work and progress of the trade contractors is in full compliance with the Plans and Specifications and Substantial Completion Date. All changes in key staff must be approved by the COM.
3. Permits, Licenses, Laws & Regulations: The CMAR or Trade Contractor shall secure and pay for all fees, licenses, and permits required to lawfully perform the work. The CMAR or Trade Contractor shall comply with all laws, ordinances, rules, regulations, and orders of any public authority having jurisdiction over the work.
4. Physical Construction: The CMAR will ensure all supervision, labor, materials, construction equipment, tools and supplies which are necessary to complete the work in accordance with the Contract Documents are in place.
5. Cost Control & Change Orders: The CMAR will develop and monitor an effective system of Project cost control. The CMAR will develop cash flow reports and forecasts as needed by the COM. If the COM has a change in scope resulting in a Change Order, as applicable, a change Order will be issued to increase or decrease the GMP. The CMAR will develop and implement a system for the preparation, review and processing of Change Orders and/or Construction Changes and recommend necessary or desirable changes to the COM.
6. Trade Contractors: The CMAR shall enter into direct contracts with subcontractors ("Trade Contracts" and "Trade Contractors" respectively) and shall be fully responsible for their work, including the timeliness, quality and price of the work. The CMAR will review and process all applications for payment by Trade Contractors for monthly progress and final payments. The CMAR shall pay all Trade Contractors directly. The CMAR shall require that the Trade Contractors furnish an acknowledgment of payment/waiver of lien with each application for payment certifying that money has been received for performance of their Trade Contract during the previous payment period and waiving any right to file or assert a mechanic's and materialmen's lien. All CMAR responsibilities related to the contracting with and oversight of Trade Contractors will be conducted as specified in the CMAR/COM Agreement.

7. Start-up: CMAR shall be responsible for obtaining all occupancy permits. CMAR will direct the checking of utilities, operations systems, and equipment for readiness and will assist in their initial start-up and testing by the Trade Contractors.
8. Order and Safety: The CMAR shall be responsible at all times for enforcing strict discipline and good order among its employees and/or the Trade Contractors. The CMAR shall provide and oversee all safety orders, precautions and programs necessary for the safety of the work. The CMAR will develop a safety program, which will be implemented throughout the duration of the project, and a copy shall be furnished to the COM.
9. Project Closeout: The CMAR shall coordinate post-construction activities including systems training and the assembly of guarantees, manuals, and other close-out documents; the resolution of all “punch-list” items to the COM’s satisfaction; systems commissioning activities; supervise furniture and equipment deliveries and installation; and submit record drawings for review and approval by the Design Team and the COM.

## 2.2 INSURANCE REQUIREMENTS

Insurance requirements for this project are included in Article 17 of the sample contract, attached as Exhibit 8.

## 2.3 DURATION

### Anticipated WBF Project Schedule

50% Schematic Design	November 1, 2021
100% Schematic Design	November 22, 2021
DD Complete	February 7, 2022
CD Complete	May 17, 2022
CMAR Trade Contractor Bidding and Negotiation	May 17, 2022 – July 19, 2022
WBF Construction	July 19, 2022 – September 19, 2023

*\*\*Schedule is subject to change by COM.*



### 3. PROPOSAL RESPONSE

This Section describes the contents of Proposer’s Proposal and provides an outline of how the Proposer should organize it. Proposer’s Proposal will not be considered responsive unless it fully complies with the requirements in this Section, as well as the additional instructions provided in Section 4.6 regarding the required Proposal formats and submission process.

Specifically, Proposer’s Proposal shall include each of the sections referenced in the table below. The preferred method of submittal is in a three-ring binder with tabbed sections. The requirements for each of these Proposal sections are described in more detail in this Section.

**PROPOSER'S PROPOSAL WILL BE DISQUALIFIED FROM THIS RFP PROCESS IF THE PROPOSER FAILS TO CONFORM TO THE PROPOSAL INSTRUCTIONS IN THIS SECTION.**

Sections and Topics
Section 1 – Cover Letter
Section 2 – Non-Collusion Affidavit
Section 3 – Criminal and Civil Proceedings Disclosure
Section 4 – Executive Summary
Section 5 – Qualifications
Section 6 – Relevant Experience and Track Record of Delivering Projects On Time and On Budget
Section 7 –Proposed Project Approach
Section 8 - Pricing
Section 9 – Equal Business Opportunity (EBO) Program

#### 3.1 COVER LETTER

Proposer’s Proposal shall contain a cover letter acknowledging Proposer's understanding of the RFP process and requirements set forth in this RFP, including its commitment to its Proposal. The cover letter shall be signed by an authorized representative of Proposer's company.

Provide agency’s name, address, web address, telephone and fax numbers. Please include name, title and e-mail address of the individual who will serve as agency’s primary contact. Describe your agency’s ownership.

### 3.2 NON-COLLUSION AFFIDAVIT

Please use the form provided in Exhibit 3.

### 3.3 CRIMINAL AND CIVIL PROCEEDINGS DISCLOSURE

Please use the form provided in Exhibit 4.

### 3.4 EXECUTIVE SUMMARY

Identify the name of the firm, location of the main office, how many years the firm has been in business under the present name and current ownership, total staff, project volume in 2021 and anticipated project volume in 2022 and 2023. Indicate the firm's single project and aggregate project bonding capacities. Confirm the firm's ability to provide a performance and payment bond in the amount of 100% of the contract form if the team is selected for the project.

### 3.5 QUALIFICATIONS

An organizational chart identifying the lead firm and other members of the project team, including sub-consultants, if any, who would be assigned to the project. This chart should clearly delineate the roles and responsibilities of the various team members.

Background information about the team members, including: professional registrations and certifications, listing applicable state(s); office location; position title; length of service in current position; and role in past projects of a similar nature. Resumes or bios of team members may be included.

### 3.6 RELEVANT EXPERIENCE AND TRACK RECORD OF DELIVERING PROJECTS ON TIME AND WITHIN BUDGET

Written references from **three** recent, similar projects. The references provided should be on the customer's company letterhead and should include a description of the work, the date and cost of services performed, and a description of the customer's experience with the Proposer throughout the construction process.

A description of **five** (5) of Proposer's projects from the past **five** (5) years with information about project scope, project budget, and whether the project was delivered on time and within budget. If the example projects are currently under construction, please indicate the percentage of completion and describe any deviation from the GMP.

### 3.7 PROPOSED PROJECT APPROACH

Description of the Proposer's capability and approach to deliver the CMAR services including:

- Description of the project team's capability to provide CMAR services with a GMP, particularly for public organizations or governments. Describe CMAR's capability to perform necessary construction management services for similar type projects.
- Description of the project team's ability, capacity and methodology to staff and manage this project properly to meet COM's schedule.
- A narrative project approach description of the processes to be utilized during the pre-construction phase, including: (a) Providing design coordination and review with the Consultant; (b) Addressing and incorporating constructability issues into the design; (c) Providing cost estimating and value engineering including GMP; and (d) Explaining how issues will be addressed to revise or develop the Consultant's design to meet the project construction budget.
- A narrative for the delivery method that includes information that details: (a) The types and qualifications of the trade work for the project type; and (b) The manner that trade contractor bids will be solicited and awarded.

### 3.8 PRICING

Proposer shall use the form included in Exhibit 5 for this section.

### 3.9 EQUAL BUSINESS OPPORTUNITY (EBO) PROGRAM

At the time of response, the CMAR shall submit a letter of intent describing its plans to achieve the minority and women owned business participation goal set forth below.

During the sub-contractors bidding phase of the project, the CMAR will be required to complete a participation plan for approval by the COM. See the following pages for descriptions and forms.

#### **Equal Business Opportunity Program**

This contract will be subject to the requirements of the City of Memphis Ordinance #5622 which establishes the Equal Business Opportunity ("EBO") Program. It is up to the Proposer to ensure that all requirements of this ordinance are met. The Ordinance may be accessed on the City's website at [www.memphistn.gov](http://www.memphistn.gov) under "Doing Business". The intent of the EBO Program is to increase the participation of locally owned minority and women owned business enterprises ("M/WBE") in the City's purchasing activities. Toward achieving this objective, the M/WBE participation goal for this solicitation is 43 MBE% and 7% WBE. The percentage of M/WBE participation is defined as the dollar value of subcontracts awarded to certified minority and/or women business enterprises divided by the total proposed base bid amount.

**Participation Plan**

The Participation Plan must include: (1) level and dollar amount of participation your firm anticipates to achieve in the performance of contract resulting from this RFP; (2) the type of work to be performed by the M/WBE participation; and (3) the names of the M/WBEs the Proposer plans to utilize in the performance of the contract resulting from this RFP.

**Good Faith Efforts Documentation**

If a Proposer proposes an M/WBE percentage less than the established goal, the Proposer must, at the time of the response, submit a Good Faith Efforts statement accompanied by the appropriate documentation justifying its submitted M/WBE percentage. The ability of the Proposer to perform the work with its own work force will not in itself excuse the Proposer from making good faith efforts to meet participation goals. The determination of whether a Proposer has made a good faith effort will be made by the City's Contract Compliance Officer, Director of Finance and the Purchasing Agent, prior to the award of the project.

**Eligible M/WBE Firms**

To qualify as an M/WBE firm, per the requirements of City of Memphis Ordinance #5384, a firm must be included on the City's list of certified M/WBE firms. One or a combination of several M/WBEs may be utilized to meet the established goal.

Requests for verification must be submitted to the City's Contract Compliance Office listed below:

City of Memphis; Phone 901-636-6210; Fax 901-636-6560  
Business Diversity & Compliance  
125 North Main Street, Suite 546  
Memphis, TN 38103

The form below shall be completed when the selected CMAR submits the GMP:

**CITY OF MEMPHIS**

**EQUAL BUSINESS OPPORTUNITY PROGRAM COMPLIANCE FORM**

**PROJECT TITLE:** CMAR FOR THE NEW WHITEHAVEN BANQUET FACILITY

**Project M/WBE GOAL:** 43%/7%

The following sections must be completed by bidder. A certified subcontractor or supplier is defined as a firm from the list of certified firms provided with this specification.

\_\_\_\_\_  
Bidder's Name

Section A - If the bidder is a certified firm, so indicate here with a check mark.

\_\_\_\_\_ MBE \_\_\_\_\_ WBE

Section B - Identify below those certified firms that will be employed as subcontractors or suppliers on this project. By submitting this bid, the bidder commits to the use of the firms listed below.

\$ = Show the dollar value of the subcontract to be awarded to this firm

% = Show the percentage this subcontract is of your base bid

M/WBE = Show by inserting an M or W whether the subcontractor is an MBE or WBE

\$ / %	M/WBE	SERVICE	CERTIFIED SUBCONTR. NAME, ADDRESS, TEL. #

Total	\$	%
MBE		
WBE		

**THIS FORM and SUPPORTING DOCUMENTATION MUST BE SUBMITTED WITH THE BID OR THE BID WILL BE CONSIDERED NON-CONFORMING.**

**CITY OF MEMPHIS  
GOOD FAITH EFFORT DOCUMENTATION FORM**

To The Honorable Mayor City of Memphis, Tennessee  
From:

PROPOSER NAME \_\_\_\_\_

PROJECT TITLE:

Enclosed please find the required documents:

Said Bidder \_\_\_\_ did / or \_\_\_\_ did not attend the project pre-bid meeting.

**\*Copies of all written notification to City of Memphis M/WBE listed firms. (Please attach list of all firms notified, detail how they were notified and when).**

Said Bidder \_\_\_\_\_ did / or \_\_\_\_ did not select economically feasible portions of the work to be performed by M/WBE firms.

**\*List all M/WBE firms with which negotiations took place. (Attach list. If no negotiations were held, please state so.) Provide names, addresses, and dates of negotiations.**

**\*Statement of efforts to assist M/WBE firms, with bonding, insurance, financing, or with document review. (Attach list. If no assistance was provided, please state so.)**

The Bidder \_\_\_\_ did / or \_\_\_\_ did not use all M/WBE quotations received. If the Bidder did not use all M/WBE quotations received, list on attached sheets, as required as to the reasons those quotes were not used.

**\*List (on attached sheets as required) all M/WBE firms contacted that the bidder considered not to be qualified, and a statement of the reasons for the bidder's conclusions. If no firms were found to be non-qualified, please state so.**

THIS SIGNED FORM AND REQUESTED DOCUMENTATION (noted by an asterisk ‘\*’) MUST BE SUBMITTED WITH THE BID IF THE BIDDER DOES NOT MEET THE REQUIRED M/WBE PROJECT GOAL. IF REQUESTED DOCUMENTATION IS NOT SUBMITTED THE BID WILL BE CONSIDERED NON-CONFORMING.

\_\_\_\_\_  
Contractor's Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed or Typed Name and Title

## 4. INSTRUCTIONS ON RFP PROCESS

### 4.1 USE OF INFORMATION

**All correspondence about this RFP and the Initiative should be limited to the Principal Contact listed in Section 4.2 or other designated City personnel or agents.**

### 4.2 PRINCIPAL CONTACT AND INFORMATION REQUESTS

**Tim Boyles** is the single point of contact (the “Principal Contact”) for all matters relating to this RFP. Proposer should direct all inquiries to the Principal Contact at:

**tim.boyles@memphistn.gov**

Proposer should not, under any circumstances, contact any City personnel (including senior City management or City employees with whom Proposer has an existing business or personal relationship) to discuss this RFP without the Principal Contact’s prior written consent. Utmost discretion is expected of Proposer and all other RFP recipients. Any recipient attempting to circumvent this process will risk elimination from further participation in the bidding process.

### 4.3 SCHEDULE OF ACTIVITIES

- To accelerate the business transformation, service improvements and cost savings the City anticipates, the City has developed an estimated timeline for this Initiative. The City will move as quickly and efficiently as possible to determine the feasibility of each Proposer’s Proposal and to move forward with term sheet discussions and ultimately conclude an agreement accordingly.
- As a result, the City requests that the Proposer make a dedicated team available to participate in the proposal development and evaluation processes as necessary to participate in the activities and meet the deadlines provided in the table below.
- It is the City’s option to conduct interviews with selected Proposers. However, in no way is the City obligated to interview any/all Proposers.
- The City reserves the right to modify or update this schedule at any point in time.

**In no event shall the deadline for submission of the proposal be changed except by written modification by the City of Memphis Purchasing Department.**

<b>Activity</b>	<b>Date</b>
Publish RFP	November 2, 2021
Pre-Submission Meeting	November 9, 2021
Proposer Questions Deadline	November 18, 2021
City Response to Questions	November 22, 2021
Proposal Submission Deadline	December 1, 2021
Finalist Selections – Optional	December (Tentative)
Finalist Presentations – Optional (City’s Discretion)	December (Tentative)
Negotiations	December (Tentative)
Agreement Finalization	December (Tentative)

Several of the activities identified in the above table are described in more detail in the remainder of this Section 4.

#### 4.4 PRE-SUBMITTAL CONFERENCE

There will be a mandatory pre-submission meeting via Zoom on **November 9, 2021 at 10:00 AM**. The Zoom meeting can be accessed via the link below:

Join Zoom Meeting

<https://us06web.zoom.us/j/89711305884?pwd=ZUtKbnlYS3A1UTdRRVBYaTdrRzVhZz09>

Meeting ID: 897 1130 5884

Passcode: 071343

One tap mobile

+13017158592,,89711305884# US (Washington DC)

+13126266799,,89711305884# US (Chicago)

The purpose of this meeting is to answer questions regarding the project. The representative attending the meeting must be an employee of the company that it represents.



Please note that no site tours will be provided. Proposers are strongly encouraged to visit the project site prior to submitting a proposal to arrive at a clear understanding of the conditions under which the work is to be performed. Proposers may visit the project site at their convenience, as it is a public park easily accessible.

#### 4.5 INITIAL QUESTIONS SUBMISSION, FINAL QUESTIONS SUBMISSION

Proposer may submit an initial set of questions based on its review of this RFP, by adhering to the format template provided in Exhibit 6 and submitted as an attached WORD document or as part of the body of the email (no pdf documents), and sending it via email by 4:00 pm on the date listed in Section 4.3 Schedule of Activities. Questions received after this time and date will not be answered. This email should be sent to the individual(s) listed in Section 4.2 Principal Contacts and Information Requests, with the subject heading: "Your company's name – RFP #52470 –Construction Manager at Risk for the New Whitehaven Banquet Facility – Questions". The City will post the responses to the questions on the City's web site on or before the date listed in Section 4.3 Schedule of Activities. To ensure the fair and consistent distribution of information, no individual answers will be given. The only official answer or position of the City will be the one posted via the City's website. Any questions or concerns not submitted by the stated time and date will be deemed waived.

#### 4.6 PROPOSAL SUBMISSIONS

##### PROPOSAL SUBMISSION AND DUE DATE

Proposer shall submit, in a sealed packet, one (1) original (clearly marked on the outside of the binder as "ORIGINAL"), seven (7) complete printed copies, and two (2) CDs or thumb drives containing softcopies of its entire Proposal (including the signed Cover Letters) on or before the date specified in Section 4.3 Schedule of Activities **at 12:00 noon CT**, to the addressee provided below:

**USPS (or other common carrier)**  
**City of Memphis**  
**Purchasing Department, Room 354**  
**125 N. Main Street**  
**Memphis, TN 38103**

**Hand Delivery**  
**City of Memphis**  
**Main Lobby – Bid Drop Box**  
**125 N. Main Street**  
**Memphis, TN 38103**

The label should identify the contents as:

**Your company name & address.**  
**RFP Title, RFP #XXXXX.**

**PROPOSALS SUBMITTED AFTER THE DEADLINE OR WHICH STATE THAT INFORMATION WILL BE PROVIDED 'AT A LATER DATE', OR WHICH ARE OTHERWISE INCOMPLETE OR FAIL TO COMPLY WITH THE REQUIREMENTS SET FORTH IN THIS RFP WILL BE DISQUALIFIED FROM PARTICIPATION IN THIS RFP PROCESS.**

Proposals may not be amended after the submission deadline.

Notwithstanding any legends on the proposal or any other statements to the contrary, all materials submitted in connection with Proposer's response to this RFP will become the property of the City and may be returned only at the City's option.

### **PROPOSAL FORMAT**

The City expects the Proposal to be a compilation of various documents, in particular because Proposer's Proposal must utilize the RFP response templates, if provided, set forth in the Exhibits in this RFP.

Proposer shall use Microsoft Office file formats in preparing its Proposal to the maximum extent possible. All pages should be formatted to print on 8 ½" x 11" paper, unless another format is provided by the response template. Proposer responses should be specific, factual, brief and to the point.

### **PROPOSAL EXPIRATION DATE**

Proposals in response to this RFP shall remain valid for six (6) months from the Proposal due date. The City may request an extension of time if needed.

### **PROPOSER DATA**

The confidentiality of information and data contained in the firm of contractor's Proposal shall be subject to and governed by the Open Records Act and any other Public Records laws with which the City is legally obligated to comply (including a Freedom of Information Act Request under "FOIA").

### **Deadline Extension**

The City reserves the right to extend the submission deadline, if such action is considered necessary by the City.

### **Ambiguity, Conflict, or other Errors in the RFP**

If a Proposer discovers any ambiguity, conflict, discrepancy, omission or other error in the RFP, it shall immediately notify, in writing e-mail, the City of such error and request modification or clarification of the document. The Proposer shall include the RFP number, page number and the applicable paragraph title. The City will issue/post any revisions to the RFP on the City's website ([www.memphistn.gov](http://www.memphistn.gov)). The Proposer is responsible for clarifying any ambiguity, conflict, discrepancy, omission, or other error in the Request for Proposals prior to submitting the proposal or any ambiguity, conflict, discrepancy, etc. shall be waived.

### **Withdrawing or Amending a Proposal**

At any time prior to the scheduled deadline for receipt of proposals, the Proposer may withdraw or amend its proposal by submitting a written request from the authorized representative whose name and signature appears on the proposal. A written request to withdraw or amend the proposal must be

submitted to the individual and address to whom/which the proposal was submitted in accordance with the section above titled "PROPOSAL SUBMISSION AND DUE DATE."

#### **Acceptance/Rejection of Proposals**

The City reserves the right to accept or reject, in whole or in part, any or all proposals submitted. The City shall reject the proposal of any Proposer that is determined to be non-responsive.

#### **Informalities/Minor Irregularities**

The City reserves the right to waive minor irregularities or informalities in a Proposer's proposal when the City determines that it will be in City's best interest to do so. Any such waiver shall not modify any remaining RFP specifications or excuse the Proposer from full compliance with the RFP specifications and other contract requirements if the Proposer is awarded the contract.

#### **Proposer indebted to the City**

No contract will be knowingly awarded to any organization which, in the City's sole discretion, is in arrears to the City of Memphis upon any debt or contract, or which is a defaulter as surety or otherwise under any obligations to the City of Memphis, or which has failed to perform faithfully on any previous contract with the City of Memphis.

#### **Tax Payments**

The City of Memphis is exempt from federal excise, state and local taxes on all purchases and will issue tax exemption certificates, upon request.

### **4.7 FINALIST SELECTIONS (OPTIONAL)**

The City may select a number of the RFP Proposers who will be asked to give an oral presentation of its proposal to the City. However, the City is not obligated to interview any Proposer. If interviews are conducted, the Proposers will be selected based on an evaluation of their Proposals against the criteria described in Section 5 of this RFP.

### **4.8 PROPOSER PRESENTATIONS (OPTIONAL)**

Details pertaining to the oral presentation phase of the RFP process will be confirmed after Proposal submission, however the presentations are tentatively scheduled to begin on the date listed in Section 4.3 Schedule of Activities.

If Proposer is one of the RFP recipients asked to give an oral presentation, Proposer should prepare a comprehensive presentation that concentrates on the business and technical aspects of the Proposal. **PROPOSER'S PROPOSAL WILL NOT BE ALTERED OR ENHANCED DURING THE ORAL PRESENTATION.**

Appropriate visual and written materials are expected, but the format will be left to the discretion of the Proposer. A soft copy of all presentation materials must be delivered to the Principal Contact at least one business day before the beginning of the presentation. Proposer should also bring a sufficient number of printed copies of the materials for the City attendees at the presentation.

The City may provide an agenda or other direction for the Proposer's presentation based on the City's initial review of the Proposals.

#### 4.9 CONTRACT AWARD

The award of contract will be made on the basis of the best proposal, as solely determined by the City, which meets the requirements and criteria set forth in the solicitation. The City will only accept proposals for the services requested. The proposal submitted in response to this solicitation is not a legally binding document; however, the contract, which will be based on information provided in the proposal, becomes legally binding once all parties have signed it. Any contract resulting from this RFP shall be subject to the City of Memphis General Terms and Conditions set forth in this solicitation and any additional terms imposed by City. The successful Contractor shall be required to execute the contract originated by the City of Memphis and satisfy all contract requirements as specified by the City. Any contract awards and amounts are subject to the availability and appropriation of funds. A sample City of Memphis contract, subject to change, is attached as Exhibit 8.

#### 4.10 PROTESTS

Any protest of award must be filed in writing with the Purchasing Agent within five (5) calendar days of the award announcement at the following address, or via email (Tim Boyles – Tim.Boyles@memphistn.gov):

City of Memphis Purchasing Agent:  
125 North Main, Room 354, Memphis, Tennessee 38103.

#### 4.11 MODIFICATION OR TERMINATION OF RFP PROCESS

Subject to the rules and regulations of the City's Procurement Office, including with respect to providing notification and, where applicable, providing the opportunity to revise proposals, the City reserves the right to, in its sole discretion, discontinue, amend, supplement, or otherwise change this RFP, the initiative, the process used for evaluation, and the expected timeline at any time and for any reason, and makes no commitments, implied or otherwise, that this process will result in a business transaction with any provider.

#### 4.12 SUPPLEMENTAL INFORMATION

After issuance of this RFP if additional relevant material is produced by or becomes available to the City, such material will (where appropriate) be transmitted to all RFP participants for their consideration. The

City will make modifications by issuing a written addendum, which will be posted on the City's website. Any revisions to the solicitation will be made only by an addendum issued by the City. It is the responsibility of the Proposer to check the website for possible addenda and should consider such information in its Proposal. The City will assume that all changes or additional requirements transmitted have been taken into account in Proposer's Proposal (including with respect to pricing), unless otherwise specified.

#### 4.13 NO REPRESENTATIONS OR WARRANTIES

The City makes no representations or warranties regarding the accuracy or completeness of the information contained in this RFP or otherwise provided by the City through the RFP process. Proposer is responsible for making its own evaluation of information and data contained in this RFP or otherwise provided by the City, and for preparing and submitting responses to the RFP. The City has attempted to validate the information provided in this RFP, but it is possible that Proposer may detect inconsistencies or potential errors. While Proposer should identify these potential issues in its questions or in an appendix to its Proposal, Proposer should use the information provided on an "as-is" basis for its initial Proposal. Information regarding the City and the Initiative may be revised or updated, and republished for inclusion in a final response.

#### 4.14 PROPOSAL PREPARATION COSTS

Proposer will be responsible for all costs it incurs in connection with this RFP process (including but not limited to Proposal preparation, personnel time, travel-related costs, and other expenses) and any subsequent agreement negotiations.

## 5. EVALUATION MODEL

### 5.1 QUALIFYING PROPOSALS

The City will review each submitted Proposal to determine whether it is a Qualifying Proposal. A Qualifying Proposal is one that meets all the criteria set forth below. All Proposals that do not meet the requirements of the RFP will be disqualified from this RFP process. A Qualifying Proposal is a Proposal that:

- Was submitted (in the form and format required) by the due date as specified in Section 4.6.
- Conforms to the requirements of the RFP (as outlined in Section 3).

### 5.2 EVALUATION OF QUALIFYING PROPOSALS

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

The criteria, and their associated point values, by which the evaluation of the proposals will be based is included as Exhibit 7.

## 6. RFP TERMS AND CONDITIONS

The City of Memphis seeks proposals from firms who have the expertise to provide to provide the products and/or services as is in accordance with this RFP document. This is a Request for Proposal that may be modified by the City in the selection process.

THE CITY OF MEMPHIS ENCOURAGES THE PARTICIPATION OF SMALL, MINORITY AND WOMEN-OWNED BUSINESSES IN THE PURCHASING PROCESS.

The City of Memphis is an Equal Opportunity Employer and does not discriminate on the basis of race, color, national origin, sex, religion, age, or handicap status in employment or in the provision of services.

This procurement may be subject to the requirements of Ordinance No. 5114 which establishes a local preference for local businesses located within the City of Memphis. A copy of your current Memphis and Shelby County Tennessee Business Tax Receipt must accompany the proposal for consideration of this ordinance.

Any protest of award must be filed in with the Purchasing Agent pursuant to Section 4.10 Protests. Notice of Intent to Award will be emailed to all vendors that submit a valid proposal. The intent to award notification shall be deemed publicly announced on the date specified on the notice.

Only proposals submitted on the provided form(s) with no changes, additions or deletions to the terms and conditions will be considered. Proposals containing terms and conditions other than those contained herein may be considered nonconforming.

No objections with regard to the application, meaning, or interpretation of the specifications will be considered after the opening of the subject proposals. If there are questions or concerns regarding any part of plans, terms, specifications or other proposed documents, a written request for interpretation thereof may be submitted to the City Purchasing Agent prior to the deadline date, pursuant to Section 4.5 Initial Questions Submission, Final Questions Submission. The organization submitting the request shall be responsible for the prompt delivery of the request. Any interpretation in response to the written request will be made only by addendum duly issued, and a copy of such addendum will be mailed or delivered to each organization receiving a set of such documents and/or posted on the City's website. The City of Memphis will not be responsible for any other explanation or interpretation of the proposed documents. By submission of its proposal, a proposer shall be deemed to have understood fully the contents and meaning of the RFP.

All proposals must be signed by an authorized representative of your organization. Unsigned proposals will be considered nonconforming.

Any contract resulting from the proposals received in response to this solicitation shall be construed in accordance with and governed by the laws of the State of Tennessee. All actions, whether sounding in contract or in tort, relating to the validity, construction, interpretation and enforcement of this

Agreement shall be instituted and litigated in the courts of the State of Tennessee, located in Shelby County, Tennessee without regard to conflicts of laws principles.

By order of the Mayor of the City of Memphis, Tennessee.

**JIM STRICKLAND, MAYOR**

Tim Boyles, City Purchasing Agent

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## **INSTRUCTIONS TO PROPOSERS**

Proposers shall submit their signed proposal in a sealed envelope INDICATING ON THE OUTSIDE: THE COMPANY NAME and THE REQUEST FOR PROPOSAL NUMBER.

Proposers must comply with all applicable licensing requirements. Pursuant to the City of Memphis Charter, Article 71, Section 777 et seq., it is unlawful to operate a business within the limits of the city of Memphis without possessing a Memphis and Shelby County business license, excepting non-profit organizations that qualify as tax exempt under Sec. 501(c)(3) of the Internal Revenue Code. Upon award notification and prior to the City issuing a properly executed purchase order or entering into a contract with the Proposer, the successful Proposer, whose principal business address is located within the limits of the city of Memphis, will be required to submit, along with the required insurance and other required documentation, a copy of (1) the tax-exempt ruling or determination letter from the Internal Revenue Services; or (2) its current Memphis and Shelby County Business Tax Receipt/License.

Issuance of this RFP does not obligate the City to contract, in whole or in part, for services specified herein. The City of Memphis reserves the right to cancel this solicitation, in whole or in part, or to reject, in whole or in part, any and all proposals. Bidders will be notified of any cancellation, and cancellation of this RFP or any subsequent award will be posted on the City's website.

To request additional information concerning this solicitation, please see Section 4.5 Initial Questions Submission, Final Questions Submission.

This solicitation shall be in accordance with the City of Memphis Ordinances and Purchasing Policies and Procedures, which may be amended from time to time.

All materials submitted pursuant to this RFP shall become the property of the City of Memphis.

To the extent permitted by law, all proposals submitted in response to this RFP shall be kept confidential until the proposals have been evaluated and the intent to award is announced. Until the intent to award is announced, no information regarding any proposal will be released to anyone, except members of the Evaluation Committee who are responsible for evaluating the proposals and other appropriate City staff. All information provided by the Proposer in response to this RFP will be considered by the Evaluation Committee in evaluating the proposal and making an award recommendation to the City.

The Mayor of the City of Memphis is the only individual who can legally sign contracts on behalf of the City. Costs chargeable to the proposed contract shall not be incurred before receipt of a fully executed contract.

**EXHIBITS**

**EXHIBIT 1 – 50% SCHEMATIC DESIGN DOCUMENTS FOR WHITEHAVEN BANQUET FACILITY**

WHITEHAVEN COMMUNITY CENTER: GATHERING HALL

# 50% SCHEMATIC DESIGN SUBMITTAL

November 1, 2021

PREPARED BY:  daily design GROUP

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WHITEHAVEN COMMUNITY CENTER: GATHERING HALL  
**50% SCHEMATIC DESIGN SUBMITTAL**  
November 1, 2021

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# PROJECT GOALS

Resulting from the programming phase, the following are the specific project goals that will act as guiding principles throughout design and construction. If achieved, these goals will provide clarity that the project was a success:

## **PROJECT GOALS:**

**Provide a safe, inclusive, multi-functional gathering space that will become a valuable addition to the already successful Whitehaven Community Center. This multi-function space will serve both the Community Center and the Whitehaven community through interior programming aspects as well as secure outdoor “rooms”.**

**The gathering hall will provide opportunity for revenue generation and will support the health of each user from the materials put into the building to the way in which the spaces function.**

**The addition will maximize usable square footage to get the most gathering space relative to the supporting spaces.**

**The gathering hall will be open by the end of 2023 and will fall within the \$2.6M budget.**





# PROGRAMMING UPDATE

The current **PROGRAMMATIC ELEMENTS** include the following spaces:

<b>2021 ddG programmatic elements</b>	<b>SF</b>
toilet rooms	428
gathering hall	1980
PRE-FUNCTION	998
kitchen	817
storage	405
ELECTRICAL/JANITOR	233
dressing room/green room/MULTIMODAL	241
circulation/vestibules	809
outdoor patio	750
total SF	6661

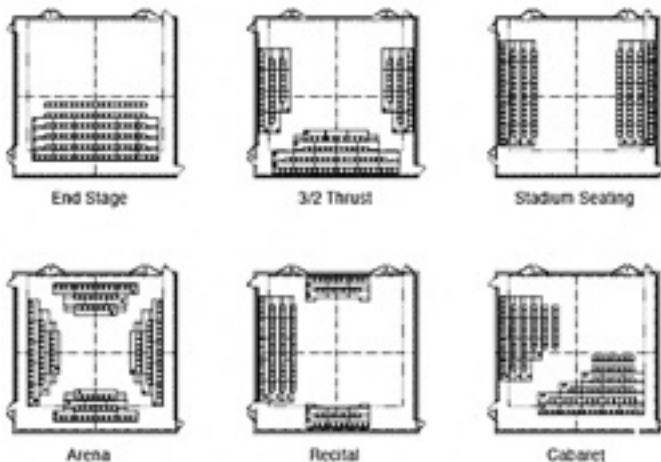
Modifications from the PROGRAMMING PHASE are evident in the pre-function space being added, the mechanical space transitioning to an electrical and janitor's room, and the renaming of the green room space into multimodal. Additional aspects such as the toilet rooms now including a family toilet room in addition to the male/female toilet rooms can be reviewed in the floor plan views accompanying this document. The PROGRAMMING PHASE program is shown below for reference.

<b>2021 ddG programmatic elements</b>	<b>SF</b>
toilet rooms	400
gathering hall	3000
kitchen	800
storage	400
mechanical	300
dressing room/green room	200
circulation/vestibules	800
outdoor patio	750
total SF	6650



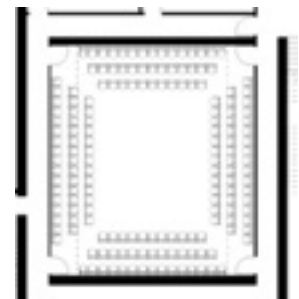
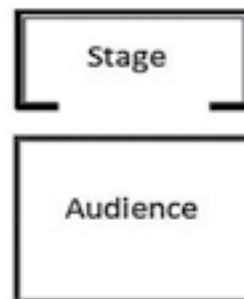
CONCEPT OF BLACKBOX SPACE (top left)  
PROSCENIUM SPACE (top right).

Both concepts would provide the community with multi-modal opportunities, providing flexible gathering space in the main house/hall area. The Proscenium space provides a dedicated “stage” area, but offers less flexibility.



PROSCENIUM

BLACK BOX



# NARRATIVES

## ARCHITECTURAL

### **GATHERING HALL/STORAGE/MULTIMODAL/FAMILY TOILET ROOM**

The goal of the gathering hall is to be a completely flexible hall that could accommodate small meetings, rehearsals, study groups, performances, receptions, birthday celebrations, and more formal events such as wedding receptions or repasses.

The layout of the gathering hall is one that combined the essence of the PROSCENIUM layout along with the flexibility of a BLACK BOX theater. The site specific need for storage, integrating the need for multiple uses for all spaces, and observations of the Bert Ferguson gathering hall drove this layout approach. The adjacency of the storage space for this facility provides the ability to have back stage circulation without the integration of a permanent stage. There is also a connection to the multimodal space which can serve as a green room when the gathering hall is used for performances. The multimodal space includes access to a family toilet room for use from that space as well as from the public corridor. This is the toilet room that would include a baby changing station and space for mothers to feed their babies.



## **ELECTRICAL/SOUND**

The electrical room will provide space for electrical service to enter the building. The electrical service on site comes from the south which is why this space is located at the southwest corner. It also doubles as a sound room where the controls for the gathering hall can be sourced from.

## **PRE-FUNCTION**

The pre-function space was integrated into the plan after further understanding the programming of the Bert Ferguson facility as well as through added flexibility in the use of the gathering hall. The pre-function area has an operable partition that separates the gathering hall from this space which can be closed for events to happen concurrently, or open to create one larger meeting space. It is intended that speakers are located at the west end of the gathering hall which would have unobstructed views from the pre-function space. This also allows the building to have more revenue generating opportunities.

## **KITCHEN**

The kitchen space would serve as simple prep area for catering of large events, concessions for performances, and could also serve as a teaching kitchen base for educational opportunities. Loading takes place on the south side of the kitchen and there is access to both the pre-function and gathering hall.

## **MATERIALITY**

The exterior of the building is intended to compliment the existing brutalist architecture. It is desired to have CMU construction with brick veneer where the brick would be in compliment to the original design and would not try to match the color exactly. Windows would be concentrated on the east and courtyard facing spaces with the slipping of brick walls on the south and west facades creating more sparing spaces for glass.

The interior of the building would also include CMU walls with tile facing to be in keeping with the existing community center.

## **CIVIL**

The proposed project entails an addition to the existing Community Center building and parking on the south side of the existing facility. Also there will be a patio/courtyard area on the east side of the proposed building.

There will be an asphalt drive connecting the existing west entry drive to the south entry drive off of Finley Road. This design section will match the section in Phase 1 improvements as recommended by the Geotechnical Report dated 11/14/18 by Geotechnology. This drive will supply the site with approximately 20 parking spaces to meet the requirements of the Unified Development Code (1 space/300 s.f. building).

The site will also entail a “dry” storm water detention basin on the south side of the site along Finley with an outlet pipe tied to the Finley drainage system. This detention facility will meet the requirements of the City of Memphis Storm Water Manual. The basin location will be chosen to maximize storage and minimize existing utility alterations.

The existing building has a utility corridor on the south side of the site that will need relocation to work for both existing and proposed buildings.

## **LANDSCAPE ARCHITECTURE**

Since it is the goal of the design team to attain site sustainability the landscape plant palette will be native materials to west Tennessee region. Once these plants are established after a couple of growing seasons there will be less demand on the water supply. Steady watering could be required at times during extreme heat and drought periods that typically occurs during the months of July and August.

The landscape plan will meet the Unified Development Code requirements while at the same time provide minimal maintenance for Park’s ever-increasing budget for landscape upkeep. Landscape beds will be kept to a minimum only enhancing key entry points and gathering areas. Codes does require tree plantings along the street frontages and interior parking lots but could also be used to shade parts of the building to help reduce interior cooling costs during Memphis’s hot summer months.

The following is a link to an extensive list of native plant materials that could be used for this project:

<https://www.tnipc.org/wp-content/uploads/2016/08/landscaping-west-tn.pdf>

## IRRIGATION

There is an existing irrigation system that was installed during the Phase 1 site improvements. The irrigation controller has the capacity to add additional stations required for Phase 2. The irrigation system layout will be designed to provide maximum water distribution efficiency. The goal is to have head-to-head coverage for turf areas while watering the trees and shrub beds with efficient drip irrigation systems. Grass areas, shrub beds and trees will each have their own separate dedicated zones to meet their varying water needs. Utilizing drip irrigation where possible provides water directly to the plants which reduces water waste approximately 30% less than using traditional spray heads. Applying water at ground level prevents mildew and other diseases that can grow and spread on wet leaves. Below are pictures showing how drip irrigation will be installed for shrub beds and tree rings:



*Drip lines installed in planting bed prior to mulching to hide lines.*



*Individual tree drip line for deep root watering. These lines are concealed with 3-inch layer mulch ring.*

## **STRUCTURAL**

Whitehaven Community Center Modifications will consist of an expansion to the South of the existing building in the amount of approximately 6,600 SF additional space, including gathering hall, kitchen, pre-function main spaces with additional hallways, storage and bathroom. These spaces will be CMU block wall with brick facade on the exterior to match the existing building facade on the West and South ends of the building. The circulation spaces are going to have CMU and lintels along the East and North end of the hallways, with intermittent doors and windows for a more open feel in the hallways. There will also be windows and along the North and East ends of the kitchen and pre-function spaces into the outdoor space. The main bearing walls will run North-South based on the shorter span in the gathering hall to prevent the addition of columns down the middle of that room. The foundations will be shallow foundations with an allowable bearing capacity of 2300 psf for strip footings, per Geotechnical recommendations via November 14, 2018 Geotechnology Report. The roof will be framed with beams and joists, spacing as required, with LW concrete decking. The roof at this time is expected to be a flat roof. Accommodations will be made for additional structure if it is desired to place AHUs on the roof of the building.

A couple of the design parameters that must be mentioned are the seismic requirements for the area. Memphis is a high-seismic design area, so our walls require more structure than window or opening, especially on lateral walls. The lateral system we will use for design will be special reinforced masonry shear walls which are required in both directions along the length and width of the buildings. If a higher ceiling is desired in gathering hall, then we might look into adding columns in the middle of the span which would result in shallower beams for a higher ceiling height. Structural elements are subject to change as the design finalizes.

## **PLUMBING**

### Division 21 – Fire Protection System

The fire protection systems for this facility will include a sprinkler fire suppression system. The design of the new automatic fire suppression system will provide complete coverage of all spaces in the building.

The new automatic fire suppression system will be fed from a new fire main entering the building at the ground level. A fire department connection located exterior of the building will be provided. The automatic fire suppression system design and related hydraulic calculations will be in accordance with the National Fire Protection Association's "Standard for the Installation of Sprinkler Systems" (NFPA-13). The piping for the automatic sprinkler fire suppression system will be schedule 40 and schedule 10 black steel supported and braced for seismic activity in accordance with NFPA-13.



## DIVISION 22 – PLUMBING

The plumbing systems for this facility will include domestic water (hot and cold), sanitary waste and vent, roof rainwater drainage, and condensate drainage. These systems will include equipment, piping and related appurtenances as described below. The existing gas on site is in conflict with the proposed building and must be relocated.

### DOMESTIC WATER

The new domestic water systems will be fed from a new water main entering the building. The existing water on site is in conflict with the proposed building and must be relocated. The new water main will be equipped with a reduced pressure principle backflow preventer. Gas water heater(s) located in the mechanical equipment rooms will supply the domestic hot water. A piped hot water return system with circulation pump will be included to ensure hot water will be available to the remote portions of the hot water system within a reasonable period of time. All above slab water piping will be type-L copper with lead-free soldered joints and will be insulated for its entire length throughout the building. The water main entrance into the building will be sleeved type-K copper.

### SANITARY WASTE, SANITARY VENT, AND ROOF RAINWATER DRAINAGE

The sanitary sewer and roof rainwater drainage systems will be gravity systems and will be connected to the public sanitary sewer and underground site drainage systems, respectively. Condensate from the air conditioning system will discharge into indirect waste receptors connected to the sanitary sewer system. The sanitary sewer drainage system piping will be cast iron with no-hub joints and fittings above slab-on-grade and PVC with solvent welded joints and fittings below slab-on-grade. The roof rainwater drainage system piping will be cast iron with no-hub joints and fittings above slab-on-grade and PVC with solvent welded joints and fittings below slab-on-grade. The condensate piping will be DWV copper or standard weight no-hub cast iron. The condensate piping, horizontal rainwater piping, and that portion of the sanitary waste piping carrying cold drainage will be insulated to avoid building damage due to exterior condensation on the piping.

### PLUMBING FIXTURES

The plumbing fixtures will be commercial grade white vitreous china or enameled cast iron. The water closets will be equipped with hands-free, sensor operated flush valves. The lavatories in the rest rooms will be for countertop installation and will be equipped with automatic hands-free, sensor operated faucets. Automatic Drinking Fountains throughout will be touch-free with additional bottle fillers included. The restroom fixture placement, access and mounting heights will meet the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG). All fixtures will meet water conservation codes and standards.

## **MECHANICAL**

The mechanical system will consist of roof mounted packaged units (RTU) with direct expansion cooling and natural gas heating. Outside air for these spaces will be provided by the RTUs serving the spaces. Ion plasma generating devices will also be considered in order to lower the required ventilation air throughout while also keeping overall building pressure positive in relation to the exterior. Space mounted sensors/Thermostats will be located in each zone for occupant comfort and owner control.

### **AIR DISTRIBUTION**

Supply and return ductwork will be routed from each unit to ceiling diffusers. Ductwork shall be galvanized steel with 2" thick flexible duct wrap external insulation. Ventilation and exhaust rates shall meet requirements of ASHRAE Standard 62. Each HVAC system serving occupied areas will comply with acoustical, temperature control, and air distribution requirements of ASHRAE Standard 55 and the ASHRAE Applications Handbook. All air handling equipment will be provided with fire or smoke detection devices as required by NFPA 90A. Listed fire-stop systems will be used for penetrations of fire-rated assemblies. Fire dampers or smoke dampers will be provided at all duct penetrations and HVAC openings in fire-rated walls, partitions, or floors as required by NFPA 90A. Air handling equipment will be interlocked with fire and smoke detection systems to prevent operation when these systems are in alarm condition.

### **HVAC CONTROLS**

If requested by owner, all new HVAC equipment will be connected to and monitored by a new building direct digital control (DDC) system. The building DDC system shall be provided with an operator workstation consisting of personal computer with LAN connection, printer, software and hardware. The DDC system shall be of modular design, with self-diagnostic capability, historical data storage, and user serviceability.

## **ELECTRICAL SYSTEMS**

### **Normal Power System**

The normal power system shall be derived providing a new electrical service to the building from the existing MLGW transformer currently on site. The existing electrical secondary will be removed, and the existing electrical panels will be re-fed from the new main electrical distribution panel. The building service voltage will be a 208-volt, three phase, grounded wye system. All major mechanical system equipment will be powered at this voltage. The service will consist of main service rated panelboard with a surge protective device. The electrical service will also be provided with phase loss protection to provide some protection against equipment damage to power quality issues. USB combination receptacles will be provided in appropriate areas for charging portable devices. A separate subpanel will serve kitchen loads. The kitchen subpanel will be provided with GFCI breakers as required by code for kitchen loads. Panelboards shall be by Eaton Cutler Hammer, Square D, or ABB - GE.

## GROUNDING SYSTEM

All grounding shall be provided according to the National Electrical Code.

## LIGHTING SYSTEM

Generally, lighting shall be provided using LED sources in recessed fixtures. Mechanical and electrical spaces shall utilize 4' surface mounted LED strip fixtures. Exterior fixtures shall utilize LED lamp sources. Special attention will be paid to lighting levels to promote and enhance safety around the building perimeter. The gathering hall will be provided with appropriate lighting controls with the ability to have scene selections for common gathering hall events, but with the ability to customize the lighting levels as desired. Occupancy sensors and radio-controlled drivers will be installed integral to most of the troffers allowing the fixtures to communicate with each other with wireless technology. This technology allows the users to make modifications to the switching zones as the owner's needs change in the future. All the devices and sensors will be powered and not include any batteries for the lighting control system. A lighting control panel will control the lighting throughout public occupancy spaces such as corridors. All lighting and control designs shall meet or exceed the IECC and ASHRAE requirements. All emergency lighting and exit signs will be powered by a centralized lighting inverter.

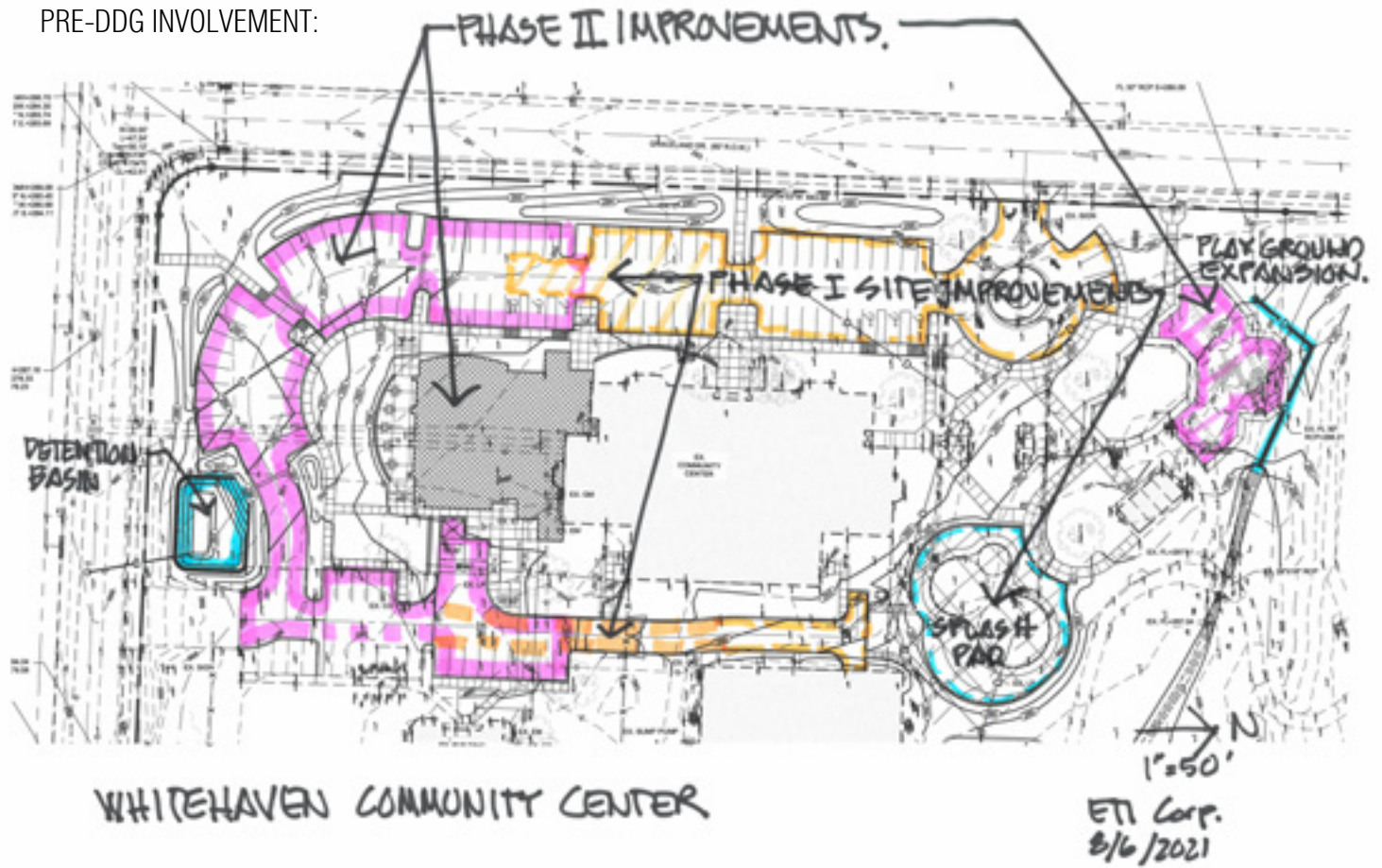
## COMMUNICATIONS

The communications system shall consist of raceway, outlets, and pull strings as required for all pathways. The owner will provide the "head-in" equipment including sound racks, switches and servers. The cabling will be provided by the owner's vendor. Close coordination of the owner's requirements for all low voltage systems, including the audio/visual needs of the gathering hall will be coordinated. The design team will coordinate all requirements with the stakeholder so that all necessary rough-ins are included.

## FIRE ALARM SYSTEM

The fire alarm system shall consist of tamper proof manual stations, system smoke detectors, duct smoke detectors with combination carbon monoxide detectors where required, audio/visual alarms and supervision for all sprinkler system flow, tamper, and pressure devices. All sprinkler system devices will be omitted if the building is not sprinklered. All audible notification appliances shall be provided with speakers for a voice evacuation system. The main fire alarm control panel will be located as required by the local fire marshal and will match the owner's standard list of providers.

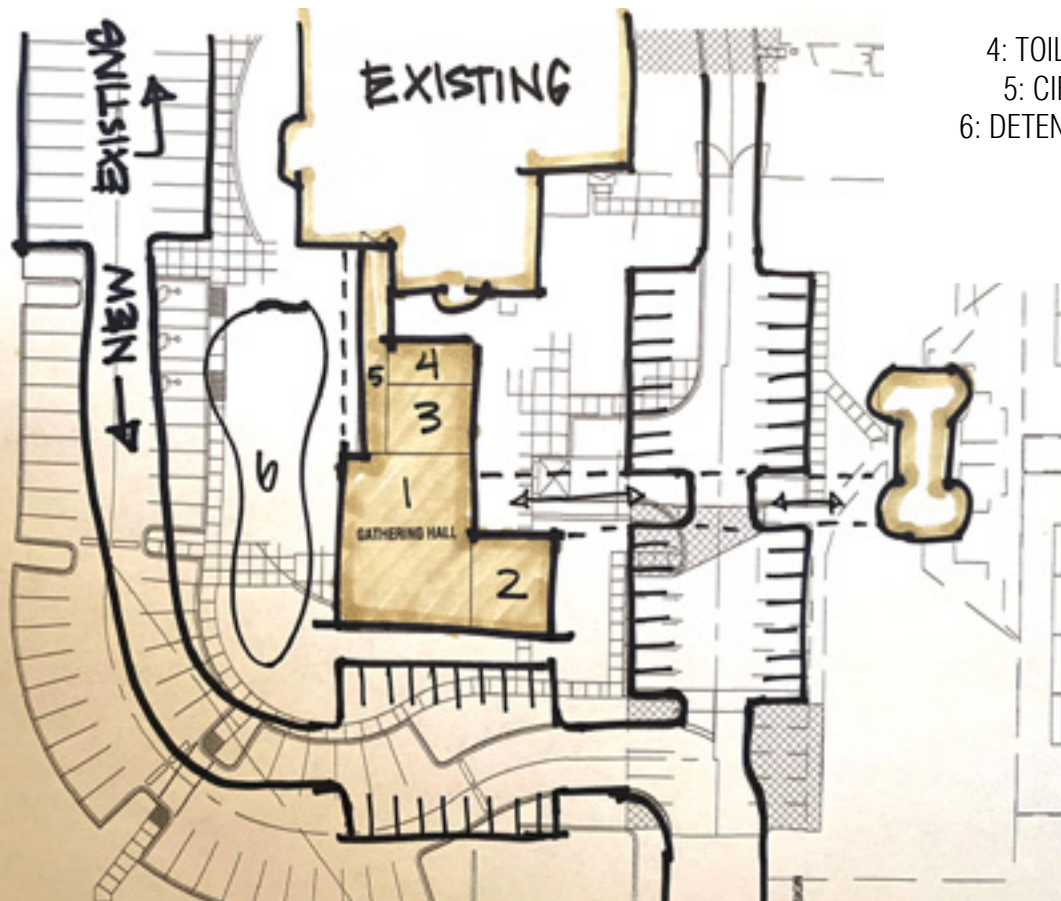
PRE-DDG INVOLVEMENT:



WHITEHAVEN COMMUNITY CENTER

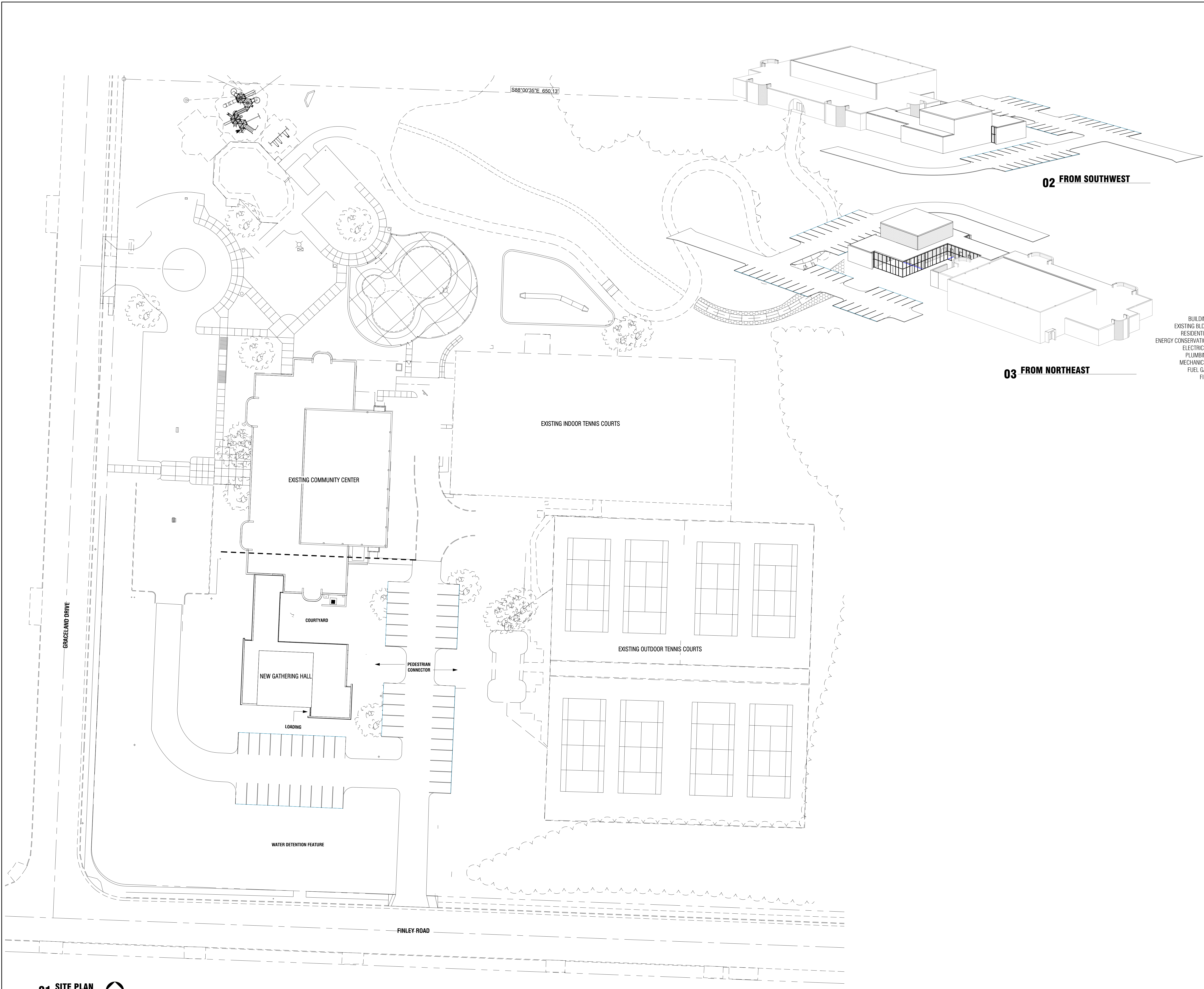
- 1: GATHERING HALL
- 2: MECHANICAL (outdoor access), STORAGE, GREEN ROOM
- 3: KITCHEN
- 4: TOILET ROOMS
- 5: CIRCULATION
- 6: DETENTION AREA

PROGRAMMING PHASE FLOOR PLAN SKETCH:



## **DRAWING UPDATES**

Previous iterations of the project are documented to the left for reference. Please review the following architectural drawing sheets for plan updates.



**01 SITE PLAN**  
1" = 30'-0"

**PROJECT BRIEF:**  
4318 GRACELAND DRIVE IS AN EXISTING COMMUNITY CENTER LOCATED IN AN R-10 ZONING DISTRICT. THE SITE IS ALSO LOCATED IN AN OPPORTUNITY ZONE.

THE SCOPE OF WORK INCLUDES LIGHT RENOVATION OF THE EXISTING COMMUNITY CENTER AND THE ADDITION OF A GATHERING HALL AND SUPPORTING SPACES INCLUDING A KITCHEN, STORAGE SPACE, FIRE-FUNCTION AREA, MULTIMODAL SPACE, JANITOR'S ROOM, AND RESTROOMS. SITEWORK INCLUDES THE ADDITION OF 20 PARKING SPACES AND AN OUTDOOR GATHERING AREA FOR EVENT ATTENDEES.

**PARKING:** PER THE UDC, THIS FACILITY IS CLASSIFIED AS A NEIGHBORHOOD ARTS CENTER PER COMMUNICATION WITH ETI AND BURK RENNER (SCCC) IN OCT 2021. THE NEW CONSTRUCTION IS 4,100 NET SF/300 REQUIRING 14 SPACES AND THE EXISTING USEABLE SF IS 13,959SF/300 REQUIRING 47 SPACES. A TOTAL OF 61 PARKING SPACES ARE REQUIRED FOR THE ENTIRE FACILITY BOTH EXISTING AND NEW. PREVIOUS PHASE 1 IMPROVEMENTS PROVIDED 41 SPACES SO AN ADDITIONAL 20 SPACES ARE REQUIRED FOR THIS NEW CONSTRUCTION.

OCCUPANCY CLASSIFICATION IS A-2 PER 2015 IBC.

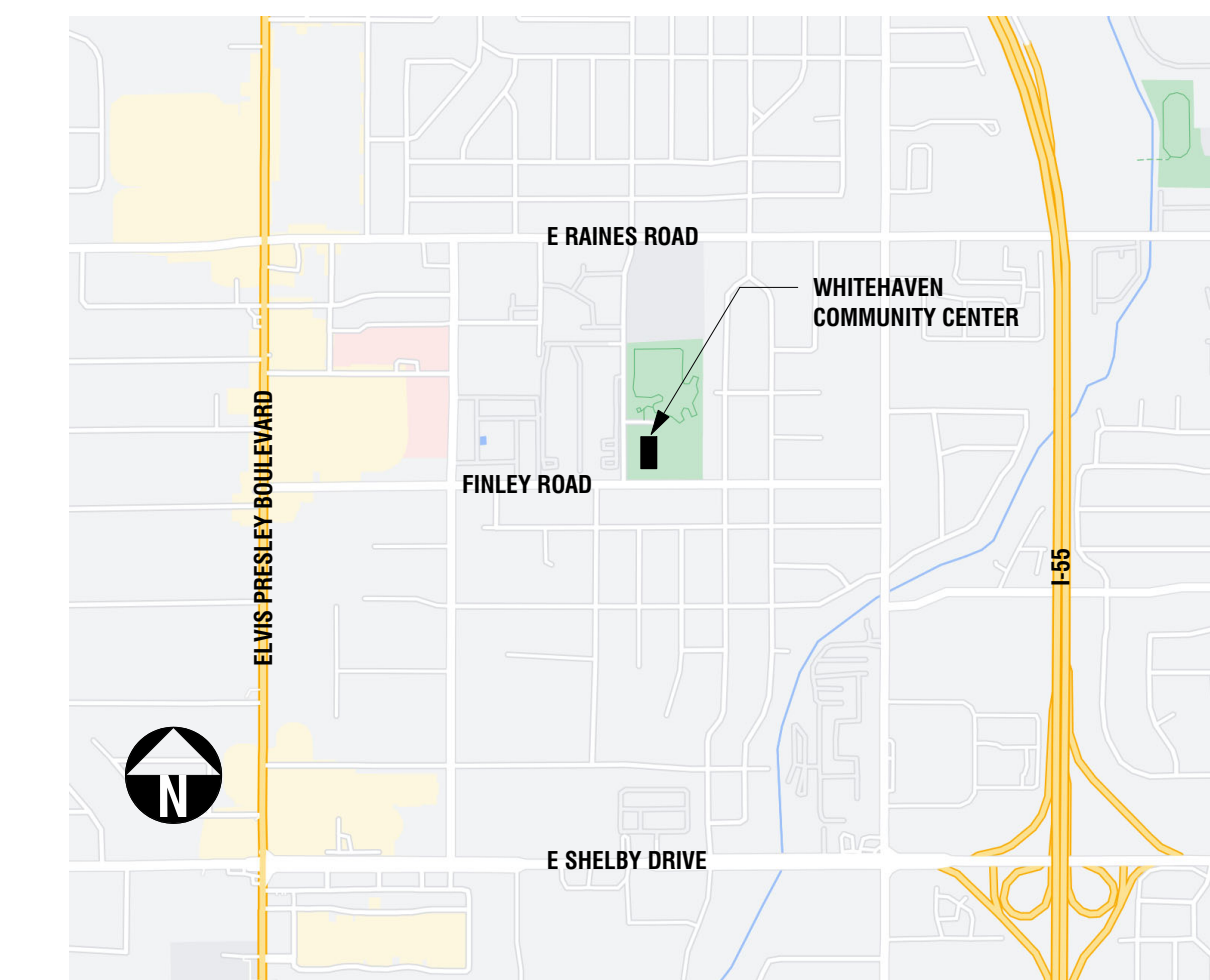
**PLUMBING COUNTS:** PER IBC 2015 TABLE 2902.1:  
 • WATER CLOSETS: MALE 1 PER 75  
 • WATER CLOSETS: FEMALE 1 PER 75  
 • LAVATORIES: MALE + FEMALE 1 PER 200  
 • DRINKING FOUNTAIN: 1 PER 500  
 • 1 SERVICE SINK  
 225 OCCUPANTS IS MAX OCCUPANCY FOR 3 WATER CLOSETS PER MALE/FEMALE

RELEVANT BUILDING CODES ARE LISTED BELOW:

**SHELBY COUNTY CONSTRUCTION CODE ENFORCEMENT ADOPTED CONSTRUCTION CODES:**

BUILDING:	2015	INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS
EXISTING BLDG.:	2015	INTERNATIONAL EXISTING BUILDING CODE WITH LOCAL AMENDMENTS
RESIDENTIAL:	2015	INTERNATIONAL RESIDENTIAL CODE WITH LOCAL AMENDMENTS
ENERGY CONSERVATION:	2015	INTERNATIONAL ENERGY CONSERVATION CODE WITH LOCAL AMENDMENTS
ELECTRICAL:	2014	INTERNATIONAL ELECTRIC CODE WITH LOCAL AMENDMENTS
PLUMBING:	2015	INTERNATIONAL PLUMBING CODE WITH LOCAL AMENDMENTS
MECHANICAL:	2015	INTERNATIONAL MECHANICAL CODE WITH LOCAL AMENDMENTS
FUEL GAS:	2015	INTERNATIONAL FUEL GAS CODE WITH LOCAL AMENDMENTS
FIRE:	2015	INTERNATIONAL FIRE CODE LOCAL AMENDMENTS

**VICINITY MAP:**



**SHEET LIST**

NUMBER:	NAME:
A001	ARCHITECTURAL SITE PLAN
A101	FLOOR PLAN/COMMUNITY CENTER
A102	FLOOR PLAN/GATHERING HALL

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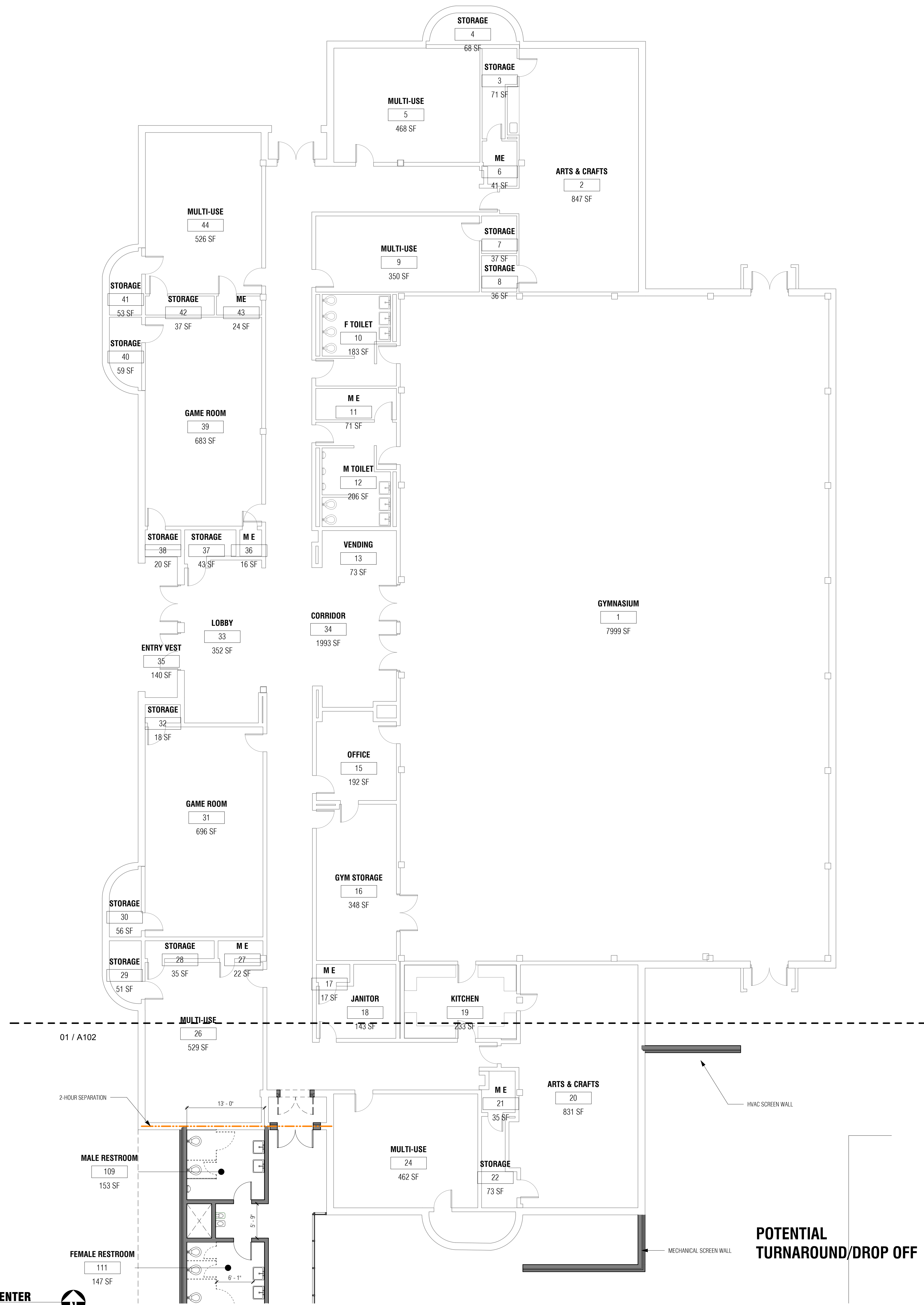
CLIENT:  
**CITY OF MEMPHIS**  
 PROJECT LOCATION:  
**WHITEHAVEN COMMUNITY CENTER**  
 4318 GRACELAND DRIVE  
 MEMPHIS, TN 38116  
 PROJECT NUMBER:  
**21.22**

PROJECT NAME:  
**GATHERING HALL**

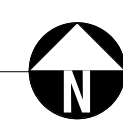
DATE ISSUED: NOVEMBER 1, 2021  
 DRAWING SCALE: As Indicated  
 DRAWN BY: KATE HAYWOOD

**ARCHITECTURAL SITE PLAN**

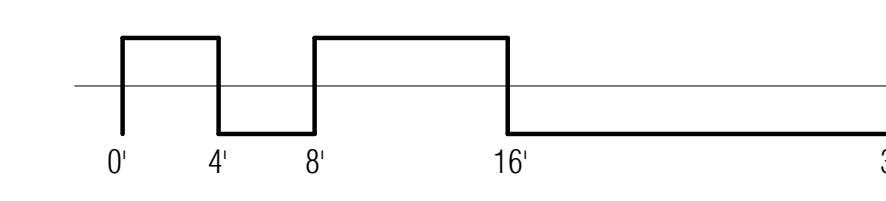
50% SCHEMATIC DESIGN **A001**



01 EXISTING COMMUNITY CENTER  
1/8" = 1'-0"



EXISTING COMMUNITY CENTER					
NAME	NUMBER	AREA	LOAD FACTOR	OCCUPANCY COUNT	NOTES
GYMNASIUM	1	7999 SF			
ARTS & CRAFTS	2	847 SF			
STORAGE	3	71 SF			
STORAGE	4	68 SF			
MULTI-USE	5	468 SF			
ME	6	41 SF			
STORAGE	7	37 SF			
STORAGE	8	36 SF			
MULTI-USE	9	350 SF			
F TOILET	10	183 SF			
M E	11	71 SF			
M TOILET	12	206 SF			
VENDING	13	73 SF			
OFFICE	15	192 SF			
GYM STORAGE	16	348 SF			
M E	17	17 SF			
JANITOR	18	143 SF			
KITCHEN	19	233 SF			
ARTS & CRAFTS	20	831 SF			
M E	21	35 SF			
STORAGE	22	73 SF			
MULTI-USE	24	462 SF			
MULTI-USE	26	529 SF			
M E	27	22 SF			
STORAGE	28	35 SF			
STORAGE	29	51 SF			
STORAGE	30	56 SF			
GAME ROOM	31	696 SF			
STORAGE	32	18 SF			
LOBBY	33	352 SF			
CORRIDOR	34	1993 SF			
ENTRY VEST	35	140 SF			
M E	36	16 SF			
STORAGE	37	43 SF			
STORAGE	38	20 SF			
GAME ROOM	39	683 SF			
STORAGE	40	59 SF			
STORAGE	41	53 SF			
STORAGE	42	37 SF			
ME	43	24 SF			
MULTI-USE	44	526 SF			
		18135 SF		0	



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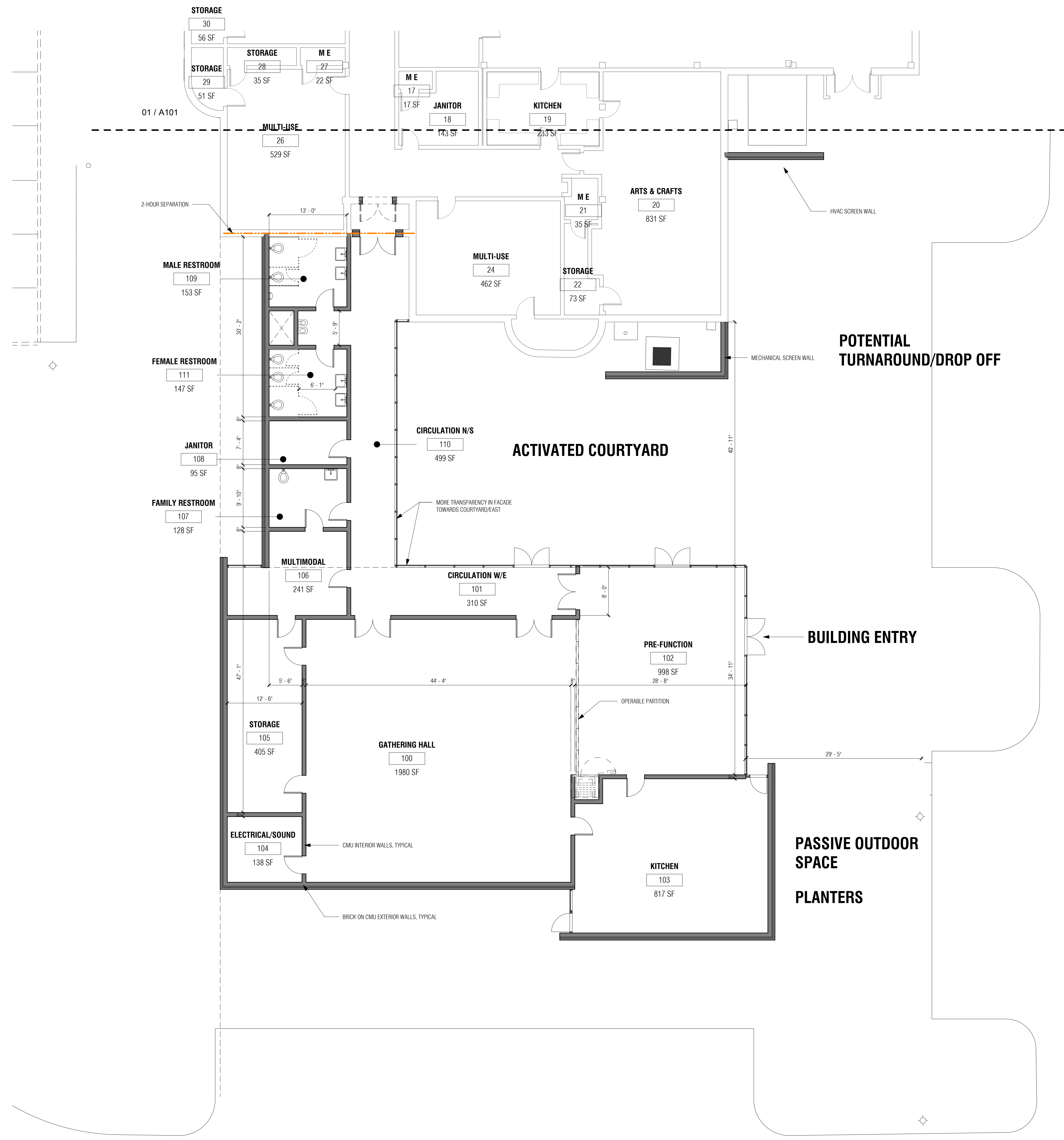


CLIENT  
CITY OF MEMPHIS  
PROJECT LOCATION  
WHITEHAVEN COMMUNITY CENTER  
4318 GRACELAND DRIVE  
MEMPHIS, TN 38116  
PROJECT NUMBER  
21.22  
PROJECT NAME  
GATHERING HALL

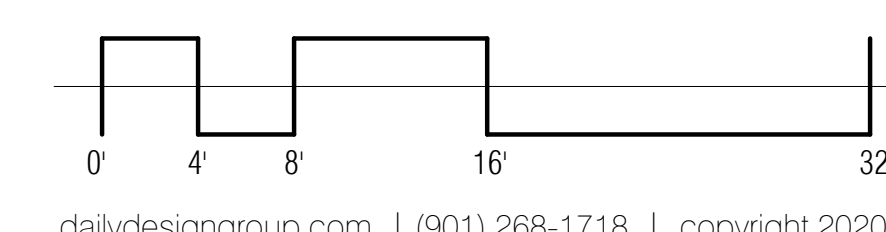
DATE ISSUED  
NOVEMBER 1, 2021  
DRAWING SCALE  
1/8" = 1'-0"  
DRAWN BY  
Author

DRAWING TITLE  
**FLOOR PLAN/COMMUNITY CENTER**

50% SCHEMATIC DESIGN **A101**

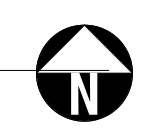


NEW GATHERING HALL					
NAME	NUMBER	AREA	LOAD FACTOR	OCCUPANCY COUNT	NOTES
GATHERING HALL	100	1980 SF	15 SF	132	
CIRCULATION W/E	101	310 SF	0 SF		
PRE-FUNCTION	102	998 SF	15 SF	67	
KITCHEN	103	817 SF	200 SF	5	
ELECTRICAL/SOUND	104	138 SF	300 SF	1	
STORAGE	105	405 SF	0 SF		
MULTIMODAL	106	241 SF	20 SF	13	
FAMILY RESTROOM	107	128 SF	0 SF		
JANITOR	108	95 SF	0 SF		
MALE RESTROOM	109	153 SF	0 SF		
CIRCULATION N/S	110	499 SF	0 SF		
FEMALE RESTROOM	111	147 SF	0 SF		
		5911 SF		218	



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**01 NEW GATHERING HALL**  
1/8" = 1'-0"



CLIENT  
**CITY OF MEMPHIS**  
PROJECT LOCATION  
**WHITEHAVEN COMMUNITY CENTER**  
4318 GRACELAND DRIVE  
MEMPHIS, TN 38116  
PROJECT NUMBER  
**21.22**  
PROJECT NAME  
**GATHERING HALL**

DATE ISSUED  
NOVEMBER 1, 2021  
DRAWING SCALE  
1/8" = 1'-0"  
DRAWN BY  
KDH

**FLOOR PLAN/GATHERING HALL**

50% SCHEMATIC DESIGN

**A102**







# COST ESTIMATE

November 1, 2021

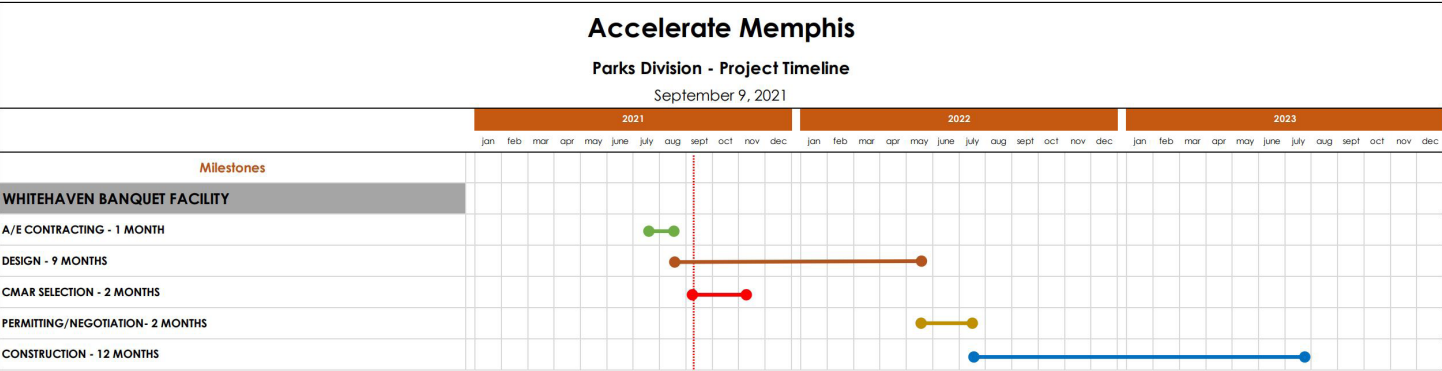
## WHITEHAVEN COMMUNITY CENTER | 50% SD BUDGET NUMBERS

project number 21.22

<b>2021 ddG programmatic elements</b>	<b>SF</b>	<b>\$/SF</b>	<b>program subtotal</b>
toilet rooms	428	\$375	\$160,500
gathering hall	1980	\$375	\$742,500
PRE-FUNCTION	998	\$375	\$374,250
kitchen	817	\$375	\$300,000
storage	405	\$375	\$151,875
ELECTRICAL/JANITOR	233	\$375	\$87,375
dressing room/green room/MULTIMODAL	241	\$375	\$90,375
circulation/vestibules	809	\$375	\$303,375
outdoor patio	750	\$200	\$150,000
total SF	6661		
		<b>budget construction subtotal</b>	<b>\$2,360,250</b>
		10% contingency	\$236,025
		<b>budget construction total</b>	<b>\$2,596,275</b>



# TIMELINE





**GEOTECHNICAL EXPLORATION  
WHITEHAVEN COMMUNITY CENTER  
IMPROVEMENTS  
MEMPHIS, TENNESSEE**

Prepared for:

**EVANS TAYLOR FOSTER CHILDRESS ARCHITECTS  
MEMPHIS, TENNESSEE**

Prepared by:

**GEOTECHNOLOGY, INC.  
MEMPHIS, TENNESSEE**

Date:

**NOVEMBER 14, 2018**

Geotechnology Project No.:

**J033136.01**

SAFETY  
QUALITY  
INTEGRITY  
PARTNERSHIP  
OPPORTUNITY  
RESPONSIVENESS



November 14, 2018

Mr. Michael Childress , AIA  
Evans Taylor Foster Childress Architects  
343 North Main Street  
Memphis, Tennessee 38103

Re: Geotechnical Exploration  
Whitehaven Community Center Improvements  
Memphis, Tennessee  
Geotechnology Project No. J033136.01

Dear Mr. Childress:

Presented in this report are the results of the geotechnical exploration performed by Geotechnology, Inc. for the referenced project. The report includes our understanding of the project, observed site conditions, conclusions and/or recommendations, and support data as listed in the Table of Contents.

We appreciate the opportunity to provide geotechnical services for this project. If you have any questions regarding this report, or if we can be of any additional service to you, please do not hesitate to contact us.

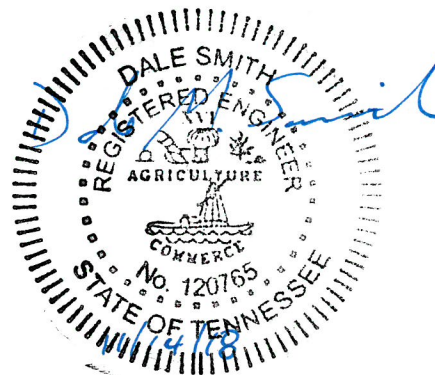
Respectfully submitted,  
**GEOTECHNOLOGY, INC.**

Dale M. Smith, P.E.  
Geotechnical Manager

ABM/DMS/JKH:abm

Copies submitted: Client (email/2 mail)

John K. Henson, P.G.  
Project Manager





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**GEOTECHNICAL EXPLORATION  
WHITEHAVEN COMMUNITY CENTER IMPROVEMENTS  
MEMPHIS, TENNESSEE  
November 14, 2018 | Geotechnology Project No. J033136.01**

**1.0 INTRODUCTION**

Geotechnology, Inc., prepared this geotechnical exploration report for Evans Taylor Foster Childress Architects (ETFC) for the proposed Whitehaven Community Center improvements in Memphis, Tennessee. Our services documented in this report were provided in general accordance with the terms and scope of services described in our Proposal P033136.01, dated September 27, 2018. Our services documented in this report were authorized by Mr. Michael Childress's signed acceptance of our terms dated October 2, 2018.

The purposes of the geotechnical exploration were to develop a general subsurface profile at the site and prepare recommendations for the geotechnical aspects of the design and construction of the project as defined in our proposal. Our scope of services included site reconnaissance, geotechnical borings, laboratory testing, engineering analyses, and preparation of this report.

A copy of "Important Information about This Geotechnical-Engineering Report," published by the Geotechnical Business Council of the Geoprofessional Business Association, is included in Appendix A for your review. The publication discusses report limitations and ways to manage risk associated with subsurface conditions.

**2.0 SITE DESCRIPTION**

The site is located at the existing Whitehaven Community Center at 4318 Graceland Drive in Memphis, Tennessee as shown in Figure 1 (Site Location and Topography) in Appendix B. The site consists of existing community center and tennis center buildings and indoor and outdoor tennis courts with associated parking and drive areas, a playground area, sports field and track. The area of the planned addition is currently covered with grass and trees and appears level based on a site reconnaissance conducted by a representative of Geotechnology and available imagery.

**3.0 PROJECT INFORMATION**

The project involves the design and construction of an addition to the Whitehaven Community Center building in an area south of the existing facility with associated parking and drive areas planned south and west of the existing facility. The building addition will be a single-story structure with load bearing, masonry walls. Structural loads were not provided; based on our experience, we have assumed maximum column and wall loads of 75 kips and 4 kips per lineal foot,



respectively. Grading plans were not provided; we have assumed minimal elevation change will be required and the addition will match grade with the existing structure.

#### **4.0 PROJECT DOCUMENTS**

The following information was reviewed for this project:

- Boring Location Plan titled “Whitehaven Community Center Improvements,” prepared by ETFC, dated September 14, 2018.
- Correspondence with Mr. Childress of ETFC.

#### **5.0 GEOTECHNICAL EXPLORATION**

The geotechnical exploration consisted of ten borings, designated as Borings B-1 through -10. Borings B-1 through -4 were drilled within the footprint of the proposed building, Borings B-5 through -10 were drilled in associated parking and drive areas. The boring locations were located in the field by representatives of Geotechnology. The approximate boring locations shown on Figure 2 – Aerial Photograph of Site and Boring Locations in Appendix B are approximate; if elevations or more precise locations are required, the client should retain a registered surveyor to establish boring locations and elevations.

The borings were drilled October 22 through 24, 2018 with a rotary drill rig (CME 55) advancing hollow-stem augers and using wet rotary methods in Boring B-3, as indicated on the boring logs presented in Appendix C. Soil sampling was accomplished ahead of the augers at the depths indicated on the boring logs, using 2-inch-outside-diameter (O.D.) split-spoons and 3-inch-O.D., thin-walled Shelby tube samplers in general accordance with the procedures outlined by ASTM D1586 and ASTM D1587, respectively. Standard Penetration Tests (SPTs) were performed on the split-spoon samples using an automatic hammer to obtain the standard penetration resistance or N-value<sup>1</sup> of the sampled material.

The drill crew kept a field log of the subsurface profile noting the soil types and stratifications, groundwater, SPT results, and other pertinent data. Observations for groundwater were made in the borings during drilling.

Representative portions of the split-spoon samples were placed in glass jars to preserve sample moisture. The Shelby tubes were capped and taped at their ends to preserve sample moisture and unit weight, and the tubes were transported and stored in an upright position. The glass jars

---

<sup>1</sup> The standard penetration resistance, or N-value, is defined as the number of blows required to drive the split-spoon sampler 12 inches with a 140-pound hammer falling 30 inches. Since the split spoon sampler is driven 18 inches or until refusal, the blows for the first 6 inches are for seating the sampler, and the number of blows for the final 12 inches is the N-value. Additionally, “refusal” of the split-spoon sampler occurs when the sampler is driven less than 6 inches with 50 blows of the hammer.



and Shelby tubes were marked and labeled in the field for identification, then returned to our laboratory in Memphis.

## 6.0 LABORATORY REVIEW AND TESTING

Laboratory testing was performed on soil samples to assess engineering and index properties. The soil testing consisted of moisture contents, Atterberg limits, grain size determinations (gradation), and unconsolidated-undrained triaxial compression (UU). Most of the laboratory test results are presented on the boring logs in Appendix C. The Atterberg limit, gradation and UU test outputs are also provided in Appendix D. The laboratory test and corresponding test method standard used are presented in Table 1.

**Table 1. Summary of Laboratory Tests and Methods.**

Laboratory Test	Test Method
Moisture Content	ASTM D2216
Atterberg Limits	ASTM D4318
Grain Size Determination	ASTM D6913
Unconsolidated-Undrained Triaxial Compression (UU)	ASTM D2850

The boring logs were prepared by the project geotechnical engineer from the field logs, visual classification of the soil samples in the laboratory, and laboratory test results. Terms and symbols used on the boring logs are presented on the Boring Log: Terms and Symbols in Appendix C. Stratification lines on the boring logs indicate approximate changes in strata. The transition between strata could be abrupt or gradual.

## 7.0 SUBSURFACE CONDITIONS

### 7.1 Stratigraphy

The ground surface at the boring locations was generally covered with grass with the exception of Borings B-5 and -6 which were drilled in the existing pavement. Topsoil and pavement thicknesses were approximately 6 inches. Underlying the topsoil and pavement, the site stratigraphy generally consisted of predominately fine-grained soil to the depth of boring termination in the borings with the exception of Boring B-3. In Boring B-3, the predominately fine-grained soils were underlain by coarse-grained soils to the maximum depth of boring termination (100 feet). More specific descriptions of the soil layers are provided below and on the boring logs in Appendix C.

Predominately Fine-Grained Soil. Soils classified as silt (ML), low plasticity, “lean” clay (CL) and silty clay (CL-M) with varying amounts of sand were encountered extending to a maximum depth of approximately 33 feet. Moisture contents of tested samples ranged from 8 to 30 percent. Atterberg limits performed on select samples yielded liquid limits (LL) ranging from 28 to 38 percent and plasticity indices (PI) of 7 to 18 percent. The UU test performed on an undisturbed Shelby tube sample recovered in Boring B-4 at a depth of 10 feet, yielded an undrained shear



strength of 1,300 pounds per square foot (psf). SPT N-values ranged from 3 to 28 blows per foot (bpf). The results of laboratory and field testing indicate soft to very stiff consistencies.

Coarse-Grained Soil. In Boring B-3 the predominately fine-grained soils were underlain by coarse-grained soil at a depth of approximately 33 feet. A 10-foot-thick, high plasticity, “fat” clay (CH) layer was encountered at a depth of approximately 88 feet. Moisture contents in the fat clay layer ranged from 33 to 37 percent. The SPT N-values in the fat clay layer ranged from 9 to 24, indicating stiff to very stiff consistencies. The coarse-grained soil was classified as clayey sand (SC), clayey gravel (GC) and sand with silt and gravel (SP-SM). The SPT N-values ranged from 33 to greater than 50 bpf, indicating dense to very dense conditions in the coarse-grained soils.

## **7.2 Groundwater**

Groundwater was not observed during drilling. Groundwater levels might not have stabilized before backfilling of the borehole, which is typical in low permeability, cohesive soils. Groundwater levels vary over time due to the effects of seasonal variation in precipitation or other factors not evident at the time of exploration.

## **8.0 CONCLUSIONS AND RECOMMENDATIONS**

Geotechnology has prepared the following conclusions and recommendations based on our understanding of the proposed project, the field and laboratory data presented in this report, engineering analyses, and our experience and judgment.

### **8.1 Site Preparation and Earthwork**

We have assumed less than 2 feet of elevation change will be required to bring the site to grade. The following paragraphs outline site grading recommendations for the site.

Site Preparation. In general, cut areas and areas to receive new fill should be stripped of topsoil, vegetation and other deleterious materials. Topsoil should be placed in landscape areas or disposed of off-site. Vegetation and tree roots should be over-excavated.

The exposed subgrade should be proof-rolled using a tandem axle dump truck loaded to approximately 20,000 pounds per axle (or equivalent proof-rolling equipment). Soft areas that develop should be over-excavated and backfilled with soil fill or crushed rock compacted to the densities specified in subsequent paragraphs.

Cut Areas. Based on the stratigraphy, excavations will terminate in lean clay or silt. After excavation, the top 6 inches of the resulting subgrade should be compacted to a minimum of 98 percent of the maximum dry unit weight as determined by a standard Proctor test (ASTM D 698).

Fill Materials, Placement, and Compaction. Fill material should consist of natural soils classifying as lean clay, silty sand, or clayey sand (CL, SM or SC), have a maximum LL of 45 and a PI of not more than 20. Such materials should be free from organic matter, debris, or other deleterious materials, and have a maximum particle size of 2 inches. In general, the onsite soils meet the requirements for suitable fill materials.



Fill and backfill should be placed in level lifts, up to 8 inches in loose thickness. Each lift should be moisture-conditioned to within the acceptable moisture content range provided in Table 2, and compacted with a sheepsfoot roller or self-propelled compactor to at least the minimum percent compaction indicated in Table 2. Moisture-conditioning can include: aeration and drying of wetter soils; wetting drier soils; and/or mixing wetter and drier soils into a uniform blend.

**Table 2. Percent Compaction and Moisture-Conditioning Requirements for Fill and Backfill.**

Area	Minimum Percent Compaction <sup>a,b</sup>	Acceptable Moisture Content Range <sup>c</sup>
Structural <sup>d</sup>	95%	±2% of OMC
Non-structural	92%	±2% of OMC
Pavement subgrades	98%	±2% of OMC

<sup>a</sup> Referenced to standard Proctor maximum dry unit weight measured by ASTM D698.

<sup>b</sup> For granular soils that do not exhibit a well-defined moisture-density relationship, refer to Table 8 for minimum relative density requirements.

<sup>c</sup> OMC = optimum moisture content measured by ASTM D698.

<sup>d</sup> Structural fill and backfill for foundations are defined as fill and backfill located within the zones of influence of structures. The zone of influence of a structure is defined as the area below the footprint of the structure and 1V:1H outward and downward projections from the bearing elevation of the structure.

Maintaining the moisture content of bearing and subgrade soils within the acceptable range provided in Table 2 is important during and after construction for the proposed structures. The silty and clayey bearing and subgrade soils should not be allowed to become wet or dry during or after construction, and measures should be taken to hinder water from ponding on these soils and to reduce drying of these soils.

Managing site water is important in successful performance of the pavement and foundation systems. Water from surface runoff, downspouts, and subsurface drains should be collected and discharged through a storm water collection system. Positive drainage should be established around the proposed structures to promote drainage of surface water away from the structures and reduce ponding of water adjacent to these structures.

Trees and other, deep-rooted vegetation should not be planted within 1.5 times their projected mature foliage radius from foundations, as their roots extract moisture from plastic and low-plastic soils alike, causing them to shrink, which can potentially result in foundation settlement. Shrubs and flowerbeds should be located a minimum of 5 feet away from the perimeter of foundations.

We recommend that a grade be maintained at the ground surface to reduce ponding of surface water. Asphalt, concrete, or fill should not be placed over frozen or saturated soils, and frozen or saturated soils should not be used as compacted fill or backfill.

Upon completion of earthwork, disturbed areas should be stabilized. It is also recommended riprap and/or armoring be used at the outlets of storm sewers and headwalls to reduce flow velocities and protect against erosion.



## 8.2 Seismic Site Classification and Seismic Design Parameters

A site-specific study was performed to develop a design response spectrum for the proposed building addition. The process consisted of the Refraction Microtremor (ReMi) technique, utilized to estimate the shear wave velocity profile for the site. The vertical variations of mechanical properties of the soil are estimated from spectral variation of phase velocities through the inversion of dispersion curves.

A probabilistic hazard analysis was performed in accordance with the 2012 International Building Code (IBC) requirements, which are based on a seismic event that has a probability of exceedance of 2% in 50 years. Based on the study, the site is a Site Class D. The recommended site-specific design accelerations based on the results of the study, field and laboratory testing, our experience in the vicinity, and our interpretation of the 2012 IBC are presented in Table 3. Results of the analysis were then used to perform a liquefaction analysis for the site. The site-specific seismic study is included in Appendix E.

**Table 3. Site Class and Seismic Parameters (2% Probability of Exceedance in 50 Years).**

Category/ Parameter	Designation/ Value	Reference
S <sub>S</sub>	0.855g*	Latitude 35.92021°N/Longitude 89.79835°W
S <sub>1</sub>	0.302g*	
Seismic Site Class	D	Site Specific Study in Appendix E
F <sub>a</sub>	1.158	2012 IBC Table 1613.3.3(1)
F <sub>v</sub>	1.795	2012 IBC Table 1613.3.3(2)
F <sub>PGA</sub>	1.016	ASCE 7-10 Table 11.8-1
S <sub>MS</sub>	0.990	2012 IBC Equation 16-37
S <sub>M1</sub>	0.543	2012 IBC Equation 16-38
S <sub>DS</sub>	0.676	Site Specific Study in Appendix E
S <sub>D1</sub>	0.400	Site Specific Study in Appendix E
PGA	0.410	Site Specific Study in Appendix E
PGA <sub>M</sub>	0.492	ASCE 7-10 Equation 11.8-1

\* S<sub>S</sub> and S<sub>1</sub> were computed using the web-based U.S. Seismic Design Maps (<http://earthquake.usgs.gov/designmaps/us/application.php>) using the indicated latitude and longitude coordinates of the project site.

## 8.3 Liquefaction and Dynamic Settlement

Liquefaction and Dynamic Settlement Analysis. A study was performed to evaluate the liquefaction and dynamic settlement potential at the site. Both field and laboratory data were used to perform the analysis. The field measurements consisted of the SPT N-values. The laboratory data included USCS classification and soil unit weight. An earthquake magnitude (M<sub>w</sub>) of 7.7 with a probability of exceedance of 2% in 50 years was considered. A peak ground acceleration of 0.410g was utilized as obtained from the site-specific seismic study. For this analysis, groundwater was assumed to be at a depth of 30 feet.

Subsurface conditions (as characterized by field and laboratory data) and earthquake characteristics were used to estimate the safety factors against liquefaction in each soil layer, as



well as the associated dynamic settlement during the design seismic event. Based on the analysis, there is low liquefaction potential at the site.

#### **8.4 Shallow Foundations**

Structural loading information was not provided; based on our experience in similar projects, we have assumed maximum column and wall loads of 75 kips and 4 kips per lineal foot, respectively. If column and wall loads exceed 75 kips and 4 kips per lineal foot, respectively, Geotechnology should be contacted to revise recommendations.

Settlement of Shallow Foundations. Shallow foundations may be proportioned used a maximum net allowable bearing capacity of 2,800 and 2,300 pounds per square foot (psf) for spread and strip footings, respectively. Settlement analyses were performed for the proposed building addition using the soil profile encountered in the borings. The characteristics of the subsurface soils were interpreted using the results of the field and laboratory test. Total and differential settlement due to structural loading of footings is not expected to exceed 1-inch and  $\frac{3}{4}$ -inch, respectively for a maximum column load of 75 kips. These values are contingent on footing excavations being observed by a representative of Geotechnology.

The addition should be designed structurally so that new loads are not transferred to the adjacent foundations. During construction, the adjacent foundations must not be undermined. The adjacent foundations should be protected by means of shoring or some other suitable method prior to excavation for soil improvement operations, if required.

Construction Considerations. Footing excavations should be made with a smooth-edged backhoe bucket, and foot traffic in the bottom of the excavation should be minimized. Footing excavations should be extended through zones of soft soil, if encountered; the over-excavations can be backfilled with compacted fill, lean concrete, or flowable fill.

For exterior footings, we recommend the footings bear a minimum of 18 inches below finished grade. An additional 6 inches of embedment is recommended if the erosion of the cover material is not controlled. Drainage should be maintained away from the foundations throughout construction and throughout the life of the structure. Water should never be allowed to pond against the footings.

#### **8.5 Floor Slabs**

The slab-on-grade floors should be supported on stable subgrade or compacted fill. The subgrade should be prepared as recommended in the Site Preparation and Earthwork section. The floor slab should be underlain by a minimum 4-inch-thick layer of granular material to serve as a capillary break and a base of support. The granular material layer should be compacted per the requirements of Table 2. The top 8 inches of clayey floor slab subgrade should be compacted and moisture-conditioned per the requirements presented in Table 2 prior to placing the granular layer.



Care should be taken during slab-on-grade construction to not allow the subgrade to become desiccated or saturated. Additionally, consideration should be given to the timing of construction relative to the time of year and weather. If slab construction is performed during relatively cold and wet weather, lime- or cement-treatment of the subgrade could be beneficial to maintain progress during construction. Otherwise, the subgrade could be weakened by softening from saturation by rain and/or snow, leading to delays in reworking the subgrade to prepare it back to its pre-softened condition.

It is recommended control joints be provided within the concrete slab-on-grade floors. These joints should be sealed to mitigate surface water infiltration until the building is enclosed. We recommend the floor slab be structurally separated from walls, columns, footings, and penetrations to allow independent movement of the floor. Alternatively, floor slabs that are not structurally independent should be designed to allow for differential movements that normally occur between the floor slabs, columns, and foundation walls.

A 6- to 15-mil plastic sheet should be placed below the floor to reduce the potential for moisture to permeate the slab and the potential for mold growth within the building. Some designers prefer not to place a vapor barrier directly beneath the concrete floor because it could affect the curing of the concrete, resulting in “curling” of the slab. This concern can be addressed by embedding the vapor barrier in or below the crushed rock layer below the slab.

## **8.6 Pavements**

Pavements are to be placed on stable in-situ soil or compacted fill. The pavement subgrade should be proof-rolled and prepared as recommended in the Site Preparation and Earthwork section of this report. Once the subgrade is prepared, it should be promptly paved to protect it from the weather, as the naturally occurring soils of the area are susceptible to changes in moisture content.

The flexible and rigid pavement recommendations provided herein are based on the following assumed input parameters for the 1993 AASHTO pavement design method in Table 4 and Table 6, respectively. Based on the results of the laboratory testing and correlations with the soil types encountered during this exploration, a subgrade California Bearing Ratio (CBR) value of 3 was assumed.





**Table 4. Assumed AASHTO Flexible Pavement Design Parameters.**

Parameter	Light Duty Pavement	Heavy Duty Pavement
Reliability	90%	90%
Standard Deviation	0.49	0.49
CBR	3.0	3.0
Soil Resilient Modulus	4,500 psi	4,500 psi
Estimated Equivalent Single-Axle Loads (ESAL) over the Design Life of the Facility:	10,500	137,900
Drainage Coefficient	1.0	1.0
Initial Serviceability	4.2	4.2
Terminal Serviceability	2.0	2.0
Structural Number	2.00	3.00

To arrive at the layer thicknesses presented herein, a drainage coefficient of 1.0 was assumed. Recommendations for structural numbers of 2 and 3 have been provided for light- and heavy-duty sections, respectively; the required structural number will be dependent on the number of equivalent single-axle loads (ESALs) estimated for the design life of the facility. Four alternative pavement sections for the structural numbers have been provided for consideration and cost evaluation.



**Table 5. Flexible Pavement Thickness Recommendations.**

Layer Type	TDOT Pavement Coefficients*	Light Duty Pavement				Heavy Duty Pavement			
		Layer Thicknesses (inches)				Layer Thicknesses (inches)			
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 1	Alt. 2	Alt. 3	Alt. 4
ACHM** Surface Course	0.44	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACHM Binder Course	0.44	--	--	--	--	2.5	2.5	2.5	2.5
ACHM Base Course	0.34	3.5	--	--	--	3.0	--	--	--
Cement Treated Base (CTB)	0.20	--	6.0	--	--	--	5.5	--	--
Crushed Stone (Class 7)	0.14	--	--	8.0	--	--	--	7.5	--
Soil Cement Base	0.15	--	--	--	7.5	--	--	--	7.0

\* The materials should meet the requirements set forth in the applicable sections of the Roadway Design Planning Development Guidelines, latest edition, published by the Tennessee Department of Transportation (TDOT).

\*\* ACHM = Asphalt Concrete Hot Mix

The rigid pavement recommendations provided herein are based on the following assumed input parameters for the 1993 AASHTO pavement design method in Table 6.

**Table 6. Assumed AASHTO Rigid Pavement Design Parameters.**

Parameter	Light Duty Pavement	Heavy Duty Pavement
Reliability	90%	90%
Standard Deviation	0.39	0.39
Composite Modules of Subgrade Reaction (Accounting for Loss of Support)	50 pci	50 pci
Estimated Equivalent Single Axle Loads (ESAL) over the Design Life of the Facility	100,000	650,000
Initial Serviceability	4.5	4.5
Terminal Serviceability	2.0	2.0
Concrete 28-Day Strength	4,000 psi	4,000 psi
Concrete Modulus of Elasticity	3,600,000 psi	3,600,000 psi
Concrete Modulus of Rupture	600 psi	600 psi
Load Transfer Coefficient	4.0	4.0
Subbase Minimum Elastic Modulus	50,000 psi	50,000 psi



Three alternatives for light-duty and heavy-duty rigid pavement are provided in Table 7 for cost evaluation.

**Table 7. Rigid Pavement Thickness Recommendations.**

Layer Type	Light Duty Pavement			Heavy Duty Pavement		
	Layer Thicknesses (inches)			Layer Thicknesses (inches)		
	Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3
Portland Cement Concrete	6.0	6.0	6.0	8.0	8.0	8.0
Cement Treated Base	4.0	--	--	4.0	--	--
Soil Cement Base	--	7.0	--	--	7.0	--
Crushed Stone	--	--	7.0	--	--	7.0

### 8.7 Utility Construction

Settlement of trench backfill can result in unsightly depressions and localized pavement failures. The magnitude of settlement can be reduced by mechanically compacting the trench backfill. Select granular backfill can be used for pipe bedding and minimum cover for utilities. The remainder of the utility trenches should be backfilled with flowable fill or compacted clayey soils up to design subgrade elevation to reduce the potential for water collecting in these trenches and being absorbed by the surrounding clays, causing heave of foundations, slabs, pavement, or sidewalks.

Granular bedding and backfill that exhibits a well-defined moisture-density relationship should be compacted and moisture-conditioned per the requirements presented in Table 2; otherwise, the granular material should be compacted to at least the minimum relative densities indicated in Table 8.



**Table 8. Relative Density Compaction Requirements for Granular Fill and Backfill.**

Area	Minimum Relative Density <sup>a,b</sup>
Structural <sup>c</sup>	70%
Non-structural	70%
Pavement base course	75%

<sup>a</sup> Relative density evaluated from the maximum and minimum index densities measured by ASTM D4253 and D4254, respectively.

<sup>b</sup> For granular soils that exhibit a well-defined moisture-density relationship, refer to Table 2 for minimum percent compaction and moisture-conditioning requirements.

<sup>c</sup> Structural fill and backfill for foundations are defined as fill and backfill located within the zones of influence of structures. The zone of influence of a structure is defined as the area below the footprint of the structure and 1V:1H outward and downward projections from the bearing elevation of the structure.

Utility trench backfill should be placed in 6- to 8-inch thick lifts with each lift compacted to at least the specified degree of compaction. Thinner lifts should be used for lighter compaction equipment. The backfill should not be flushed with water in an attempt to obtain compaction.

For utilities within the perimeters of the proposed building, one of the following options can be implemented to further reduce the potential for water collecting in the utility trenches:

1. Use flowable fill in place of granular bedding and pipe zone backfill around utility pipes. Provisions should be implemented during construction to keep the pipes from floating in the flowable fill until the flowable fill sets.
2. The bottom of the utility excavation should generally be sloped to drain to a collection pipe (underdrain) in the bottom of the utility excavation at its downstream end. The collection pipe should then connect to an outlet, such as the proposed storm sewer system.
3. The granular bedding and pipe zone backfill should be capped with at least 1 foot of compacted clay backfill prior to the granular bedding and backfill collecting water. Additionally, concrete dams or anti-seepage collars should be provided where the utility crosses beneath the exterior footings of the proposed building. These dams or collars should extend at least 6 inches beyond the sides and bottoms of the utility trenches into the in-situ soils to stop water from migrating underneath the building. If groundwater seepage is observed in the utility excavations, this option should not be implemented, but rather one of the other two options.

Prior to placing the bedding and utilities within the utility trench, soft, saturated, and compressible material should be removed from the bottom of the trench to expose stiff soils or bedrock.

## 9.0 RECOMMENDED ADDITIONAL SERVICES

The conclusions and recommendations given in this report are based on: Geotechnology's understanding of the proposed design and construction, as outlined in this report; site observations; interpretation of the exploration data; and our experience. Since the intent of the



design recommendations is best understood by Geotechnology, we recommend Geotechnology be included in the final design and construction process, and be retained to review the project plans and specifications to confirm the recommendations given in this report have been correctly implemented. We recommend Geotechnology be retained to participate in pre-bid and preconstruction conferences to reduce the risk of misinterpretation of the conclusions and recommendations in this report relative to the proposed construction of the subject project.

Since actual subsurface conditions between boring locations could vary from those encountered in the borings, our design recommendations are subject to adjustment in the field based on the subsurface conditions encountered during construction. Therefore, we recommend Geotechnology be retained to provide construction observation services as a continuation of the design process to confirm the recommendations in this report and to revise them accordingly to accommodate differing subsurface conditions. Construction observation is intended to enhance compliance with project plans and specifications. It is not insurance, nor does it constitute a warranty or guarantee of any type. Regardless of construction observation, contractors, suppliers, and others are solely responsible for the quality of their work and for adhering to plans and specifications.

## **10.0 LIMITATIONS**

This report has been prepared on behalf of, and for the exclusive use of, the client for specific application to the named project as described herein. If this report is provided to other parties, it should be provided in its entirety with all supplementary information. In addition, the client should make it clear the information is provided for factual data only, and not as a warranty of subsurface conditions presented in this report.

Geotechnology has attempted to conduct the services reported herein in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. The recommendations and conclusions contained in this report are professional opinions. The report is not a bidding document and should not be used for that purpose.

Our scope for this phase of the project did not include any environmental assessment or investigation for the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site. Any statements in this report or on the boring logs regarding odors noted or unusual or suspicious items or conditions observed are strictly for the information of our client. Our scope did not include an assessment of the effects of flooding and erosion of creeks or rivers adjacent to or on the project site.

Our scope did not include: any services to investigate or detect the presence of mold or any other biological contaminants (such as spores, fungus, bacteria, viruses, and the by-products of such organisms) on and around the site; or any services, designed or intended, to prevent or lower the risk of the occurrence of an infestation of mold or other biological contaminants.



The analyses, conclusions, and recommendations contained in this report are based on the data obtained from the geotechnical exploration. The field exploration methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Consequently, subsurface conditions could vary gradually, abruptly, and/or nonlinearly between sample locations and/or intervals.

The conclusions or recommendations presented in this report should not be used without Geotechnology's review and assessment if the nature, design, or location of the facilities is changed, if there is a lapse in time between the submittal of this report and the start of work at the site, or if there is a substantial interruption or delay during work at the site. If changes are contemplated or delays occur, Geotechnology must be allowed to review them to assess their impact on the findings, conclusions, and/or design recommendations given in this report. Geotechnology will not be responsible for any claims, damages, or liability associated with any other party's interpretations of the subsurface data or with reuse of the subsurface data or engineering analyses in this report.

The recommendations included in this report have been based in part on assumptions about variations in site stratigraphy that can be evaluated further during earthwork and foundation construction. Geotechnology should be retained to perform construction observation and continue its geotechnical engineering service using observational methods. Geotechnology cannot assume liability for the adequacy of its recommendations when they are used in the field without Geotechnology being retained to observe construction.



## **APPENDIX A – IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGINEERING REPORT**

# Important Information about This

# Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

## Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply this report for any purpose or project except the one originally contemplated.*

## Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

## Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

## Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

## Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

## A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

## A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly



problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

### **Do Not Redraw the Engineer's Logs**

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

### **Give Constructors a Complete Report and Guidance**

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

### **Read Responsibility Provisions Closely**

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

### **Environmental Concerns Are Not Covered**

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

### **Obtain Professional Assistance To Deal with Mold**

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

### **Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance**

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your GBC-Member geotechnical engineer for more information.



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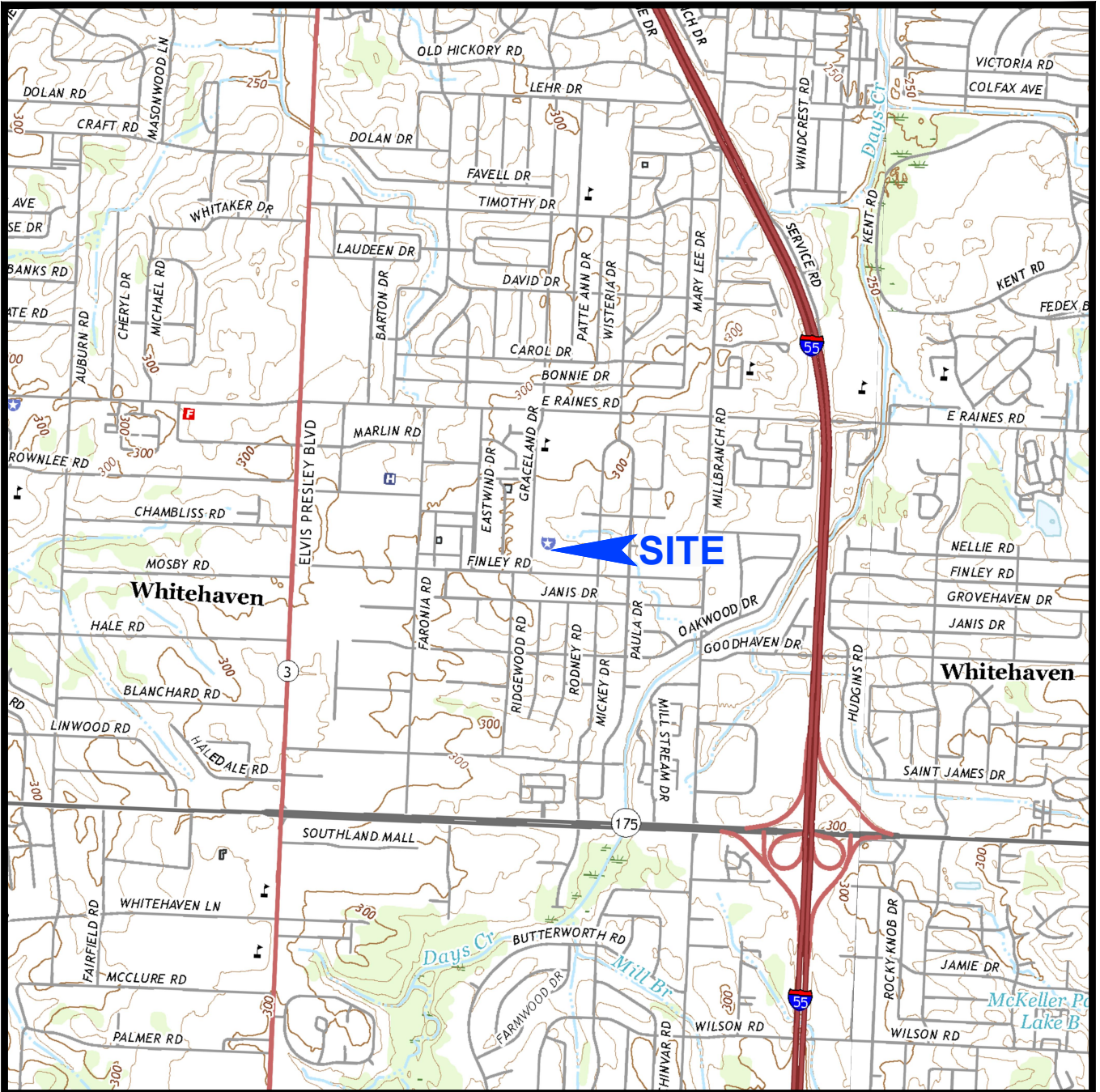
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## **APPENDIX B – FIGURES**

Figure 1 - Site Location and Topography

Figure 2 – Aerial Photograph of Site and Boring Locations



**NOTES**

1. Plan adapted from 7.5 minute U.S.G.S. maps for Southwest Memphis, Tennessee-Arkansas and Southeast Memphis, Tennessee quadrangles, last revised in 2016.

0 2,000 4,000



SCALE IN FEET



Drawn By: WAH	Ck'd By: ABM	App'vd By: JKH
Date: 11-9-18	Date: 11-14-18	Date: 11-14-18

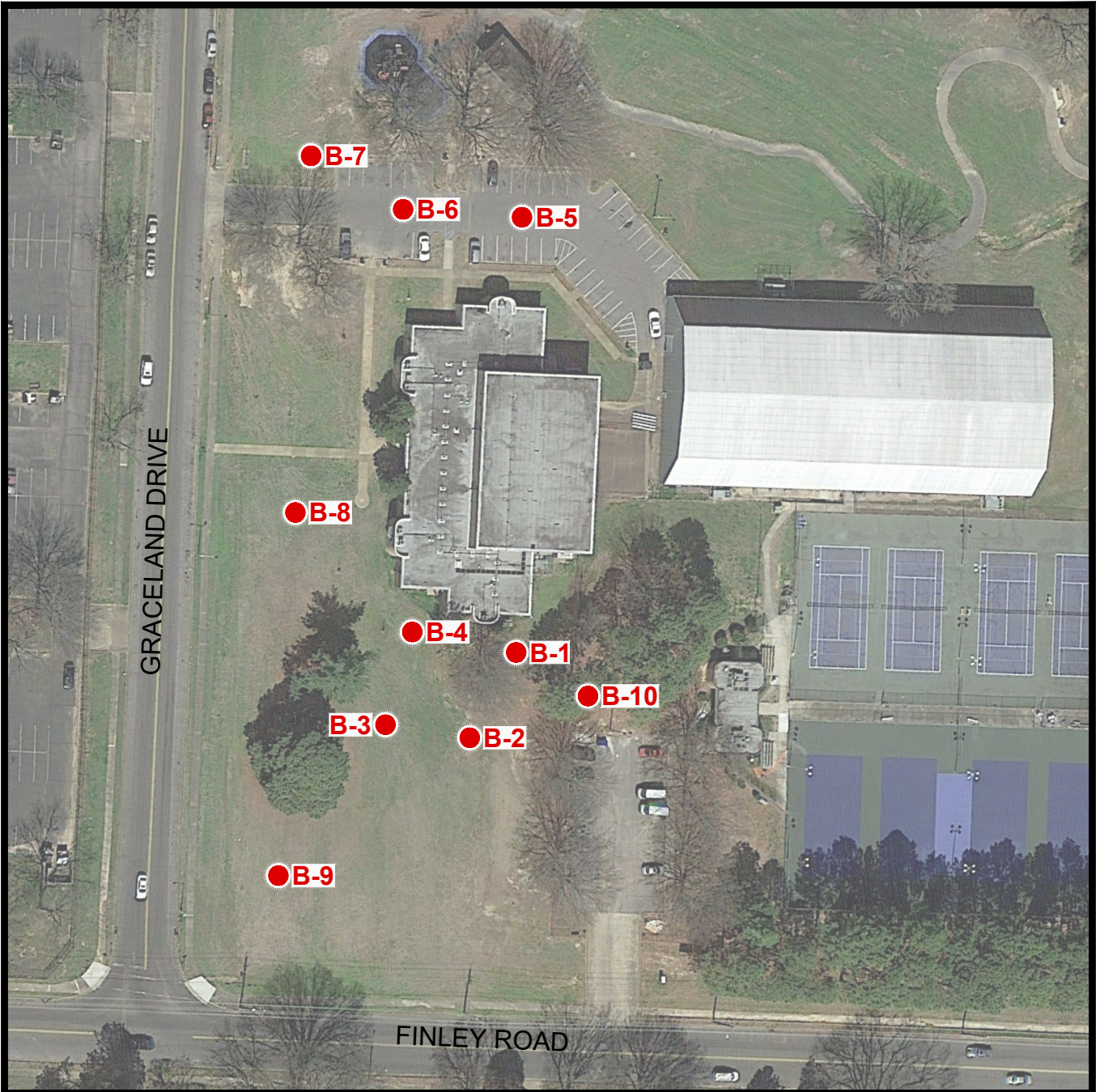


Whitehaven Community  
Center Improvements  
Memphis, Tennessee

**SITE LOCATION  
AND TOPOGRAPHY**

Project Number  
J033136.01

**FIGURE 1**



**NOTES**

1. Plan adapted from a March 14, 2018 aerial photograph courtesy of Google Earth.
2. Borings were located in the field with reference to site features and are shown approximate only.

**LEGEND**

● Boring Location

0 100 200



SCALE IN FEET



Drawn By: WAH	Ck'd By: ABM	App'vd By: JKH
Date: 11-13-18	Date: 11-14-18	Date: 11-14-18



Whitehaven Community  
Center Improvements  
Memphis, Tennessee

**AERIAL PHOTOGRAPH OF SITE  
AND BORING LOCATIONS**

Project Number  
J033136.01

**FIGURE 2**



## **APPENDIX C – BORING INFORMATION**

Boring Logs

Boring Log Terms and Symbols

LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

Surface Elevation: _____ Datum _____		Completion Date: <u>10/22/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf				
DEPTH IN FEET		DESCRIPTION OF MATERIAL					Δ - UU/2	○ - QU/2	□ - SV		
							0.5	1.0	1.5	2.0	2.5
							STANDARD PENETRATION RESISTANCE (ASTM D 1586)				
PLI		WATER CONTENT, %		▲ N-VALUE (BLOWS PER FOOT)							
				10	20	30	40	50	LL		
5	Stiff, brown to brown and gray, LEAN CLAY - CL	4-6-9	SS1	▲	●						
		4-5-5	SS2	▲	●						
10	Stiff, brown SILT - ML	4-5-6	SS3	▲	●						
		3-5-5	SS4	▲	●						
15	Medium stiff to very stiff, brown, LEAN CLAY - CL	2-4-4	SS5	▲	●						
		3-10-11	SS6		●						
25	Stiff to very stiff, brown to tan, red and gray, sandy, LEAN CLAY - CL	2-4-6	SS7	▲	●						
		4-8-10	SS8		●	▲					
30	Boring terminated at 30 feet.										

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
MMH DRILLER SAS LOGGER  
CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM	Checked by: JKH	App'vd. by: DMS
Date: 10/25/18	Date: 11/9/18	Date: 11/9/18



Whitehaven Community Center  
 Additions  
 Memphis, Tennessee

LOG OF BORING: B-1

Project No. J033136.01

LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

Surface Elevation: _____ Datum _____		Completion Date: <u>10/22/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf				
DEPTH IN FEET		DESCRIPTION OF MATERIAL					Δ - UU/2	○ - QU/2	□ - SV		
							0.5	1.0	1.5	2.0	2.5
							STANDARD PENETRATION RESISTANCE (ASTM D 1586)				
PLI		WATER CONTENT, %		▲ N-VALUE (BLOWS PER FOOT)							
				10	20	30	40	50	LL		
Topsoil: 6 inches of grass and roots Very stiff, brown and gray, LEAN CLAY - CL		[Hatched Pattern]		6-8-10	SS1	●	▲				
5				5-9-11	SS2	●	▲				
Very stiff to stiff, brown SILT - ML		[Vertical Lines]		6-10-10	SS3	●	▲				
10				3-4-6	SS4	●	▲				
Stiff to hard, brown, LEAN CLAY - CL		[Hatched Pattern]		4-6-9	SS5	●	▲				
15				5-15-16	SS6	●	▲				
Stiff to very stiff, brown to brown and red, sandy, LEAN CLAY - CL		[Hatched Pattern]		3-5-10	SS7	●	▲				
25				5-8-12	SS8	●	▲				
Boring terminated at 30 feet.											

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
MMH DRILLER SAS LOGGER  
CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM	Checked by: JKH	App'vd. by: DMS
Date: 10/25/18	Date: 11/9/18	Date: 11/9/18



Whitehaven Community Center  
 Additions  
 Memphis, Tennessee

LOG OF BORING: B-2

Project No. J033136.01

Surface Elevation: \_\_\_\_\_

Completion Date: 10/23/18

Datum \_\_\_\_\_

**SHEAR STRENGTH, tsf**

Δ - UU/2      ○ - QU/2      □ - SV  
0.5    1.0    1.5    2.0    2.5

**STANDARD PENETRATION RESISTANCE**

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

**WATER CONTENT, %**

PLI | 10    20    30    40    50 | LL

DEPTH  
IN  
FEET

**DESCRIPTION OF MATERIAL**

GRAPHIC LOG

DRY UNIT WEIGHT (pcf)  
SPT BLOW COUNTS  
CORE RECOVERY/RQD

SAMPLES

Topsoil: 3 inches of grass, roots and brown, lean clay  
Stiff to medium stiff, brown, LEAN CLAY - CL

5

10

15

20

25

30

35

40

45

50

Medium stiff to stiff, red-brown and tan, sandy, LEAN CLAY - CL

Dense, tan and red, CLAYEY SAND - SC  
trace gravel

little gravel

Very dense, tan, CLAYEY GRAVEL, some sand - GC

Very dense to dense, tan SAND with silt and gravel -  
(SP-SM)  
6% passing No. 200 sieve

3-5-8 SS1

3-4-7 SS2

2-5-6 SS3

3-4-5 SS4

1-3-4 SS5

4-6-9 SS6

1-2-3 SS7

3-4-6 SS8

17-19-20 SS9

6-15-18 SS10

17-24-48 SS11

33-50/5" SS12

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING 2002 WL\_J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

**GROUNDWATER DATA**

FREE WATER NOT  
ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM  
WASHBORING FROM 30 FEET  
JAJ DRILLER MMH LOGGER  
CME 55 DRILL RIG  
HAMMER TYPE Auto  
HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM    Checked by: JKH    App'vd. by: DMS  
Date: 10/25/18    Date: 11/9/18    Date: 11/9/18



Whitehaven Community Center  
Additions  
Memphis, Tennessee

LOG OF BORING: B-3

Project No. J033136.01





Surface Elevation: \_\_\_\_\_

Completion Date: 10/22/18

Datum \_\_\_\_\_

**SHEAR STRENGTH, tsf**

Δ - UU/2      ○ - QU/2      □ - SV

0.5    1.0    1.5    2.0    2.5

**STANDARD PENETRATION RESISTANCE**

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

**WATER CONTENT, %**

PLI | 10    20    30    40    50 | LL

DEPTH  
IN FEET

**DESCRIPTION OF MATERIAL**

GRAPHIC LOG

DRY UNIT WEIGHT (pcf)  
SPT BLOW COUNTS  
CORE RECOVERY/RQD

SAMPLES

Topsoil: 6 inches of grass, roots and brown silt  
Very stiff to soft, brown, LEAN CLAY - (CL)  
trace roots



3-4-7	SS1	▲	●	
94	ST2		●	—
2-2-4	SS3	▲	●	
2-1-2	SS4	▲	●	
99	ST5	Δ	●	—
2-2-3	SS6	▲	●	
3-6-11	SS7		▲	●
2-2-4	SS8	▲	●	
3-4-6	SS9	▲	●	

5

10

15

20

25

30

little sand

Stiff, tan and red, sandy, LEAN CLAY - CL

Boring terminated at 30 feet.

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING 2002 WL\_J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
MMH DRILLER SAS LOGGER  
CME 55 DRILL RIG  
HAMMER TYPE Auto  
HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM    Checked by: JKH    App'vd. by: DMS  
Date: 10/25/18    Date: 11/9/18    Date: 11/9/18



**Whitehaven Community Center Additions**  
Memphis, Tennessee

LOG OF BORING: B-4

Project No. J033136.01

LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

Surface Elevation: _____		Completion Date: <u>10/23/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf		
Datum _____		$\Delta$ - UU/2 $\circ$ - QU/2 $\square$ - SV 0.5    1.0    1.5    2.0    2.5							
DEPTH IN FEET		STANDARD PENETRATION RESISTANCE (ASTM D 1586)							
DESCRIPTION OF MATERIAL		WATER CONTENT, %			$\blacktriangle$ N-VALUE (BLOWS PER FOOT) PLI   10    20    30    40    50   LL				
5	Asphalt: 6 inches Stiff to soft, brown, LEAN CLAY - CL	2-4-5	SS1	$\blacktriangle$	$\bullet$				
5		2-3-4	SS2	$\blacktriangle$	$\bullet$				
5		1-2-3	SS3	$\blacktriangle$	$\bullet$				
5		1-2-2	SS4	$\blacktriangle$	$\bullet$				
10	Boring terminated at 10 feet.								

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
JAJ DRILLER MMH LOGGER  
CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM	Checked by: JKH	App'vd. by: DMS
Date: 10/25/18	Date: 11/9/18	Date: 11/9/18



**Whitehaven Community Center  
Additions  
Memphis, Tennessee**

**LOG OF BORING: B- 5**

**Project No. J033136.01**

LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

Surface Elevation: _____ Datum _____		Completion Date: <u>10/23/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf		
DEPTH IN FEET	DESCRIPTION OF MATERIAL	$\Delta$ - UU/2 $\circ$ - QU/2 $\square$ - SV 0.5    1.0    1.5    2.0    2.5							
		STANDARD PENETRATION RESISTANCE (ASTM D 1586)							
		$\blacktriangle$ N-VALUE (BLOWS PER FOOT) WATER CONTENT, % PLI   10    20    30    40    50   LL							
	Asphalt: 6 inches								
	Stiff to soft, brown, LEAN CLAY - CL								
		2-4-5	SS1						
		2-3-4	SS2						
5		1-2-3	SS3						
		1-2-2	SS4						
10	Boring terminated at 10 feet.								

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
JAJ DRILLER MMH LOGGER  
CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM	Checked by: JKH	App'vd. by: DMS
Date: 10/25/18	Date: 11/9/18	Date: 11/9/18



**Whitehaven Community Center Additions**  
**Memphis, Tennessee**

**LOG OF BORING: B-6**

**Project No. J033136.01**



LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

Surface Elevation: _____ Datum _____		Completion Date: <u>10/22/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf		
DEPTH IN FEET	DESCRIPTION OF MATERIAL	$\Delta$ - UU/2 $\circ$ - QU/2 $\square$ - SV 0.5    1.0    1.5    2.0    2.5							
		STANDARD PENETRATION RESISTANCE (ASTM D 1586)							
		$\blacktriangle$ N-VALUE (BLOWS PER FOOT) WATER CONTENT, % PLI   10    20    30    40    50   LL							
	Topsoil: 6 inches of grass, roots and brown silt								
	Very stiff, brown and gray SILT, trace organics - ML								
		4-7-9	SS1						
5	Stiff to medium stiff, brown, LEAN CLAY - CL								
		5-5-6	SS2						
		3-4-5	SS3						
		2-2-3	SS4						
10	Boring terminated at 10 feet.								

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
MMH DRILLER SAS LOGGER  
CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM	Checked by: JKH	App'vd. by: DMS
Date: 10/26/18	Date: 11/9/18	Date: 11/9/18



Whitehaven Community Center  
 Additions  
 Memphis, Tennessee

LOG OF BORING: B- 8

Project No. J033136.01

LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

Surface Elevation: _____ Datum _____		Completion Date: <u>10/22/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf		
DEPTH IN FEET	DESCRIPTION OF MATERIAL	$\Delta$ - UU/2 $\circ$ - QU/2 $\square$ - SV 0.5    1.0    1.5    2.0    2.5							
		STANDARD PENETRATION RESISTANCE (ASTM D 1586)							
		$\blacktriangle$ N-VALUE (BLOWS PER FOOT) WATER CONTENT, % PLI   10    20    30    40    50   LL							
	Topsoil: 6 inches of grass, roots and brown silt								
	Stiff to soft, brown to brown and gray, SILTY CLAY - (CL-ML)								
		2-2-5	SS1						
		1-1-2	SS2						
5									
		3-6-6	SS3						
		3-2-4	SS4						
10	Boring terminated at 10 feet.								

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
MMH DRILLER SAS LOGGER  
CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM	Checked by: JKH	App'vd. by: DMS
Date: 10/26/18	Date: 11/9/18	Date: 11/9/18



Whitehaven Community Center  
 Additions  
 Memphis, Tennessee

LOG OF BORING: B-9

Project No. J033136.01

LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/14/18

Surface Elevation: _____ Datum _____		Completion Date: <u>10/22/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf		
DEPTH IN FEET	DESCRIPTION OF MATERIAL	STANDARD PENETRATION RESISTANCE (ASTM D 1586)							
		WATER CONTENT, %							
		PLI	LL						
	Topsoil: 6 inches of grass, roots and brown silt								
	Very stiff, brown, LEAN CLAY - CL								
		6-14-14	SS1						
	Very stiff, brown SILT - ML								
5		10-12-12	SS2						
		10-9-10	SS3						
	Very stiff, brown, LEAN CLAY - CL								
		6-8-9	SS4						
10	Boring terminated at 10 feet.								

**GROUNDWATER DATA**

FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**

\_\_\_ AUGER 3 3/4" HOLLOW STEM WASHBORING FROM \_\_\_ FEET  
MMH DRILLER SAS LOGGER  
CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: ABM	Checked by: JKH	App'vd. by: DMS
Date: 10/26/18	Date: 11/9/18	Date: 11/9/18



Whitehaven Community Center  
 Additions  
 Memphis, Tennessee

LOG OF BORING: B-10

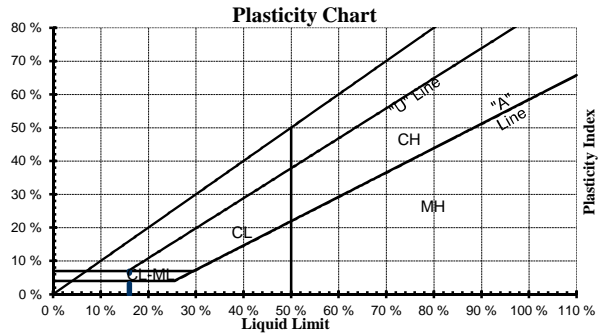
Project No. J033136.01



# BORING LOG: TERMS AND SYMBOLS

## LEGEND

CS	Continuous Sampler
GB	Grab Sample
NQ	NQ Rock Core
PST	Three-Inch Diameter Piston Tube Sample
SS	Split-Spoon Sample (Standard Penetration Test)
ST	Three-Inch Diameter Shelby Tube Sample
*	Sample Not Recovered
PL	Plastic Limit (ASTM D4318)
LL	Liquid Limit (ASTM D4318)
SV	Shear Strength from Field Vane (ASTM D2573)
UU	Shear Strength from Unconsolidated-Undrained Triaxial Compression Test (ASTM D2850)
QU	Shear Strength from Unconfined Compression Test (ASTM D2166)



## SOIL GRAIN SIZE

US STANDARD SIEVE

	12"	3"	3/4"	4	10	40	200		
BOULDERS	COBBLES	GRAVEL		SAND			SILT	CLAY	
		COARSE	FINE	COARSE	MEDIUM	FINE			
		300	76.2	19.1	4.76	2.00	0.42	0.074	0.005
SOIL GRAIN SIZE IN MILLIMETERS									

## UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbol	Description	
Coarse-Grained Soils (More than 50% Larger than No. 200 Sieve Size)	Gravel and Gravelly Soil	Clean Gravels Little or no Fines	GW Well-Graded Gravel, Gravel- Sand Mixture	
		Gravels with Appreciable Fines	GP Poorly-Graded Gravel, Gravel-Sand Mixture	
		Sand and Sandy Soils	Clean Sands Little or no Fines	GM Silty Gravel, Gravel-Sand-Silt Mixture
			Sands with Appreciable Fines	GC Clayey-Gravel, Gravel-Sand-Clay Mixture
	Fine-Grained Soils (More than 50% Smaller than No. 200 Sieve Size)	Silts and Clays	Liquid Limit Less Than 50	SW Well-Graded Sand, Gravelly Sand
				SP Poorly-Graded Sand, Gravelly Sand
				SM Silty Sand, Sand-Silt Mixture
		Silts and Clays	Liquid Limit Greater Than 50	SC Clayey-Sand, Sand-Clay Mixture
			ML Silt, Sandy Silt, Clayey Silt, Slight Plasticity	
			CL Lean Clay, Sandy Clay, Silty Clay, Low to Medium Plasticity	
Highly Organic Soils			OL Organic Silts or Lean Clays, Low Plasticity	
Highly Organic Soils			MH Silt, High Plasticity	
Highly Organic Soils			CH Fat Clay, High Plasticity	
Highly Organic Soils			OH Organic Clay, Medium to High Plasticity	
Highly Organic Soils			PT Peat, Humus, Swamp Soil	

### STRENGTH OF COHESIVE SOILS

### DENSITY OF GRANULAR SOILS

Consistency	Undrained Shear Strength (tsf)	Unconfined Comp. Strength (tsf)	Descriptive Term	Approximate $N_{60}$ -Value Range
Very Soft	less than 0.125	less than 0.25	Very Loose	0 to 4
Soft	0.125 to 0.25	0.25 to 0.5	Loose	5 to 10
Medium Stiff	0.25 to 0.5	0.5 to 1.0	Medium Dense	11 to 30
Stiff	0.5 to 1.0	1.0 to 2.0	Dense	31 to 50
Very Stiff	1.0 to 2.0	2.0 to 3.0	Very Dense	>50
Hard	greater than 2.0	greater than 4.0		

N-Value (Blow Count) is the last two, 6-inch drive increments (i.e. 4/7/9, N = 7 + 9 = 16). Values are shown as a summation on the grid plot and shown in the Unit Dry Weight/SPT column.

### RELATIVE COMPOSITION

### OTHER TERMS

Trace	0 to 10%	Layer - Inclusion greater than 3 inches thick.
Little	10 to 20%	Seam - Inclusion 1/8-inch to 3 inches thick
Some	20 to 35%	Parting - Inclusion less than 1/8-inch thick
And	35 to 50%	Pocket - Inclusion of material that is smaller than sample diameter



Relative composition and Unified Soil Classification System (USCS) designations are based on visual descriptions and are approximate only. If laboratory tests were performed to classify the soil, the USCS designation is shown in parenthesis.



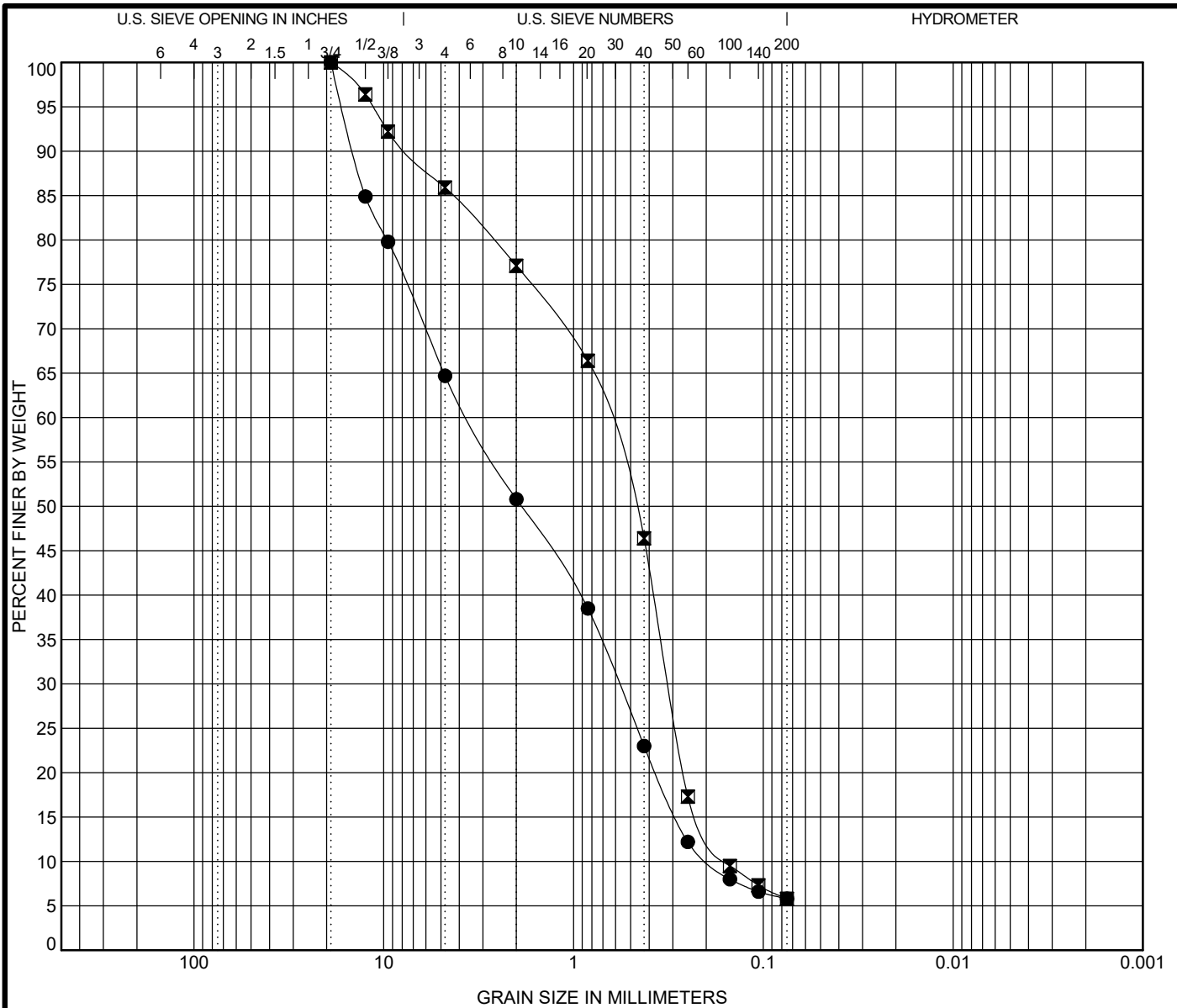
## **APPENDIX D – LABORATORY TEST DATA**

Atterberg Limit

Grain Size Determination

Unconsolidated-Undrained Triaxial Compression





COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

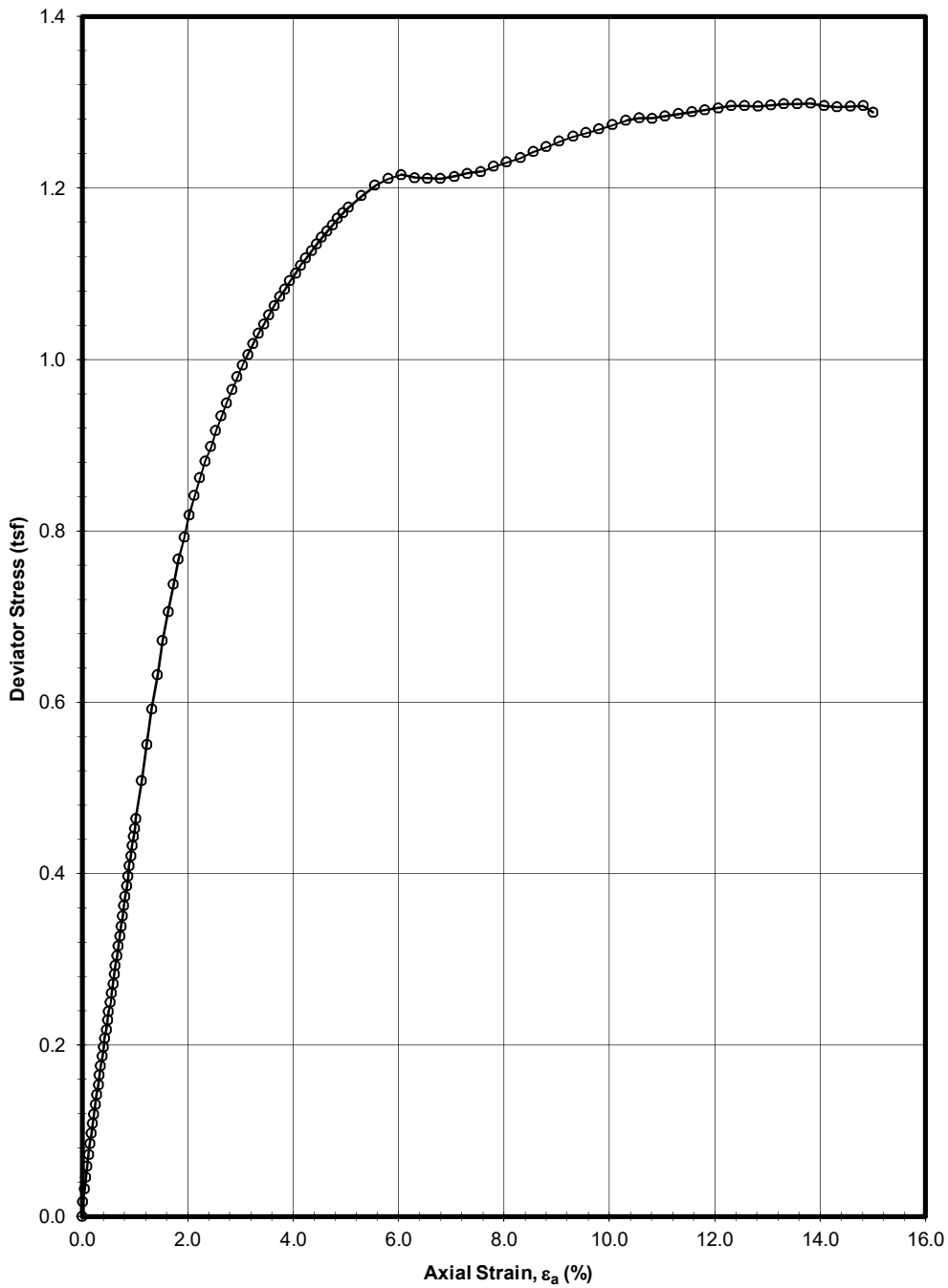
Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● B-3 48.5	POORLY GRADED SAND with SILT and GRAVEL(SP-SM)				0.49	18.53
◻ B-3 78.5	POORLY GRADED SAND with SILT and GRAVEL(SP-SM)				0.95	4.36

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-3 48.5	19	3.545	0.578	0.191	35.3	58.9	5.8	
◻ B-3 78.5	19	0.675	0.315	0.155	14.1	80.1	5.8	

US GRAIN SIZE J033136.01.GPJ US LAB.GDT 11/11/18



**GRAIN SIZE DISTRIBUTION**  
 Whitehaven Community Center  
 Additions  
 Memphis, Tennessee  
 J033136.01



**UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST**

ASTM D 2850

Project No.: J033136.01

Boring: B-4

Sample: ST-2 - Depth: 10 ft.



## **APPENDIX E – SITE SPECIFIC SEISMIC STUDY**

**Site-Specific Seismic Study  
Whitehaven Community Center  
Additions  
Memphis, Tennessee**

By

Shahram Pezeshk, Ph.D., P.E.

Email: [s.pezeshk@aol.com](mailto:s.pezeshk@aol.com)

901-606-6934

November 10, 2018

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# Site-Specific Seismic Study

## Whitehaven Community Center Additions

### Memphis, Tennessee

#### 1.0. EXECUTIVE SUMMARY

The executive summary provides an overview of my understanding of the project and recommendations. Information and recommendations presented in the executive summary should not be used without reviewing the entire report.

Study site location: Whitehaven Community Center Additions, Memphis, TN ( $35^{\circ} 1'48.72''\text{N}$  and  $90^{\circ} 0'52.31''\text{W}$ ).

- Based on the recommendations of the *ASCE 7-10*,  $PGA_M$  (zero-period),  $S_{DS}$  (short period) and  $S_{D1}$  (long period) are provided in Table 2.
- Site-specific recommendations following the *ASCE 7-10* provisions for MCER and DBE are provided in Table 3 and Table 4.

## 2.0. SCOPE OF WORK

The design in the ASCE 7-10 allows two procedures for determining design ground motions:

1. *General Procedure*. In this method, the response spectrum is determined using the following steps: (1) develop the rock spectrum using seismic design maps for values of Peak Ground Acceleration (PGA), and spectral acceleration at periods of 0.2 and 1.0 seconds; (2) determine the Site Class using shear wave velocity ( $V_s$ ) measurements from the upper 100 feet of the soil profile; and (3) adjust the rock spectrum for site class to develop the general response spectrum.
2. *Site-Specific Procedure*. In this method, the response spectrum is determined using a combination of probabilistic seismic hazard and site response analyses. The site-specific response spectrum may not be less than 80% of the general response spectrum.

Briefly, the scope of our services for the site-specific investigation included the following steps:

1. Perform probabilistic seismic hazard analysis (PSHA) to estimate ground motions in the rock underlying the site;
2. Determine Uniform Hazard Response Spectrum (UHRS) at the rock level;
3. Determine probabilistic consistent magnitude and distances from deaggregation;
4. Select ground motions consistent with magnitude and distances obtained in step 3;
5. Perform spectral matching to match the selected ground motions to the UHRS of step 2;
6. Perform one-dimensional equivalent linear site-specific ground response analysis using the site-specific earthquake time histories by using the computer program SHAKE91 (Idriss and Sun, 1992) and considering the uncertainties associated with the shear-wave velocity and layer thicknesses for the soil profile; and
7. Develop site-specific response spectra for the existing subsurface conditions using the procedure outlined in ASCE 7-10, which include:  $MCE_R$  and DBE seismic hazard related to 2% percent probability of exceedance in 50 years, and 5 percent damping for a single degree of freedom (SDOF) structure.

### 3.0. SUBSURFACE CONDITIONS

This study is based on the available information of the soil stratigraphy provided by Boring B-3 and shear-wave velocity obtained following the procedure discussed in Section 4.0 below (Also, please see Appendix A for a copy of the boring log).

### 4.0. REFRACTION MICROTREMOR (ReMi)

The Refraction Microtremor (ReMi) technique used in this research is based on the method described by Louie (2001). The ReMi method is designed to analyze ambient seismic waves recorded by a linear array of common seismic refraction recording equipment.

The study presented in Louie (2001) used an array of up to 48 8-Hz geophones spaced from 8 to 20 meters apart. The total depth measured is a function of the density of geophones, spread length, and frequency content of recorded noise events, and number and frequency of measurements. The geophones are pushed into the ground on bare soil, or into a hole in asphalt, and can be up to 20° off vertical and still produce accurate results. The ReMi procedure uses ambient noise to produce average one-dimensional shear wave profiles down to depths in excess of 100 feet. In this study, we used 24 geophones spaced at 10 feet for a total distance of 230 ft.

The ReMi method analyzes the traces from the individual geophones and is based on the slant-stack ( $p$ - $\tau$ ) transform presented by Thorson and Claerbout (1985). This transformation takes multiple seismic records of amplitude relative to distance  $x$  and time  $t$  and converts them to amplitudes relative to ray parameter (inverse of velocity, or slowness)  $p$  and intercept time  $\tau$ . In other words, it is a line integral across a record in distance and time. Each trace is then converted from the time domain into the frequency domain by the Fourier transform. Then the energy is summed from the forward and reverse directions into one slowness axis that represents the absolute value of  $p$ . This completes the transformation from distance-time ( $x$ - $t$ ) into slowness-frequency ( $p$ - $f$ ) space. To combine several records from the same site, the individual  $p$ - $f$  values are added point by point to produce a summed power. To plot the results from this analysis, a spectral power ratio is computed to account for the fact that the average power of one frequency might be orders of magnitude different from another frequency. Therefore, the spectral ratio of the summed power is taken at each  $p$ - $f$  combination against the average power from all values of  $p$  at that frequency ( $f$ ). This spectral ratio for each  $p$ - $f$  combination is plotted on a color gradient scale that enables slopes or peaks to be determined from the plot, shown in Figure 1. Once a  $p$ - $f$  value is picked, the slowness is inverted back into velocity and becomes a point on a dispersion curve.

Wave fronts that impact the linear array of geophones at an oblique angle will have a higher apparent velocity than Rayleigh waves that are traveling in line with the sensor array. Therefore, simply picking the point for every frequency that has the highest spectral ratio will lead to a dispersion curve with a high apparent velocity. The lower edge of the lowest velocity peak ratio must be selected for the Rayleigh waves traveling in line with the sensors.

In summary, the ReMi method uses the recorded background noise, or microtremors, to separate Rayleigh waves from other seismic arrivals. This allows for the determination of the true phase

velocity as opposed to the apparent velocity. The background noise is created by numerous sources and is prevalent in urban areas. However, in suburban or rural areas, the waves in the ground might not be strong enough to produce high resolution. Therefore, locating the array close to nearby roads or railroad tracks in rural areas may be necessary.

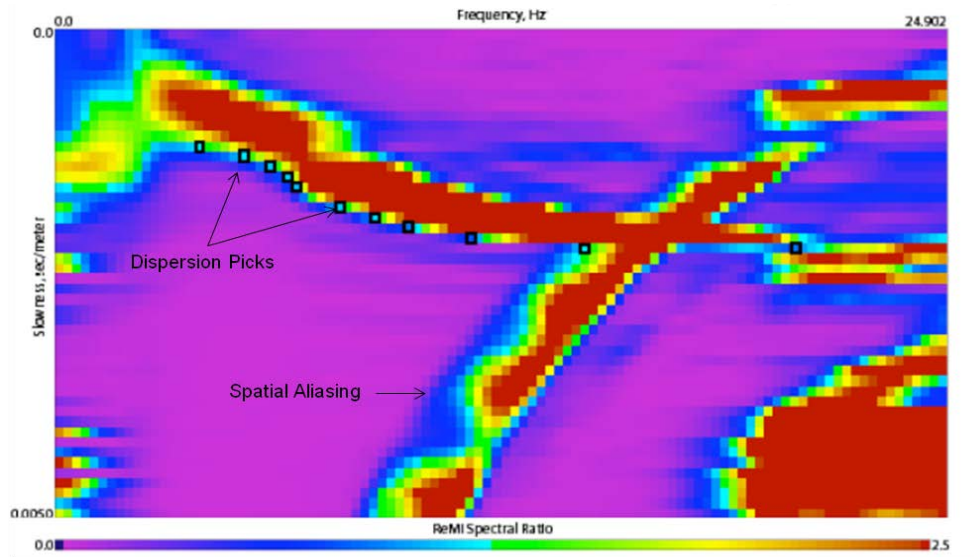


Figure 1. Plot of  $p$ - $f$  spectrum.

For this study, a total of 24 4.5Hz vertical geophones in a linear array were used. The spread of geophones was spaced at 10 ft for a total array length of 230 feet. Data were recorded using a sampling rate of 500 data points per second for 32 seconds total durations. Sixteen individual recordings were made. Figure 2 shows a plot of the  $P$ - $f$  spectrum. Figure 3 shows picked values of the dispersion curve as well as the dispersion curve of the shear-wave velocity profile obtained from the inversion. The picture provided in the Appendix B shows the location where the ReMi survey was performed. Table 1 presents the tabulated values of the shear-wave velocities obtained from the inversion. Figure 4 shows the shear-wave velocity profile.

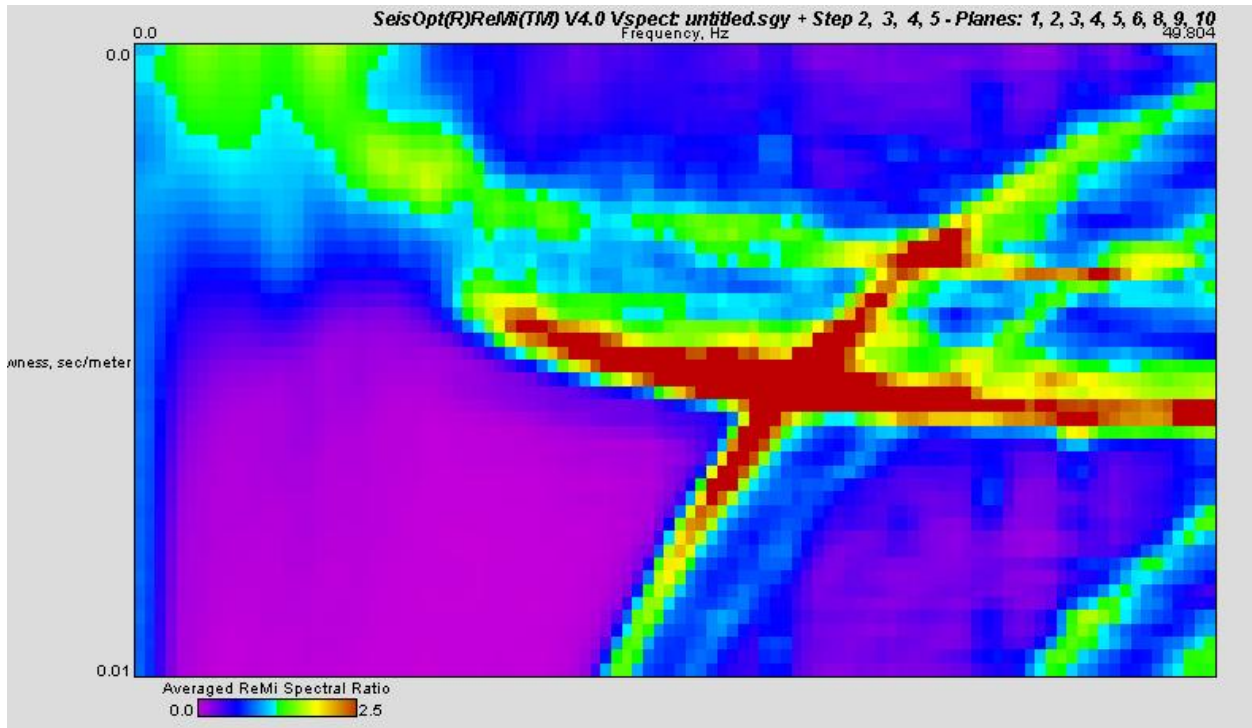


Figure 2. Plot of p-f spectrum for the study site.

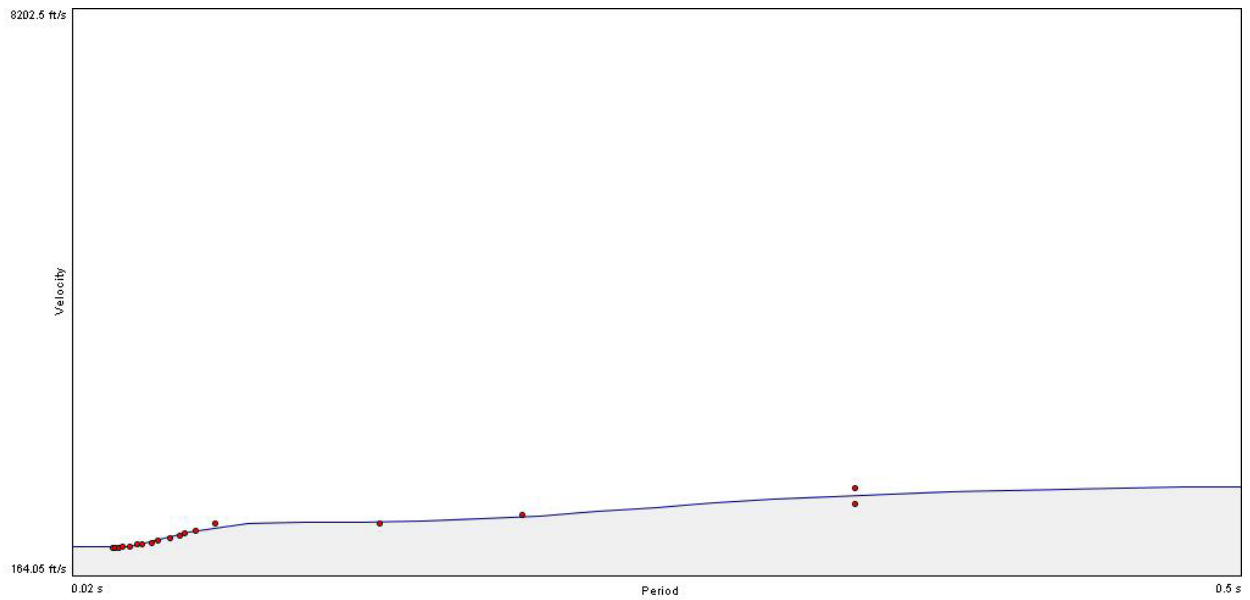
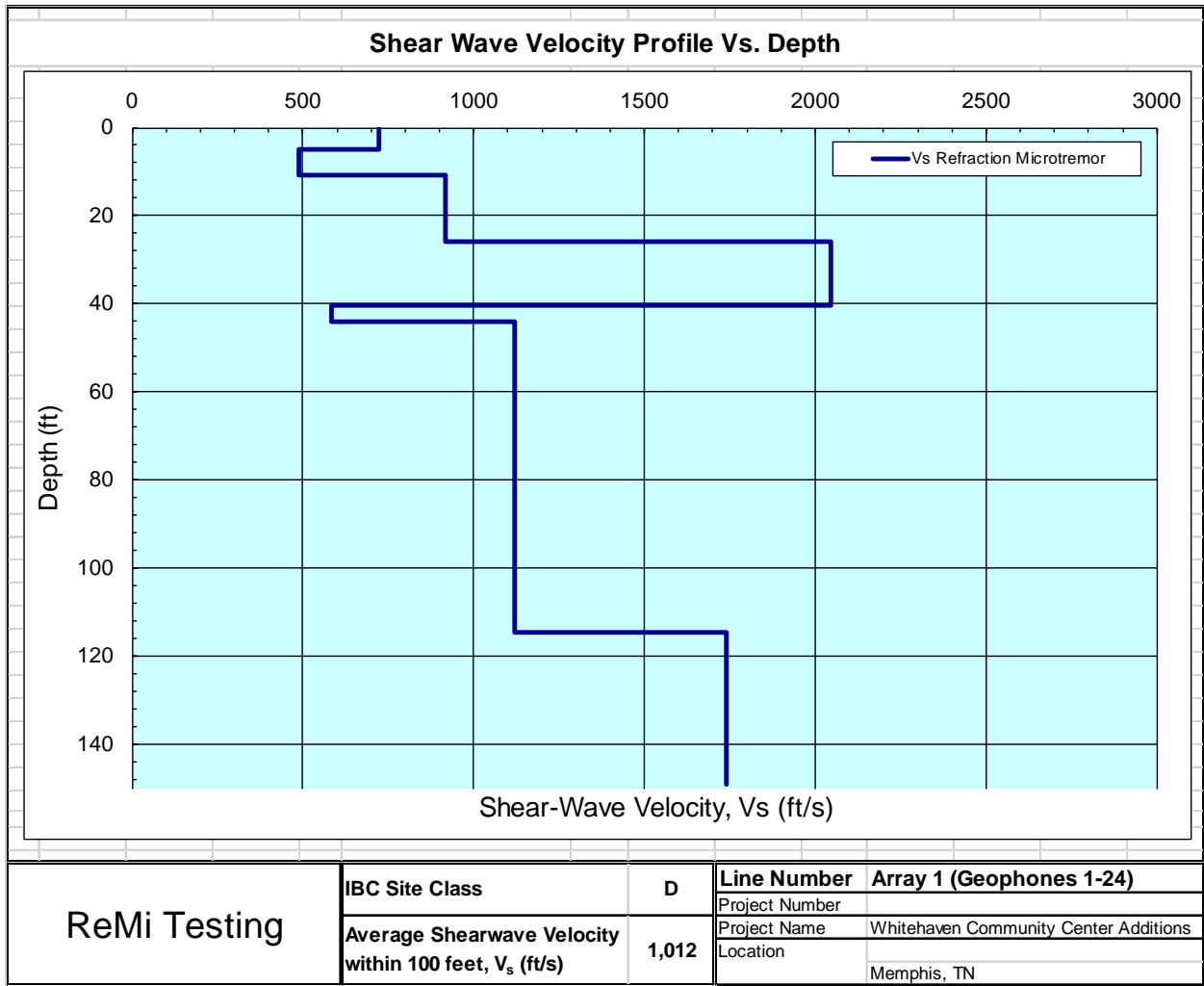


Figure 3. Dispersion curves and final inverted soil profile.



<b>ReMi Testing</b>	<b>IBC Site Class</b>	<b>D</b>	<b>Line Number</b>	<b>Array 1 (Geophones 1-24)</b>
	<b>Average Shearwave Velocity within 100 feet, <math>V_s</math> (ft/s)</b>	<b>1,012</b>	Project Number	
			Project Name	Whitehaven Community Center Additions
			Location	Memphis, TN

Figure 4. Shear-Wave Velocity Profile.

Table 1. Shear-Wave Velocities Measured at the Boring B-3 Location.

Depth (ft)	Velocity (ft/sec)
5	722
11	489
26	916
40	2046
44	582
115	1122
149	1740

## 5.0 GENERAL INFORMATION

For structural design purposes, the loads imparted to the structure are derived through elastic dynamic structural analysis procedures such as the equivalent lateral force or modal analysis, or, if a more advanced dynamic structural analysis is required, by using a procedure such as an inelastic response history analysis. The equivalent lateral force and modal analysis procedures use the response spectrum derived from either code based or site-specific methods, to evaluate the base shear force. The inelastic response history method uses time histories; either modified recorded time histories or synthetic time histories, to evaluate the seismic load demand. For this project, we have been requested to perform a site-specific seismic study to produce the ground surface response spectrum and a set of time series based on the seismic parameters used in the ASCE 2010 which include: seismic hazard related to 2% percent probability of exceedance in 50 years (2,500-year return period) and 5 percent damping for SDOF structure.

## 6.0 ASCE 7-10 SITE AMPLIFICATIONS

The average shear wave velocity for this site ( $\bar{V}_s$ ), according to the recommendations of the IBC 2012, was calculated to be 1012 ft/sec. As the IBC 2012 bases the site classification on the average properties in the top 100 feet, the site class for the study site was identified to be a site class “D” according to the  $\bar{V}_s$ -value (2010 ASCE 7 Table 20.3-1, Site Class Definitions). According to Tables 1613.3.3(1), 1613.3.3(2), Table 11.8-1, and the mapped spectral acceleration, the site coefficients  $F_{pga}$ ,  $F_a$ , and  $F_v$  for Site Class “D” are summarized Table 2. Furthermore, risk coefficients are  $C_{RS}=0.810$  and  $C_{RI}=0.811$ .

## **6.1. Dynamic Soil Properties**

For seismic ground response analysis, low strain soil shear modulus and damping are the required dynamic soil properties. Brief discussion on these properties is given below.

### **6.1.1. Low Strain Soil Shear Modulus**

A key parameter necessary to evaluate dynamic response of soils is the dynamic shear modulus,  $G_s$  or shear wave velocity, which is also related to dynamic shear modulus. Values of shear wave velocity or shear modulus can be determined either by measurement in the laboratory on undisturbed soil samples, or in the field by performing field seismic tests. Shear modulus is not a constant property of soil but decreases nonlinearly with increasing strain. For initial design purposes, shear modulus measured at small shear strain amplitudes (less than  $10^{-4}$  percent), referred to as  $G_{max}$ , is a desired design parameter.

Laboratory measurement of shear wave velocity or low strain soil shear modulus was beyond the scope of our services. Various correlations and typical values are available in the literature to estimate the approximate value of shear wave velocity and  $G_{max}$ .

### **6.1.2. Damping**

The inelastic behavior of soil (discussed later) also gives rise to energy absorption characteristics of soil known as material damping. Damping is generally expressed as a percentage of the critical damping. Low strain damping of approximately 5 to 10 percent of the critical damping is commonly used for soils. Damping of 5 percent of critical was used for the analysis. However, this damping was modified in the analysis based on the strain levels in the soil, as explained in subsequent sections of this report.

### **6.1.3. Effect of Strain on Dynamic Soil Properties**

It is well understood that the stress-strain relationship of soils is nonlinear. This means that the soil shear modulus is not a constant value but degrades nonlinearly with increasing strain in the soil. Dynamic analyses considering true nonlinear behavior of soil are complicated and are an active and current research area. Accordingly, an equivalent linear analysis is typically used in practice. Equivalent linear analyses consist of performing a series of linear analyses, in an iterative process, using for each analysis, soil properties consistent with the strains resulting from the previous one. Equivalent linear site response analysis is used in the present study. Many studies have been performed in the past to establish a relationship between modulus degradation with strain. In this study, a combination of the  $G/G_{max}$  and damping vs. shear strain of Chang *et al.* (1989), EPRI (1993), and Pezeshk *et al.* (1996, 1998), and Wehling *et al.* (2003) were used.



## 7.0. CODE BASED DESIGN APPROACH

### 7.1. ASCE 7-10 Mapped Spectral Values for 2% Prob. of Exceedance in 50 Years

Ground response analysis was performed to obtain representative response spectra at the ground surface based on the time histories at B-C boundary propagated through the site soils. According to the United States Geological Survey (USGS) Hazard Maps, the project location has a mapped 0.2-second spectral response acceleration ( $S_s$ ) of 0.854g and a mapped 1.0 spectral response acceleration ( $S_1$ ) of approximately 0.302g. The maximum considered earthquake spectral response acceleration for short period,  $S_{MS}$ , and at 1-second period,  $S_{M1}$ , adjusted for site class effect are determined to be:

$$S_{MS} = F_a S_s = 1.158 \times 0.854 = 0.989g \quad (\text{Equation 11.4-1})$$

$$S_{M1} = F_v S_1 = 1.795 \times 0.302 = 0.543g \quad (\text{Equation 11.4-2})$$

Five percent damped design spectral response acceleration at short period,  $S_{DS}$ , and at 1-second period,  $S_{D1}$ , are determined to be:

$$S_{DS} = \frac{2}{3} S_{MS} = 0.660g \quad (\text{Equation 11.4-3})$$

$$S_{D1} = \frac{2}{3} S_{M1} = 0.362g \quad (\text{Equation 11.4-4})$$

According to Section 11.8.3 of the ASCE 7-10, the peak ground acceleration ( $PGA$ ) is determined to be 0.484g, and the site coefficient  $F_{PGA}$  from Table 11.8-1 is determined to be  $F_{PGA} = 1.016$ . Therefore, the peak ground acceleration at the ground surface is determined to be:

$$PGA_M = F_{PGA} \times PGA = 1.016 \times 0.484 = 0.492g \quad (\text{ASCE 7-10; Equation 11.8-1})$$

Table 2 provides a summary of these parameters.

Table 2. Mapped Provisional Design Response Spectrum Parameters at 5% Damping.

Parameter	Value
$F_a$	1.158
$F_v$	1.795
$F_{PGA}$	1.016
$S_S$	0.854
$S_I$	0.302
$S_{DS}$	0.660
$S_{D1}$	0.362
$PGA$	0.484
$PGA_M$	0.492

## 8.0 SITE-SPECIFIC RESULTS

The site-specific response spectra were obtained analyzing sixty profiles for each matched ground motion with the UHRS. Figure 5 shows response spectra for the  $MCE_R$ , ASCE 7-10, and 80% of ASCE 7-10. Figure 6 shows the design response spectra, IBC2012, and 80% of IBC2012 design spectra.

Table 3. Site Specific Spectral Acceleration at 5% Damping in Accordance with the ASCE7-10.

<b>Period</b>	<b>DBE Design S<sub>a</sub></b>
<b>(s)</b>	<b>(g)</b>
0.010	0.264
0.030	0.298
0.040	0.327
0.050	0.355
0.070	0.413
0.100	0.500
0.150	0.528
0.200	0.676
0.250	0.528
0.300	0.528
0.400	0.643
0.500	0.751
0.750	0.687
1.000	0.400
1.500	0.269
2.000	0.166
3.000	0.153
4.000	0.140
5.000	0.115
7.500	0.073
10.000	0.038

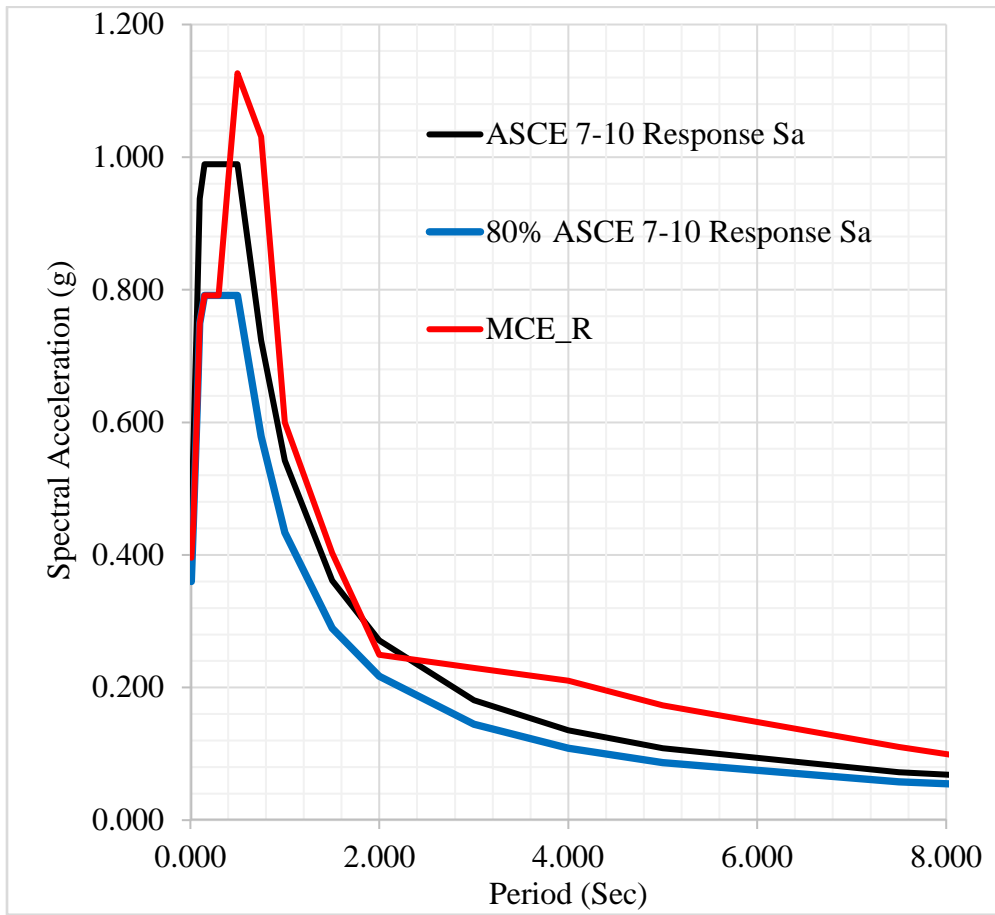


Figure 5. Site-Specific Response Spectrum,  $MCE_R$  Response Spectrum, the ASCE 7-10 Response Spectrum, and 80% of the ASCE 7-10 Response Spectrum.

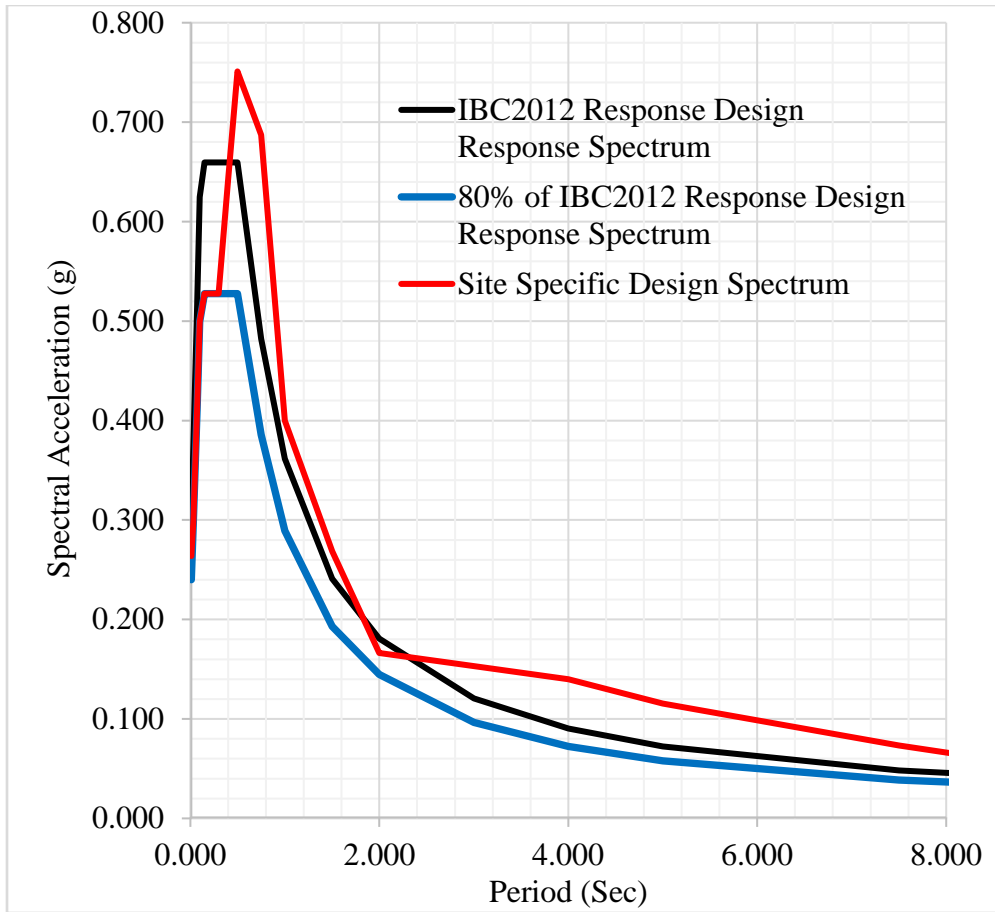


Figure 6. Site-Specific Design Response Spectrum, IBC2012 Design Response Spectrum, and 80% of the IBC2012 Design Response Spectrum.

## 9.0. DESIGN RESPONSE SPECTRAL PARAMETERS

The values of the Design Spectral Response Acceleration parameters are listed in Table 4 developed in accordance with ASCE7-10, Section 21.4. In this table,  $MCE_G$  is the Probabilistic (Risk Targeted) Maximum Considered Earthquake (site specific PGA).

Table 4. Site Specific Response Accelerations at 5% Damping Using the ASCE7-10 Maximum Component Coefficients.

PARAMETER	DESIGN ACCELERATION PARAMETERS (g)
$S_{DS}$	0.676
$S_{D1}$	0.400
$S_{MS}$	1.014
$S_{M1}$	0.600
$MCE_G$	0.410

The site-specific design response spectrum provided in Table 4 and the design response spectrum for Site Class “D,” developed as per IBC 2012, respectively for the 2% probability of exceedance in 50 years are shown in Figure 7.

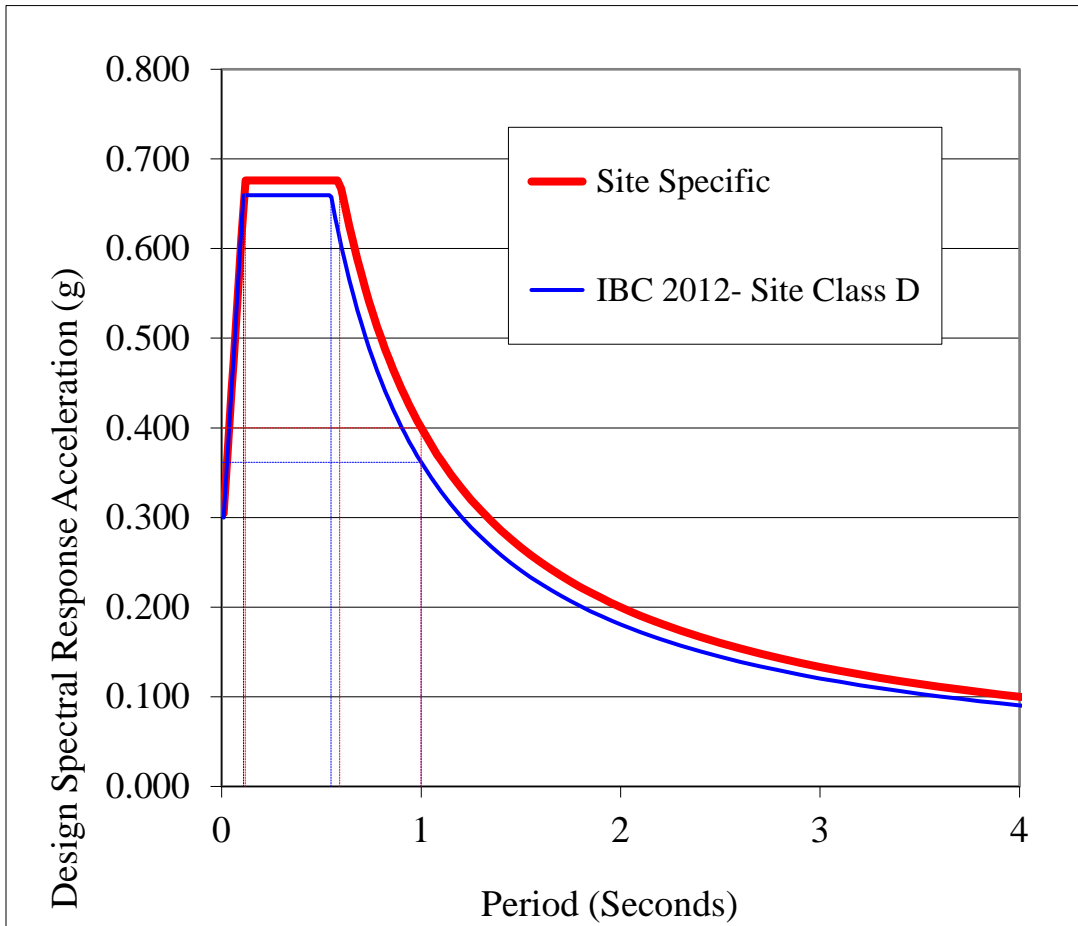


Figure 7. Design Response Spectra.

## **10.0 LIMITATIONS OF REPORT**

The analyses, conclusions, and recommendations presented in this report are professional opinions based on the site conditions and project layout described herein, and further assume that the conditions provided in the geotechnical report are representative of the subsurface conditions throughout the site, i.e., that the subsurface conditions elsewhere on the site are the same as those disclosed by the borings. If, during construction, subsurface conditions different from those encountered in the exploratory boring are observed or appear to be present, the Client must contact us immediately so that we can make changes to this report if needed. The scope of our services did not include an assessment of the effects of flooding and natural erosion on the project site. No liquefaction studies were performed.

This report was prepared for the exclusive use of the owner, architect, and engineer for evaluating the design of the project as it relates to ground response discussed in this report.

**APPENDIX A – Log of Boring B-3**



Surface Elevation: _____ Datum _____		Completion Date: <u>10/23/18</u>		SHEAR STRENGTH, tsf					
DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RCD	SAMPLES	$\Delta$ - UU/2 $\circ$ - QU/2 $\square$ - SV 0,5    1,0    1,5    2,0    2,5				
					STANDARD PENETRATION RESISTANCE (ASTM D 1586)				
					▲ N-VALUE (BLOWS PER FOOT)				
					WATER CONTENT, %				
PL   10    20    30    40    50   LL									
0-5	Topsoil: 3 inches of grass, roots and brown, lean clay Stiff to medium stiff, brown, LEAN CLAY - CL								
			3-5-8	SS1					
			3-4-7	SS2					
			2-5-6	SS3					
			3-4-5	SS4					
			1-3-4	SS5					
			4-6-9	SS6					
25-30	Medium stiff to stiff, red-brown and tan, sandy, LEAN CLAY - CL		1-2-3	SS7					
			3-4-6	SS8					
35-40	Dense, tan and red, CLAYEY SAND - SC trace gravel  little gravel		17-19-20	SS9					
			6-15-18	SS10					
45-50	Very dense, tan, CLAYEY GRAVEL, some sand - GC		17-24-48	SS11					72 ▲
	Very dense to dense, tan SAND with silt and gravel - (SP-SM) 6% passing No. 200 sieve		33-50/5"	SS12					5 ▲


NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.


LOG OF BORING 2002 WL J033136.01.GPJ GTINC 0638301.GPJ 11/1/18

**GROUNDWATER DATA**  
 FREE WATER NOT ENCOUNTERED DURING DRILLING

**DRILLING DATA**  
 \_\_\_ AUGER 3 3/4" HOLLOW STEM  
 WASHBORING FROM \_\_\_ FEET  
 JAJ DRILLER MMH LOGGER  
 CME 55 DRILL RIG  
 HAMMER TYPE Auto  
 HAMMER EFFICIENCY 90 %

REMARKS:

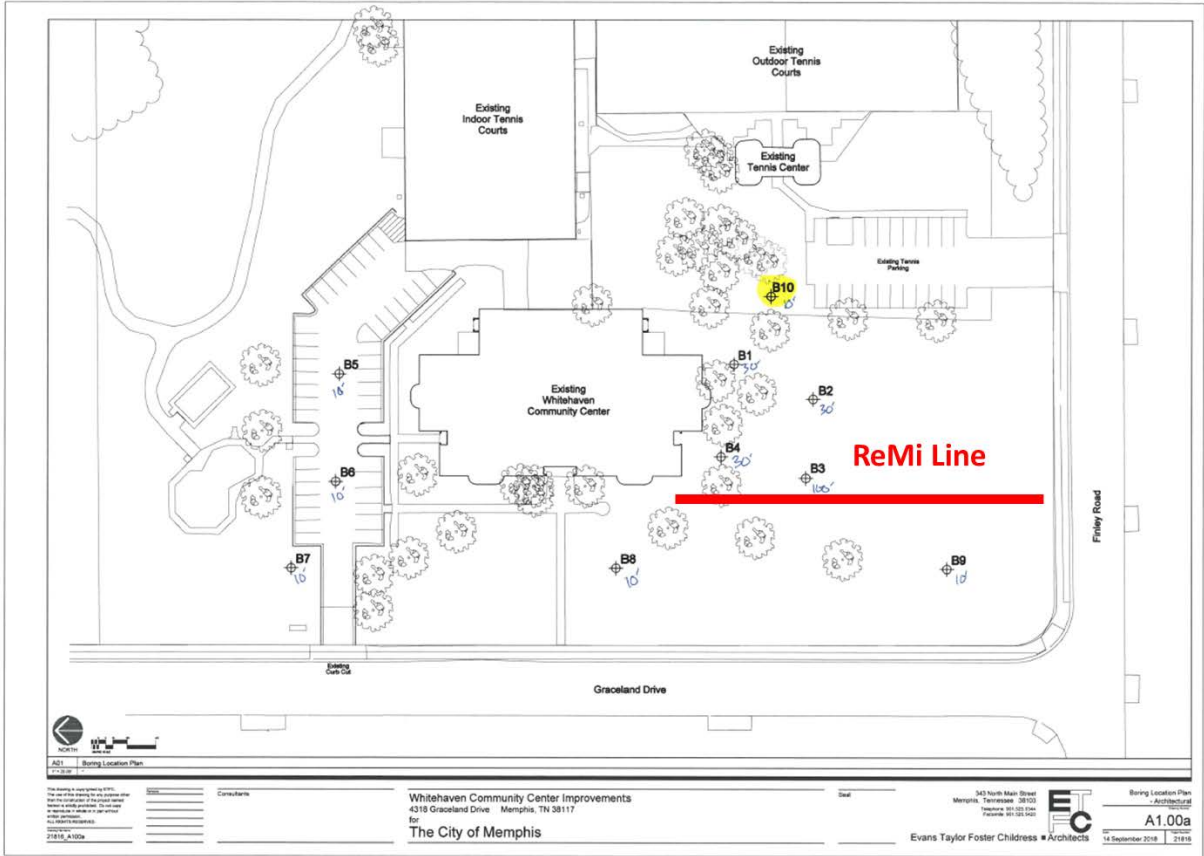
Drawn by: ABM	Checked by:	App'vd. by:
Date: 10/25/18	Date:	Date:
 <b>Whitehaven Community Center Additions</b> <b>Memphis, Tennessee</b>		
LOG OF BORING: B- 3		
Project No. J033136.01		

Surface Elevation: _____ Datum _____		Completion Date: <u>10/23/18</u>		GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf Δ - UU/2    ○ - QU/2    □ - SV 0.5    1.0    1.5    2.0    2.5																																								
DEPTH IN FEET	DESCRIPTION OF MATERIAL	STANDARD PENETRATION RESISTANCE (ASTM D 1586) ▲ N-VALUE (BLOWS PER FOOT)																																													
		WATER CONTENT, % PL   10    20    30    40    50    LL																																													
		<table border="1"> <tr> <td>60</td> <td>27-36-29 SS13</td> <td></td> <td></td> <td>65 ▲</td> </tr> <tr> <td>65</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>70</td> <td>14-23-26 SS14</td> <td></td> <td></td> <td>▲</td> </tr> <tr> <td>75</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>80</td> <td>25-50/6" SS15</td> <td></td> <td></td> <td>6" ▲</td> </tr> <tr> <td>85</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>90</td> <td>2-2-7 SS16</td> <td>▲</td> <td>●</td> <td></td> </tr> <tr> <td>95</td> <td>2-15-9 SS17</td> <td>▲</td> <td>●</td> <td></td> </tr> <tr> <td>100</td> <td>8-14-25 SS18</td> <td></td> <td></td> <td>▲</td> </tr> </table>					60	27-36-29 SS13			65 ▲	65					70	14-23-26 SS14			▲	75					80	25-50/6" SS15			6" ▲	85					90	2-2-7 SS16	▲	●		95	2-15-9 SS17	▲	●		100
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95	2-15-9 SS17	▲	●																																												
100	8-14-25 SS18			▲																																											
Very dense to dense, tan SAND with silt and gravel - (SP-SM) (continued)																																															
6% passing No. 200 sieve																																															
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Dense, tan and gray, CLAYEY SAND - SC																																															
Boring terminated at 100 feet.																																															
<b>GROUNDWATER DATA</b> X FREE WATER NOT ENCOUNTERED DURING DRILLING  <b>REMARKS:</b>		<b>DRILLING DATA</b> ___ AUGER <u>3 3/4"</u> HOLLOW STEM WASHBORING FROM ___ FEET <u>JAJ</u> DRILLER <u>MMH</u> LOGGER <u>CME 55</u> DRILL RIG HAMMER TYPE <u>Auto</u> HAMMER EFFICIENCY <u>90</u> %		Drawn by: ABM    Checked by: _____    App'vd. by: _____ Date: 10/25/18    Date: _____    Date: _____																																											
																																															
		Whitehaven Community Center Additions Memphis, Tennessee																																													
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		Project No. J033136.01																																													

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 LOG OF BORING 2002.WL\_J033136.01.GPJ.GTNC 0638301.GPJ 11/1/18

**APPENDIX B – ReMi Line**









# SPIRIT OF THE WHITEHAVEN COMMUNITY CENTER



# THANK YOU

please contact Kate Haywood (owner/principle architect) with questions/thoughts



PREPARED BY:

kate@dailydesigngroup.com  
901.268.1718  
www.dailydesigngroup.com





EXHIBIT 3 – NON-COLLUSION AFFIDAVIT

The Proposer, by its officers and its agents or representatives present at the time of filing this Proposal, being duly sworn on their oaths say, that neither they nor any of them have in any way, directly or indirectly, entered into any arrangement or agreement with any other Proposer, or with any officer of the Owner or Owner’s representative whereby such affiant or affiants or either of them has paid or is to pay such other Proposer or officer any sum of money, or has given or is to give to such other Proposer or officer anything of value whatever, or such affiant or affiants or either of them has not directly or indirectly, entered into any arrangement or agreement with any other free competition into the letting of the contract sought for by the attached prices that no inducement of any form or character other than that which appears on the face of the Proposal will be suggested, offered, paid or delivered to any person whomsoever to influence the acceptance of the Proposal or awarding of the Contract, nor has this Proposer any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the Contractor sought by this Proposal.

Submitted By:

Firm Name \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

**SIGNATURES**

If PROPOSER is:

A. An Individual

By \_\_\_\_\_

(SEAL)

(Individual's Name)

Doing business as

\_\_\_\_\_

Business Address:

\_\_\_\_\_

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Phone Number: \_\_\_\_\_

**B. A Partnership**

By \_\_\_\_\_

(SEAL)

(Firm Name)

---

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(General Partner)

Business Address:

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Phone Number: \_\_\_\_\_

**C. A Corporation**

By \_\_\_\_\_

(SEAL)

(Corporation Name)

---

(State of Incorporation)

By \_\_\_\_\_

(Name of Person Authorized to Sign)

Title \_\_\_\_\_

Attest \_\_\_\_\_

(Secretary)

**Business Address:**

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**Phone Number:** \_\_\_\_\_

**D. A Joint Venture**

**By** \_\_\_\_\_  
(Name)

**Business Address:**

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**By** \_\_\_\_\_  
(Name)

**Business Address:**

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**Each joint venture member must sign. The manner of signing for each individual partnership and corporation that is party to joint venture should be in manner indicated above.**

## EXHIBIT 4 – CRIMINAL AND CIVIL PROCEEDINGS DISCLOSURE

### PROPOSING FIRM'S DISCLOSURE OF CRIMINAL AND CIVIL PROCEEDINGS

Describe all ongoing and past civil and criminal proceedings within the last 10 years. Indicate the status of current proceeding and the outcome of closed or completed actions. Also, describe, if any, how the outcome of actions impacted company business operations. Attach additional pages if necessary.

Note: If no civil and criminal proceedings within the last 10 years, indicate here and return this attachment with your proposal.

**REQUEST FOR PROPOSALS FOR CONSTRUCTION MANAGER-AT-RISK –**

**NEW WHITEHAVEN BANQUET FACILITY**

Please complete the following form and include with the Proposal as item 10.

Having carefully examined all the requirements of this RFP, and any attachments and addenda, the undersigned proposes to furnish the Construction Manager-at-Risk services as required for this project on the following terms:

**Establishment of the Construction Manager-at-Risk’s Budget Limitation (CMBL):** The City of Memphis has established a CMBL amount of \$2,616,944 which includes the pre-construction phase fee, owner’s contingency, and the construction services GMP proposals.

<b>1. Proposer’s Pre-Construction Phase Fee:</b> Proposer’s Pre-Construction Phase Fee	\$
<b>Establishment of the Construction Cost Limitation:</b> Using the CMBL and the Proposer’s Pre-Construction Phase Fee identified above, the Proposer shall identify the Construction Cost Limitation (CCL)	
<b>2. Construction Manager-at-Risk’s Budget Limitation (CMBL)</b>	\$2,616,944
<b>3. Owner’s Construction Contingency</b>	Included in Item 2
<b>4. Proposer’s Construction Cost Limitation (CCL) (Line 2 minus Line 1)</b>	\$
<b>5. Proposer’s Construction Phase Fee:</b> Using the CCL identified on Line 4 above, the Proposer shall identify a Construction Phase Fee Percentage	%
<b>6. Proposer’s Estimated Construction Phase Fee Amount (Percentage on Line 5 times CCL in Line 4)</b>	\$
<b>7. Proposer’s General Conditions Percentage:</b> Using the CCL identified on Line 4 above, the Proposer shall identify a General Conditions Fee Percentage	%
<b>8. Proposer’s Estimated General Conditions Amount (Percentage on Line 7 times CCL in Line 4)</b>	\$

**Respectfully submitted and Certified by:**

---

**Proposer's Authorized Signature**

---

**Proposer's Authorized Signature Printed  
Name**

**Date of Signature**

**Address**

**DUNS Number**

**Contact Person**

**Contact Person  
Email**

***FAILURE TO USE THIS FORM MAY DISQUALIFY YOUR PROPOSAL.***

***FAILURE TO INCLUDE BOTH PAGES OF THIS FORM MAY DISQUALIFY YOUR PROPOSAL.***

EXHIBIT 6 – PROPOSER QUESTIONS TEMPLATE

RFP Section	QUESTION



EXHIBIT 7 – EVALUATION CRITERIA

Evaluation Category	Questions/Areas of Evaluation within Categories	Total Possible Points per Question	Total Possible Points
Qualifications			25
	<ul style="list-style-type: none"> <li>• Employee professional registrations and certifications</li> </ul>	5	
	<ul style="list-style-type: none"> <li>• Employee experience and skill level</li> </ul>	20	
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	<ul style="list-style-type: none"> <li>• Customer references</li> </ul>	9	
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	<ul style="list-style-type: none"> <li>• Detailed description of the project team’s capability to provide CMAR services with a GMP, particularly for public organizations or governments</li> </ul>	10	
	<ul style="list-style-type: none"> <li>• Detailed description of the processes to be utilized during the pre-construction phase</li> </ul>	5	
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**PROJECT NAME**  
**LOCATION AND/OR ADDRESS**  
**MEMPHIS, TN**

**PROJECT MANUAL**

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**EXHIBITS**

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## CONSTRUCTION MANAGEMENT AGREEMENT

THIS AGREEMENT (herein the "Agreement") is made and entered into as of the \_\_\_\_ day of 20XX, between CITY OF MEMPHIS, (herein referred to as "Owner") and a \_\_\_\_\_ Corporation, (herein referred to as "Construction Manager").

### RECITALS

1. WHEREAS, the Owner desires to have constructed certain improvements and associated facilities (herein referred to as the "Project") upon real property owned by Owner in Memphis, Tennessee, and more particularly described in Exhibit "A" attached hereto and incorporated herein by reference.

2. WHEREAS, the Construction Manager desires to enter into this Agreement as an independent contractor licensed in the state of Tennessee and is ready, willing and able to construct the Project in accordance with the terms and subject to the conditions of this Agreement.

NOW, THEREFORE, in consideration of good and valuable consideration, received or to be received, the sufficiency of which the parties acknowledge, the parties agree as follows:

### ARTICLE 1

#### SCOPE OF THE WORK

Section 1.1. The Construction Team. The Construction Manager, the Owner, the Designated Representative of Owner, as defined in Article 11, and the Design Professionals retained by the Owner (hereinafter referred to as the Consultant, defined as \_\_\_\_\_) shall begin work during the \_\_\_\_\_ phase of the design through construction completion. The Owner, the Consultant and the Construction Manager are hereinafter referred to as the "Construction Team". The Construction Manager shall provide leadership to the Construction Team on all matters relating to construction.

Section 1.2. Scope of the Work. The Construction Manager shall provide for the Guaranteed Maximum Price set forth herein, the labor, materials, supplies, tools, equipment, utilities, products, appliances, and facilities necessary to construct the Project upon the real property owned by the Owner in Memphis, Tennessee. The general scope of the Work is more particularly described in Exhibit "B", which is attached hereto and incorporated herein by reference. Construction Manager agrees that the Project shall be constructed in accordance with the terms, conditions, obligations and provisions of this Agreement and the Contract Documents as defined in Article Two of this Agreement. The Term "Work" includes, but is not limited to all labor, materials, tools, equipment, supplies and services which are necessary to construct the Project as described in the Contract Documents, whether or not such labor, materials, tools, equipment, supplies and services are incorporated in the Project. Notwithstanding any exclusion or inclusion in any Exhibit to this Agreement to the contrary and whether or not the Work is specifically defined in the Contract

Documents, Contractor agrees to construct the Work, including all of the improvements which are reasonably inferable from the Contract Documents

Section 1.3. Definitions. The Contract Documents include this Agreement, and all Exhibits thereto; the Project Manual as developed by the Consultant; the Drawings and Specifications developed and to be developed by the Consultant; and the Request for Proposals and other bidding documents. The Contract Documents include any mutually agreed to modifications to any of them whether such modifications are made prior to or after the execution of this Agreement. Selected Contract Documents are listed in **Exhibit “C”**, which is attached hereto and incorporated herein by reference, or to be added later by Change Order when completed. These documents define the scope of the Project on which the Owner and the Construction Manager agree, and the basis of a Guaranteed Maximum Price (GMP) which will be established in form similar to **Exhibit “E”**. As used in this Agreement, a “modification” is either:

- (a) a written and signed amendment to this Agreement;
- (b) a Change Order, Change Instruction or Construction Change authorized in writing by the Owner; or
- (c) a written interpretation issued by the Owner.

Section 1.4. Intent of Contract Documents. The intent of the Contract Documents, except as otherwise expressly provided in the Contract Documents, is to include all design and engineering, materials, products, appliances, equipment, labor and services of every kind necessary for the proper execution and performance of the Work and the terms and conditions of payment for the Work. The Contract Documents are to be considered as one document, and whatever is called for by any one of the documents shall be as binding as if called for by all.

Section 1.5. Errors in Contract Documents. In the event the Construction Manager finds an error, ambiguity, conflict, inconsistency, omission, discrepancy or variance in the Contract Documents, the Owner shall receive from the Construction Manager notice in writing of any such error, ambiguity, conflict, inconsistency, omission, discrepancy or variance within forty-eight (48) hours of the discovery of such error, ambiguity, conflict, inconsistency, omission, discrepancy or variance. The Owner will make any correction, interpretation or clarification promptly, basing its decision on the intent of the Contract Documents.

The Construction Manager shall be entitled to any cost, or damages including consequential damages or other compensation, or to any extension of time due to the discovery of an error, ambiguity, conflict, inconsistency, omission, discrepancy or variance in the Contract Documents not the fault of the Construction Manager except as set forth in a written Change Order, Change Instruction or Construction Change or Change In Guarantee Maximum Price Provisions. In no event will the Construction Manager be entitled to a Change Order for errors or omissions in any portion of the Contract Documents for which the Construction Manager is responsible.



## ARTICLE 2

### CONSTRUCTION MANAGER'S SERVICES

Section 2.1. Construction Manager's Services. The Construction Manager will perform the following services under this Agreement in each of the two (2) phases described herein below:

#### **SECTION 2.2 PRE-CONSTRUCTION PHASE:**

2.2.1. Consultation During Project Development. The Construction Manager shall schedule and attend regular meetings with the Consultant during the development of design to advise on site use and improvements, selection of materials, building systems, and equipment. The Construction Manager shall provide recommendations on construction feasibility, availability of materials and labor, time requirements for installation and construction, and factors related to cost including costs of alternative designs or materials, preliminary budgets, and value engineering alternatives. Any material or system proposed by the Construction Manager shall, upon acceptance by the Owner and the Consultant, become a part of the Contract Documents.

2.2.2 Establishment of the GMP: The Construction Manager shall establish a GMP within the timeframes established in Section 4.1 of Article 4 and in accordance with Exhibit "E".

2.2.3 Review of Contract Documents: Without assuming any of the design responsibility, the Construction Manager shall review the Drawings and Specifications as they are prepared, recommending alternative solutions whenever design details affect construction feasibility or schedules. The Construction Manager shall concentrate on ways to reduce both the construction costs and schedule.

2.2.4 Construction Planning: The Construction Manager shall recommend for purchase and expedite, with the Owner's approval, the procurement of long-lead items to ensure their delivery by the required dates.

2.2.4.1 The Construction Manager shall make recommendations to the Owner and the Consultant regarding the division of Work in the Drawings and Specifications to facilitate the bidding and awarding of Trade Contracts, as defined in Section 2.3.5 herein, allowing for phased construction taking into consideration such factors as time of performance, availability of labor, overlapping trade jurisdictions, and provisions for temporary facilities.

2.2.4.2 The Construction Manager shall review the Drawings and Specifications with the Consultant to eliminate areas of conflict and overlapping in the Work to be performed by the various Trade Contractors, as defined in Section 7.1 herein, and prepare prequalification criteria for bidders, which shall be subject to the approval of the Owner and which shall include:

- a. That the Trade Contractor has requisite experience.
- b. That the Trade Contractor has financial stability.

c. That the Trade Contractor is properly licensed.

2.2.4.3 The Construction Manager shall develop Trade Contractor or Subcontractor interest in the Project and as working Drawings and Specifications are completed, take competitive bids, in accordance with the requirements set forth in Exhibit "F", on the Work of the various Trade Contractors. After analyzing the bids, award trade contracts with the Owner's approval of such contracts being awarded. The Construction Manager shall prepare and distribute any and all bidding documents or bid packages and conduct pre-award and post-award conferences with successful bidders as necessary to protect the interests of the Owner.

## **SECTION 2.3 CONSTRUCTION PHASE**

2.3.1 Project Control and Supervision of the Work: The Construction Manager shall monitor and coordinate the Work of the Trade Contractors so as to complete the Project for the Guaranteed Maximum Price as hereinafter defined, in full accordance with the Plans and Specifications and no later than the Substantial Completion Date as established by the terms of this Agreement.

2.3.1.1 The Construction Manager shall maintain a competent full-time staff at the Project site including a full time Project Manager to supervise and insure that the Work and progress of the Trade Contractors is in full compliance with the Plans and Specifications and Substantial Completion Date set forth in this Agreement. An organizational chart for the services, job site and home office staffing reflecting the manpower plan of the Construction Manager during both the Pre-Construction and Construction Phases of the Project and is attached hereto as Exhibit "D" and incorporated herein by reference.

Any individual depicted on Exhibit "D" shall be changed upon written request of the Owner at no additional cost to the Owner. No individual depicted on Exhibit "D" shall be changed by the Construction Manager without the written consent of the Owner unless said individual ceases to be in the employ of the Construction Manager. The Project Manager depicted on Exhibit "D" shall be vested with full authority to make decisions on behalf of the Construction Manager and all directions given to the Project Manager by the Owner or its Representative shall be binding upon the Construction Manager. The Project Manager shall devote his full time to the Work from the date of the Notice to Proceed for the Construction Phase until the date Substantial Completion is made hereunder, and shall maintain his office on the site of the Work. He shall direct, coordinate and supervise all Work, inspect all materials delivered to the site of the Work to ascertain whether or not they comply with the requirements of the Contract Documents, and reject all non-conforming materials or workmanship.

2.3.1.2 The Construction Manager shall establish on-site organization and lines of authority in order to carry out the overall construction of the Project in full accordance with the Plans and Specifications.

2.3.1.3 The Construction Manager shall schedule and conduct bi-weekly progress meetings at which the Owner, Consultant and Construction Manager can discuss jointly such matters as procedures, progress, problems and scheduling. The Construction Manager shall prepare written

minutes of each progress meeting which shall be distributed to the Owner and the Consultant before the next progress meeting.

2.3.1.4 The Construction Manager shall provide regular monitoring of the CPM Progress Schedule as construction progresses and identify, on the monthly updates of the schedule pursuant to **Section 3.2**, potential variances between scheduled dates and actual progress being made. The Construction Manager shall review the schedule of Work not started or incomplete and recommend to the Owner all necessary and appropriate action to be taken to meet the Substantial Completion Date. The Construction Manager shall provide monthly narrative reports summarizing the status of the Work including any major changes in schedule.

2.3.1.5 The Construction Manager shall determine the adequacy of the Trade Contractors' personnel and equipment and the availability of materials and supplies to meet the Progress Schedule and take appropriate action when the requirements of a Trade Contract are not being met.

2.3.2 Physical Construction: The Construction Manager shall provide all supervision, labor, materials, construction equipment, tools and supplies which are necessary to complete the Work in accordance with the Contract Documents. However, the **Construction Manager shall not perform any of the Work with its own forces**, with exception as to the General Conditions work as approved by Owner or at the direction of the Owner, unless such performance becomes necessary by reason of a default of a Trade Contractor.

2.3.3 Cost Control: The Construction Manager shall develop and monitor an effective system of Project cost control and, if applicable, revise the Guaranteed Maximum Price to incorporate any Owner approved changes as they occur. The Construction Manager shall develop cash flow reports and forecasts as needed by the Owner.

2.3.4 Change Orders: The Construction Manager shall develop and implement a system for the preparation, review and processing of Change Orders and/or Construction Changes and recommend necessary or desirable changes to the Owner. The Construction Manager shall prepare requests for changes, if required by the Owner, and submit such recommendations to the Owner and the Consultant. Any system proposed by the Construction Manager, and approved by Owner, shall become a part of the Contract Documents.

2.3.5 Trade Contractors: **The Construction Manager shall enter into direct contracts with Trade Contractors or Subcontractors (hereinafter "Trade Contracts") and shall be fully responsible for their work**, including the timeliness, quality and price of said Work. The Construction Manager shall review and process all applications for payment by Trade Contractors for monthly progress and final payments. The Construction Manager shall pay all Trade Contractors directly. The Construction Manager shall require that the Trade Contractors furnish an acknowledgment of payment/waiver of lien with each application for payment certifying that money has been received for performance of their Trade Contract during the previous payment period and waiving any right to file or assert a mechanic's and materialmen's lien.

2.3.6 Observation: The Construction Manager shall observe the Work of Trade Contractors for defects and deficiencies in the Work to ensure that the Work is in full compliance with the Drawings and Specifications.

2.3.7 Document Interpretation: The Construction Manager shall refer all questions for interpretation of the documents prepared by the Consultant to the Consultant.

2.3.8 Project Site Documents: The Construction Manager shall record the progress of the Project, including information on the Trade Contractors and the percentage of completion. The Construction Manager shall keep a daily log available to the Owner.

2.3.8.1 The Construction Manager shall maintain, at the Project site on a current basis: records of all necessary Contract Documents, samples, purchases, materials, equipment, maintenance and operating manuals and instructions, and other construction-related documents, including all revisions. The Construction Manager shall obtain data from Trade Contractors and maintain a current set of record Drawings, Specifications and operating manuals and at the completion of the Project, deliver all such records to the Owner.

2.3.9 Start-up: The Construction Manager shall direct the checkout of utilities, operations systems and equipment for readiness and assist in their initial start-up and testing by the Trade Contractors.

2.3.10 Order and Discipline: The Construction Manager shall, at all times, be responsible for enforcing strict discipline and good order among its employees and/or the Trade Contractors. If any person on the site of the Work shall appear to be incompetent, disorderly or intemperate, in any way disrupts or interferes with the Work or is in any other way disqualified for or unfaithful to the job entrusted to him, such person shall be discharged immediately and he shall not again be employed on the Work without the prior written consent of the Owner.

2.3.11 Clean-up:

(a) During the performance of the Work, the Construction Manager shall keep and cause the Trade Contractors to keep the site of the Work clean and free of all rubbish, waste materials, debris and other materials in accordance with the instructions set forth in the Contract Documents. At the end of each working day, the Construction Manager shall remove and cause the Trade Contractors to remove waste materials, rubbish and debris from and about the Work, as well as surplus materials, and will leave the site of the Work clean in accordance with the Contract Documents.

(b) All materials delivered to the site of the Work shall be stored and handled as to preclude inclusion of any foreign substances, and to prevent any discoloration or damage which might reduce its effectiveness as part of the Work.

2.3.12 Safety and Security:

(a) The Construction Manager shall provide for and oversee all safety orders, precautions and programs necessary for the safety of the Work. The Construction Manager shall take the precautions set forth in the Contract Documents in order to insure the safety of all persons involved in the Work, all other persons whom the Work might affect, all equipment and materials incorporated in the Work, all property on the site of the Work and adjacent to it, and the Owner's business operations which are functioning on the site of the Work or in the vicinity of it.

(b) The Construction Manager and all of its employees shall comply with all security rules, if any, made by the Owner.

#### 2.3.13 Inspection of the Work:

(a) The Owner and persons designated by the Owner shall, at all times, have access to the Work wherever it is in preparation or progress and the Construction Manager shall provide proper facilities for such access. If the Owner discovers any defective Work in connection with any inspection, it shall report within forty-eight (48) hours such defective Work to the Construction Manager in writing and the Construction manager shall correct it.

(b) If the Contract Documents, the written instructions of the Owner, laws, ordinances, rules or regulations, or any public authority require any of the Work to be specifically tested or inspected, the Construction Manager shall give the Owner timely notice of its readiness for inspection and testing, and if the test or inspection is performed by an authority other than the Owner, of the date set for such test or inspection. Inspections by the Owner shall be promptly made and, where if applicable, at the source of supply. If any of the Work should be covered up without the approval or consent of any necessary authority, it shall be uncovered for examination, if required by such authority, at the sole expense of Construction Manager.

(c) Re-examination of questioned Work that has been previously inspected by the Owner may be ordered by the Owner and, if so ordered, the questioned Work shall be uncovered by the Construction Manager. If such Work is found to be in compliance with the Contract Documents, the Owner shall pay the actual cost of the re-examination. If such Work is found to be not in compliance with the Contract Documents, the Construction Manager or the appropriate Trade Contractor shall bear the costs of the re-examination.

#### 2.3.14 Permits, Licenses, Laws and Regulations.

2.3.14.1 Construction Manager to Secure Building Permits: The Construction Manager or Trade Contractor shall secure and pay for all fees, licenses and local permits necessary for the Construction Manager and Trade Contractors to lawfully perform the Work.

2.3.14.2 Compliance with Laws: The Construction Manager shall give all notices and shall comply with all laws, ordinances, rules, regulations and orders of any public authority having jurisdiction over the Work, which have any bearing on the execution of the Work but does not include any design responsibilities. If the Construction Manager observes that any of the Contract Documents are at variance in any respect with any such laws, ordinances, rules, regulations and orders, it shall promptly notify the Owner in writing and any necessary changes shall be made. If

the Construction Manager fails to give such notice or executes any of the Work in a manner contrary to any such laws, ordinances, rules, regulations or orders, it shall bear all resulting costs to correct said work to comply with such laws and regulations and be liable for any resulting fines, penalties, judgments or damages imposed on or incurred by the Owner.

#### 2.3.15 Taxes.

##### 2.3.15.1 Payment of Taxes by Construction Manager:

(a) Any and all taxes, excise, duties and assessments existing at the date of this Agreement, in any manner levied in connection with the Work, assessed or imposed by any government or agency having jurisdiction over the Work (other than taxes on the real property of Owner), shall be the sole responsibility and liability of the Construction Manager.

(b) The Construction Manager shall promptly pay and discharge when due, unless the validity or application is being contested by the Construction Manager in good faith, any and all taxes, excises, duties and assessments, in connection with the Work, together with any interest and penalties, if any, the responsibility and liability for which the Construction Manager has assumed pursuant to the provisions of Paragraph (a), unless any such tax, excise, duty or assessment is levied, assessed or imposed upon the Owner, in which case the Owner shall promptly give the Construction Manager notice of such levy, assessment or imposition, whereupon the Construction Manager shall promptly pay and discharge the same. The Owner shall assist the Construction Manager in contesting the validity or application of any such levy, assessment or imposition, and in the event a refund of all or any part of any tax, excise, duty or assessment in connection with the Work (including interest and penalties, if any) shall be refunded in whole or in part to the Owner, the amount refunded shall promptly be remitted to the Construction Manager (less the amount of expenses associated with such contest not previously reimbursed by the Construction Manager to the Owner).

#### 2.3.16 Shop Drawings and Samples; Material Testing.

##### 2.3.16.1 Definitions:

(a) As used in this Agreement, “Shop Drawings” are drawings, diagrams, illustrations, product schedules, performance charts, brochures and other data which are prepared by the Construction Manager, any Trade Contractor, any manufacturer, supplier or distributor, and which illustrates some portion of the Work.

(b) As used in this Agreement “Samples” are physical examples furnished by the Construction Manager to illustrate materials, equipment or workmanship.

##### 2.3.16.2 Submissions:

(a) Construction Manager shall review and stamp as having been reviewed and submit, in orderly sequence so as to cause no delay in the Work or in the work of any contractor, all Shop Drawings and Samples required by the Contract Documents or subsequently by the Owner. Shop

Drawings and Samples shall be properly identified as specified in the Contract Documents, or as the Owner may require. At the time of submission, the Construction Manager shall inform the Consultant in writing of any deviation in the Shop Drawings or Samples from the requirements of the Contract Documents.

(b) By reviewing and submitting Shop Drawings and Samples, the Construction Manager represents that it has determined and verified all field measurements, field construction criteria, materials, catalog numbers and other data, and that it has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and the Contract Documents.

#### 2.3.16.3 Review of the Owner:

(a) The Consultant will review and approve Shop Drawings and Samples within a reasonable time, but only for conformance with the design concept of the Work based upon the information provided by the Contract Documents. The approval of the Owner or the Consultant of a given item shall not indicate approval of an assembly in which the item functions.

(b) The approval of the Consultant of Shop Drawings or Samples shall not relieve the Construction Manager of responsibility for any deviation from the requirements of the Contract Documents unless the Construction Manager has informed the Owner and the Consultant in writing of such deviation at the time of submission and the Owner has given written approval of the specific deviation, nor shall the approval of the Owner or the Consultant relieve the Construction Manager from responsibility for errors or omissions in the Shop Drawings or Samples.

2.3.16.4 Corrections Made by Construction Manager: The Construction Manager shall make any corrections required by the Owner or the Consultant and shall submit the required number of corrected copies of Shop Drawings or new Samples until the submittal is returned from the Owner or the Consultant with "Approved as Noted - proceed with fabrication." The Construction Manager shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Owner or the Consultant on previous submissions.

2.3.16.5 Prior Approval Required: No portion of the Work requiring a Shop Drawing or Sample submission shall be commenced until the submission has been approved by the Consultant. All such portions of the Work shall be performed in accordance with approved Shop Drawings and Samples and the Contract Documents.

2.3.16.6 Submittal Schedule: As the project is bid out, the Construction Manager shall provide the Owner and the Consultant with a schedule of the dates that each Shop Drawing or Sample will be submitted for approval. The sequence of the submittals of the Construction Manager shall be scheduled so as to permit an orderly review by the Owner and the Consultant. The schedule shall allow reasonable added time according to the number or complexity of Shop Drawings in each submittal for the checking, correction and rechecking of corrections, as well as for return of approved or rejected Shop Drawings and Samples to the Construction Manager. The submittal schedule shall allow not less than fourteen (14) calendar days for the Consultant to review and return any Shop Drawing or Sample.

#### 2.3.16.7 Material Testing:

- (a) Testing of materials and equipment shall be performed by an independent testing laboratory retained by the Construction Manager and approved by the Owner.
- (b) The Construction Manager shall make the site available for the independent testing laboratory to perform testing. The Construction Manager shall insure that tests required by the Contract Documents are performed timely in accordance with the Contract Documents.
- (c) All tests required to determine the suitability of items proposed by the Construction Manager in substitution for items specified in the Contract Documents shall be performed by the independent testing laboratory at the expense of the Construction Manager.

### ARTICLE 3

#### PROGRESS OF THE WORK

Section 3.1. Commencement and Completion. The Construction Manager shall commence the Pre-Construction Phase of the Work upon the written authorization of the Owner. The Construction Manager shall commence the Construction Phase of the Work within a reasonable period of time following receipt of written Notice to Proceed from the Owner and shall substantially complete the Work on the Project within [REDACTED] days. Time is of the essence, and the Substantial Completion Date (Notice to Proceed date plus the number of days assigned above to substantially complete the project) may be altered only as provided in this Agreement. For purposes of this Agreement, Substantial Completion shall occur when the Work has been constructed to the point that only minor or punch list items remain to be performed and the Work can be occupied by the Owner and used for the purpose for which it was intended. Owner will, upon request of the Construction Manager, issue a certificate establishing the Substantial Completion Date at any time after substantial completion has occurred.

Section 3.2. The Progress Schedule. Construction Manager will submit to the Owner a milestone progress schedule. On the date the GMP is established the Construction Manager shall submit a detailed Critical Path Method (“CPM”) progress schedule for the Owner's review, which when approved shall become an Exhibit to this Agreement. Said CPM Progress Schedule shall include, but will not be limited to, the durations for all major items of Work to be performed; the start and finish date of all such activities. The Construction Manager shall submit to the Owner updated progress schedules every month to reflect actual progress made and to forecast future progress of the Work. Float is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date for any of the activities depicted on the CPM Progress Schedule. Float is not for the exclusive use or benefit of either the Owner or the Construction Manager. Ownership of the float is vested in the Project rather than the Owner or Construction Manager.

Section 3.3. Extension of Substantial or Final Completion Date.



(a) The Substantial or Final Completion Date shall be extended only for such number of calendar days that the Work is actually delayed by 1) a Change Order or Construction Change; 2) an order of a court of competent jurisdiction suspending the Work; 3) abnormal inclement weather, as defined in Exhibit "G", which is attached hereto and incorporated herein by reference, or 4) a natural catastrophe, such as a flood or earthquake, (herein "Excusable Delays"). No extension to the Substantial or Final Completion Date shall be granted due to the negligence or fault of the Construction Manager or its Trade Contractors. Similarly, no extensions to the Substantial or Final Completion Date shall be granted due to nonavailability of materials, nonavailability of local labor, or normal (as defined by the U.S. Weather Bureau) inclement weather. No extension to the Substantial or Final Completion Date shall be granted for the period of time during which a delay in the performance of the Work is caused in part by the Owner, the Consultant, or their consultants and in part by the Construction Manager or one for whom the Construction Manager is responsible (herein "Concurrent Delays") but only to the extent of the time directly related to the Construction Manager.

(b) In order to obtain an extension of the Substantial Completion Date and/or damages due to an Excusable Delay, the Construction Manager in each instance shall give written notice to the Owner within five (5) days after the discovery of the occurrence of each Excusable Delay, and upon the failure of the Construction Manager to do so, the Construction Manager's right, if any, to an extension and/or damages will be waived. The term "discovery of the occurrence," for purposes of this paragraph, means when a competent Construction Manager discovered or should have discovered such occurrence. The Owner shall within thirty (30) days render a written decision which shall be made in good faith and shall be conclusive upon the parties granting or refusing the request of the Construction Manager for an extension of the Substantial Completion Date.

Section 3.4. Time Extension and Damages for Delay. Construction Manager agrees to prosecute the Work and to require all Trade Contractors to prosecute the Work in a timely and proper method and manner so as to meet the dates reflected on the CPM Progress Schedule including the Substantial Completion Date. In the event that the Construction Manager is delayed in the prosecution of the Work through no fault of the Construction Manager or its Trade Contractors, and for cause as set forth in Section 3.3(a) of this Agreement, and defined therein as Excusable Delay, then the Construction Manager may seek a time extension and equitable adjustment in the GMP and Construction Manager's fee in accordance with Section 3.3(b). At the Owner's option, the Construction Manager may be ordered by the Owner to demobilize its forces because the Project is delayed or suspended. In such event, the Owner will reimburse the Construction Manager for the reasonable cost of demobilization and remobilization.

Section 3.5. Liquidated Damage. In order to compensate the Owner for failing to achieve the Substantial Completion Date, as such date has been adjusted for Excusable Delays as defined herein, the Construction Manager shall pay to the Owner as liquidated damages and not as a penalty the following amounts:

- 1) For calendar days 1-30, the sum of \_\_\_\_\_ Dollars (\$XXXX) per day;
- 2) Thereafter, for each calendar day until Substantial Completion is achieved, the sum of \_\_\_\_\_ Dollars (\$XXXX) per day.

3) The sum of [REDACTED] Dollars (\$XXXX) per day for each calendar day the punch list work and submission of all close-out documents remains incomplete beyond thirty (30) calendar days from date of Substantial Completion.

The Construction Manager agrees that any assessment by the Owner of liquidated damages or payment by the Construction Manager to the Owner of liquidated damages is to compensate the Owner only for the damages arising out of the Construction Manager's delay in achieving the Substantial Completion Date, and is not a release of any of the Owner's other rights, claims or damages against the Construction Manager, including claims of the Owner for defective or improper workmanship of the Construction Manager.

## ARTICLE 4

### PAYMENT

Section 4.1(a). The Cost of the Work and Guaranteed Maximum Price. The Owner and the Construction Manager have agreed that a Guaranteed Maximum Price (herein referred to as the "GMP") for the Work to be performed by the Construction Manager will be established within thirty (30) days after the completion of the [REDACTED] Drawings prepared by the Consultant. If the Construction Manager does not provide an agreed upon GMP to the Owner within thirty (30) days from the completion of the [REDACTED] Drawings, the Owner shall be under no obligation to pay the Construction Manager its fee until such time as an agreed upon GMP is established. The Owner and the Construction Manager shall be under an obligation to negotiate in good faith to establish a GMP. If no mutually agreed upon GMP is established despite the parties' good faith efforts within sixty (60) days from the completion of the [REDACTED] Drawings, the Owner may, at its sole option, terminate this Agreement without further payment to the Construction Manager except cost and fee of Construction Manager to date of termination. In such event, all or some of the Trade Contractors will be assigned to the Owner in its discretion. The components of the GMP are described on Exhibit "E" which is attached hereto and incorporated herein by reference. The Owner agrees to pay the Construction Manager up to the amount of the GMP that is established for the Work. The GMP will include the Fee of the Construction Manager stipulated in Section 4.1(b), and the General Conditions (indirect costs) of the Construction Manager. When the GMP is established, it will contain a separate line item Guaranteed Maximum Price for Construction Manager site office related support costs. A list of the costs and positions that will be charged to the Owner as general conditions costs will be included as a part of the GMP and will be incorporated herein by reference. The maximum paid by the Owner for the Work to be performed by or through the Construction Manager is guaranteed by the Construction Manager not to exceed the Guaranteed Maximum Price. However, such Guaranteed Maximum Price shall be increased or decreased as provided in Section 9.3.

Section 4.1(b). Fee of the Construction Manager. As consideration of the full and complete performance of all of the Work, the Owner agrees to pay the Construction Manager, in current funds as compensation in full, a fee for Pre-Construction Services in the amount of \$ [REDACTED] (\$XXXX) and a fee for Construction Services in the amount of

\$ (XXXXX), both of which are collectively hereinafter referred to as the “Construction Manager’s Fee”. The Construction Manager’s Fee includes all compensation and profit of any description of Construction Manager for the Project, which the Owner is obligated to pay the Construction Manager in connection with or growing out of the Work. The Construction Manager's Fee shall be paid periodically and in accordance with the procedure established in Section 4.2. During the Construction Phase, the portion of the Construction Manager’s Fee earned in any given pay period shall be calculated as follows:

$$\frac{\text{Cost of Work in Pay Period XX}}{\text{Total of Guaranteed Maximum Price}} = \text{\% of Construction Manager's Fee earned for pay period}$$

Less the Fee

During the Pre-Construction Phase, the Construction Manager’s Fee shall be paid in accordance with an agreed upon schedule.

Section 4.1(c). Cost of the Work. Cost of the Work shall mean costs, excluding the Fee of the Construction Manager, necessarily incurred in the proper performance of the Work. Such costs shall not be higher than the standard paid in the locality of the Project except with prior written consent of the Owner, and shall include but not be limited to the items set forth below in this Section 4.1(c). (The total Cost of the Work shall not exceed the Guaranteed Maximum Price for the Work as reflected in Exhibit “E”, except for duly authorized Change Orders and Change Instructions):

- (i) Wages paid for labor in the direct employ of the Construction Manager in the performance of the Work.
- (ii) Salaries of Construction Manager's personnel including in some instances travel and subsistence when stationed permanently at the field office, provided such costs are approved in writing by the Owner, the costs of personnel engaged at shops or on the road in expediting the production or transportation of materials or equipment for the Project.
- (iii) Cost of contributions, assessments or taxes incurred during the performance of the Work for such items as unemployment compensation and social security, insofar as such cost is based on wages, salaries, or other remuneration paid to employees of the Construction Manager and included in the Cost of the Work.
- (iv) Cost of all materials, supplies, products and equipment incorporated in the Work, including costs of transportation and storage thereof.
- (v) Payments made by the Construction Manager to Trade Contractors for Work performed pursuant to Trade Contracts under this Agreement.
- (vi) Rental charges of all necessary machinery and equipment, exclusive of hand tools, used on the site of the Work, whether rented from the Construction Manager or others, at rental charges consistent with those prevailing in the area. Owner shall not be liable to Construction Manager

for any costs for Construction Manager owned equipment, except for a reasonable rental charge for any owned equipment used by Construction Manager in the performance of the Work. For any equipment owned by the Construction Manager, including any related or subsidiary corporation or company, and used on the Project the Construction Manager shall be reimbursed at rental charges consistent with those prevailing in the area. At any time that the sum of the costs reimbursed to the Construction Manager for any Construction Manager owned equipment exceeds seventy percent (70%) of the cost of such equipment, the Construction Manager shall not be entitled to any further reimbursement for the cost of the use of such equipment regardless of whether or not the equipment is used thereafter on the Project.

(vii) Cost of premiums of all insurance and bonds.

(viii) Sales, use or similar taxes related to the Work and for which the Construction Manager is liable and which tax is imposed by any governmental authority.

(ix) Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, copying, office equipment and supplies, expressage and similar petty cash items in connection with the Work.

(x) Cost of removal of all debris.

(xi) Costs incurred due to an emergency affecting the safety of persons and property, caused by someone other than the Construction Manager or its Trade Contractors.

(xii) Construction Manager site office related support cost.

(xiii) Construction Manager shall turn over to the Owner at the end of the Project all equipment purchased in connection with the Project (computers, copiers, fax machines, trucks, etc.) provided that such equipment has been paid for as a Cost of the Work. At the end of the Project the Owner shall be entitled to, but not required to, assume any lease purchased equipment that has been paid for by the Owner as a Cost of the Work or at the discretion of the Owner, Construction Manager will submit to Owner a credit of the fair market value of said equipment.

Section 4.1(d). Cost Not to be Paid by Owner. Cost of the Work shall not include any of the items set forth below in this Section 4.1(d).

(i) Salaries or other compensation of the Construction Manager's personnel at the Construction Manager's principal office and branch offices except for personnel time directly related to the project as approved in writing by the Owner which approval will not be unreasonably withheld.

(ii) Expenses of the Construction Manager's principal and branch offices other than the field office at the site of the Work.

(iii) Any part of the Construction Manager's capital expenses, including interest on the Construction Manager's capital employed for the Work.

(iv) Except as specifically provided for herein, or in modifications hereof, rental costs of machinery and equipment or cost of Construction Manager owned equipment.

(v) Home office overhead or general corporate expenses of any kind, except as expressly approved by the Owner in writing.

(vi) Costs due to the fault or negligence of the Construction Manager, any Trade Contractor, anyone directly or indirectly employed by any of them, or for whose acts any of them may be liable, including but not limited to, the correction of damaged, defective or nonconforming Work, disposal of materials and equipment wrongly supplied, or making good any damage to property.

(vii) Any cost not specifically and expressly included in Section 4.1(c), unless mutually agreed upon in writing.

(viii) Costs in excess of the Guaranteed Maximum Price.

Section 4.2. Payment Procedure. Progress payments shall be made by the Owner to the Construction Manager in accordance with the following procedure:

(a) On the twenty-fifth day of each calendar month during the performance of the Work or the preceding working day if the first is a Saturday, Sunday or holiday, the Construction Manager shall submit to the Owner an Application and Certificate for Payment, based on the Work completed during the preceding month, using the form approved by the Owner. Payment shall be based upon the Cost of the Work completed and the Fee earned during the pay period.

(b) Each Application and Certificate for Payment shall be in a form acceptable to Owner and, if requested by the Owner, be accompanied by 1) copies of invoices from the Trade Contractors, suppliers, materialmen and vendors of the Construction Manager; 2) Lien Waivers from the Construction Manager and all Trade Contractors; and 3) other documentation as may be requested by the Owner for its proper review of the Application and Certificate for Payment.

(c) The Owner shall promptly review each Application and Certificate for Payment and approve it for such amount as is properly due under the Contract Documents.

(d) Payment shall be made on or before thirty (30) days after receipt of application by Owner's designated representative.

Section 4.3. Retainage.

(a) In making progress payments pursuant to **Section 4.2**, the Owner shall retain five percent (5%) of the approved amount of any Application and Certificate for Payment. Such retained amounts shall not be due and payable to the Contractor until Final Completion of the Work by the Contractor and Final Acceptance, as defined in **Section 4.7** of this Agreement, of the Work by the Owner. Periodic reductions in the amount of retainage will be permitted by the Owner if deemed

appropriate to the state of contract completion. The contractor may retain from each subcontractor a percentage no greater than that retained by the Owner.

- (b) For Contract values of \$500,000 or greater, the retained funds will be deposited in a separate interest-bearing escrow account with a third-party bank established by the Owner. The Contractor must submit the signed document contained in Exhibit "H" at the time he submits his signed contract to the City. If the Contractor fails to submit the document at the time of contract submission to the City, the City will not execute a construction contract with the Contractor.
- (c) By signing this Agreement, the Construction Manager expressly waives the right to file or assert any and all liens, claims, encumbrances, security interests or other rights that might arise pursuant to, Tennessee Law. As a condition precedent to subcontracting for any portion of the Work, the Contractor shall first obtain a similar universal Waiver of Lien in writing from each Trade Contractor, materialman, supplier, lessor, vendor performing services or providing materials or labor in connection with the Work and any other person that could qualify for a Lien, claim, right, encumbrance or other security interest under Tennessee Law.

#### Section 4.4. Payment for Stored Material.

- (a) Payment for the actual unit cost of materials suitably stored on the site of the Work and intended for incorporation in the Work may be made at the discretion of the Owner to the Construction Manager subject to the procedures set forth in Section 4.2 and the following conditions:
  - (i) The Construction Manager shall furnish supporting evidence satisfactory to the Owner evidencing the cost of the materials and shipment to the site of the Project;
  - (ii) The materials shall not be stored for more than forty-five (45) calendar days before they are installed in place unless specifically approved by the Owner;
  - (iii) The materials shall be stored in accordance with applicable recommendations of the manufacturer and the instructions of the Owner;
  - (iv) All materials delivered to the site of the Work shall be stored and handled so as to preclude inclusion of any foreign substances, and to prevent any discoloration or damage which might reduce the effectiveness of the materials as part of the Work;
  - (v) Payment for stored materials will be subject to retainage as defined in Section 4.3;
  - (vi) The representative of the Owner may review and inventory any stored materials; and
  - (vii) No payment will be made for stored material unless such material is specially manufactured for the Project. For example, no payment will be made for material that is commercially available such as conduit, sheetrock, piping, etc.

(b) Payment will not be made for materials stored off the site of the Work unless approved in writing by the Owner.

(c) Notwithstanding anything herein to the contrary, if payments are to be made on account of materials or equipment not incorporated in the Work but delivered and suitably stored on or off the site of the Work, such payments shall be conditioned upon submission by the Construction Manager of bills of sale or such other documentation satisfactory to the Owner to establish the title of the Owner to such materials or equipment, and the submission of satisfactory insurance certificates for the stored materials to protect the interest of the Owner.

Section 4.5. Use of Payments. The Construction Manager shall use all sums paid to it pursuant to this Agreement for the performance of the Work in accordance with the Contract Documents. Upon the request of the Owner, the Construction Manager shall furnish satisfactory proof as to the disposition of any monies paid to the Construction Manager by the Owner; provided, however, no provision shall be construed to require the Owner to see to the proper distribution, disposition or application of the monies paid to the Construction Manager.

Section 4.6. Payment Not a Waiver. Neither the approval or making of any payment to the Construction Manager, nor the partial or entire use or occupancy of the Project by the Owner shall be an acceptance of any portion of Work, and/or construed as a waiver of any term or condition of this Agreement and/or the Contract Documents.

Section 4.7. Final Payment.

(a) Final Payment by the Owner shall constitute a waiver of all claims by the Owner for performance of the Work except for claims of the Owner arising from unsettled liens, incomplete or defective workmanship, defective materials, failure to perform in accordance with the progress schedule, or for the breach of any guarantees or warranties provided by the Construction Manager under this Agreement. Acceptance of the Final Payment by the Construction Manager shall constitute a waiver and a universal complete release and discharge of any and all claims, which the Construction Manager may then have or in the future have against the Owner arising from the Project or this Agreement, except those asserted in writing by Construction Manager prior to final payment.

(b) Final Acceptance of the Work shall occur only after all Work (including punch list items) provided for in the Contract Documents has been finally completed and accepted in writing by the Owner, and only after the Construction Manager has provided the Owner with instructions and operating manuals, warranties, parts lists, "as-built" drawings and all other items required by the Contract Documents and this Agreement.

(c) Neither the Final Payment nor the remaining retainage shall become due until the Construction Manager submits to the Owner the following:

(i) An affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or its interest in the property and the Project might in any way be responsible, have been paid or otherwise satisfied;

- (ii) A consent of surety to Final Payment; and
- (iii) Other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens, arising out of the Work, to the extent and in such form as may be designated by the Owner.
- (d) If any Trade Contractor refuses to furnish an affidavit, a release or waiver required by the Owner, the Construction Manager shall furnish a bond in an amount and with a surety company satisfactory to the Owner to defend, indemnify and hold the Owner harmless against any such lien. If any such lien remains unsatisfied after all payments are made, and whether or not such lien is disputed by the Construction Manager, the Construction Manager shall refund to the Owner all monies that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees incurred by Owner.

Section 4.8. The Right of Owner to Withhold Payment. The Owner may, on account of subsequently discovered evidence, withhold or nullify the whole or part of any payment, including Final Payment, and withhold retainage, to such extent as may be necessary to reasonably protect itself from any of the following:

- (a) Defective work not remedied;
- (b) Third-party claims for payment or liens filed or reasonable evidence indicating the probable filing of such claims or liens;
- (c) Reasonable doubt that the unpaid balance of the Guaranteed Maximum Price is sufficient to compensate the Owner for liquidated damages which may be due to the Owner;
- (d) Failure of the Construction Manager to make payments properly due to Trade Contractors pursuant to any applicable Trade Contract or purchase order or failure of the Trade Contractors to make payment properly due to sub-subcontractors or failure of the Construction Manager to make payment properly due for equipment, materials or labor;
- (e) Evidence of fraud, over-billing or overpayment discovered upon audit;
- (f) Failure of the Construction Manager to prosecute the Work in accordance with the Contract Documents;
- (g) A reasonable doubt that the Work can be completed for the unpaid balance of the Guaranteed Maximum Price as defined herein; or
- (h) Actual damage to the Owner or another contractor, Trade Contractor or sub- subcontractor caused by the Construction Manager.



## ARTICLE 5

### EQUIPMENT AND MATERIALS

#### Section 5.1. Materials Provided by Construction Manager.

- (a) Unless otherwise provided in the Contract Documents, the Construction Manager shall provide and pay as a cost of the Work for all equipment, materials, labor, water and power to the site of the Work, as well as all tools, equipment, light, transportation, and other facilities necessary for the performance of the Work.
- (b) All equipment, machinery, material, and articles incorporated in the Work shall be of good quality and new, and when not specified in detail in the Contract Documents, the same shall be of the most suitable grade and quality for the purpose intended.
- (c) All materials delivered to the site of the Work shall be stored and handled as to preclude inclusion of any foreign substances, and to prevent any discoloration or damage which might reduce its effectiveness as part of the Work.

#### Section 5.2. Type of Equipment Used.

- (a) When any equipment, material or article is referred to by trade name, make or catalog number followed by the words “or equal”, the reference shall be regarded as establishing the standard of quality and performance required and shall not be construed as limiting competition. The Construction Manager may, with the prior written approval of the Owner, use other equipment, materials or articles which are equal in quality and performance to that named in the Contract Documents; provided, however, that in no event shall such approval be construed as a waiver of the right of Owner to require equipment, materials or articles which conform to the standard of quality and performance established by reference to the trade name, make or catalog number of the equipment, materials or article for which the situation has been approved.
- (b) The name of the manufacturer, model number and other identifying information respecting the performance, capacity, nature and rating of equipment, material and articles proposed in substitution of those specified in the Contract Documents shall be submitted in sufficient time to avoid delays to the Work. Where items of machinery, equipment, materials and articles are specified by trade name, make or catalog number and not followed by the words “or equal” they shall be furnished as specified and substitution will not be permitted. The Construction Manager expects to have three (3) or more manufacturers specified. The GMP will be based upon three (3) or more manufacturers unless the Construction Manager is advised otherwise before the GMP is established. If this is changed after the GMP is established then the Construction Manager will be entitled to an increase in the GMP through the Change Order procedure.

#### Section 5.3. Nonconforming Materials.

- (a) Equipment, machinery, products, materials or articles installed or used in the Work which do not comply with the requirements of the Contract Documents, and which have not been

previously approved in writing by the Owner shall be installed or used at the risk to the Construction Manager of subsequent rejection by the Owner.

(b) The Construction Manager shall be fully and solely responsible for quality control in connection with all materials, machinery, equipment, products, and articles used in the performance of the Work.

Section 5.4. Owner Furnished Equipment or Fixtures. The Owner may directly furnish any or all of the equipment or fixtures required for the Work. In the event the Owner elects to do so, and provided the cost of such equipment or fixtures was included in the Guaranteed Maximum Price the fee of Construction Manager shall not be adjusted, but the Guaranteed Maximum Price for such equipment or fixtures as reflected in Exhibit "E" will be reduced by the cost for any equipment being furnished by Owner. A Change Order reducing the Guaranteed Maximum Price shall be executed by the Owner and Contractor to reflect a reduction in the Guaranteed Maximum Price. The Construction Manager shall be fully responsible for the care, custody and control of all Owner furnished equipment which is installed or to be installed by the Construction Manager once said equipment arrives on the job site or in any off-site storage facility mutually acceptable to Owner and Construction Manager.

## **ARTICLE 6**

### **"AS-BUILT" DRAWINGS AND DATA**

Section 6.1. "As-Built" Drawings. A complete set of drawings shall be maintained by the Construction Manager at the construction site for the purpose of showing "as-built" conditions. The drawings shall be kept up-to-date and marked each day to show all changes and variations and each entry shall be dated and verified as made. At the end of the project, the Construction Manager shall furnish to the Consultant the "as-built" drawings for incorporation into the design documents. Reproducible tracings of "as-built" drawings shall be furnished to the Owner by the Construction Manager at the end of the project. At the completion of the Work and prior to Final Payment, a complete set of reproducible "as-built" drawings shall be provided to the Owner.

Section 6.2. Operation and Maintenance Data and Training.

(a) The Construction Manager shall furnish complete and necessary data for the operation, repair and maintenance of each operating component of the Work (herein the "Data"). The Data shall include prints of shop drawings, "as-built" conditions, sources of equipment and principal materials, specified tests and performance data, repair and maintenance data, lubrication instructions and recommendations, parts lists, and other catalog data or information required to operate and maintain any part of the Work. Care shall be taken to include all pertinent data and to exclude inapplicable or duplicate information.

(b) Prior to Final Payment, three (3) complete sets of the Data shall be provided to the Owner indexed alphabetically by components grouped together and securely bound in a durable folder or binder that is labeled and indexed to show its contents.

(c) Installation information for all machinery and equipment also shall be kept on the site of the Work during construction, but used or marked prints or data sheets are not to be used in assembling the final maintenance and operating manuals described in Paragraph (b).

(d) Prior to Final Payment, three (3) complete sets of properly indexed warranties shall be provided to the Owner.

(e) The Construction Manager shall provide to Owner any and all start up assistance, operational and maintenance training as required by Owner for its use and operation of the Project as set forth in the Contract Documents.

Section 6.3. Information From Suppliers. The Construction Manager shall make it a requirement or condition of purchase from its suppliers of equipment and/or materials (1) to furnish complete and adequate operating and maintenance data pertaining to their equipment, (2) to assign to the Owner any warranty, express or implied, furnished by the manufacturer of the equipment, and (3) to assign to the Owner any customary maintenance or repair service, spare parts supply service, or personnel support service furnished by the manufacturer of the equipment. If the terms and conditions of any warranty, maintenance or repair service, spare parts supply service, or personnel support service furnished by the manufacturer of the equipment are negotiable, they shall be negotiated by the Owner and the manufacturer. The Construction Manager shall also advise the Owner in advance of placing any order for equipment if the warranty furnished by the manufacturer commences upon purchase, shipment or installation of such equipment.

## ARTICLE 7

### TRADE CONTRACTS

#### Section 7.1. Definitions.

(a) As used in the Contract Documents, a “Trade Contractor” is a person or organization that has a contract with the Construction Manager to perform any portion of the Work, or to furnish any product, article, machinery, equipment or materials to the Work.

(b) As used in the Contract Documents, a “Sub-subcontractor” is a person or organization that has a direct or indirect contract with a Trade Contractor to perform any portion of the Work, or to furnish any product, article, machinery equipment or materials to the Project.

Section 7.2. No Contractual Relationship With Owner. Nothing contained in the Contract Documents or otherwise shall create any contractual relationship between the Owner and any Trade Contractor or sub-subcontractor, and no Trade Contract or sub-subcontract shall relieve the Construction Manager of its responsibilities and obligations should any Trade Contractor or sub-subcontractor fail to perform the Work in a satisfactory manner. The Construction Manager is fully responsible to the Owner for the acts and omissions of its Trade Contractors and their sub-subcontractors and of persons either directly or indirectly employed by them.

Section 7.3. Award of Trade Contracts. The Construction Manager shall secure public bids from Trade Contractors in accordance with the bid procedures and criteria approved by Owner. These procedures and criteria are generally described in Exhibit "F", which is attached hereto and incorporated herein by reference.

(a) Unless otherwise specified in the Contract Documents, the Construction Manager within twenty-four (24) hours after receipt of final bids for any part of the Work, shall furnish to the Owner in writing a list of names of the Trade Contractors and sub-subcontractors proposed for any portion of the Work. The list shall include amounts of all bids, the Owner shall notify the Construction Manager in writing if, after due investigation, it objects to any Trade Contractor or sub-subcontractor in which event the bid of such Trade Contractor or sub-subcontractor shall not be considered. In which case, the Owner will upon proof by the Construction Manager that the Construction Manager will incur additional expense caused by the Owner's objection to a Trade Contractor or a sub-subcontractor pay the difference in the bid prices as a Cost of Work and increase the Guaranteed Maximum Price provided the substitution was not caused by an anticipated default of the Construction Manager's original Trade Contractor.

(b) The Construction Manager shall not contract with any Trade Contractor (nor shall they contract with any sub-subcontractor) or any person or organization (including those who are to furnish materials or equipment) proposed for portions of the Work designated in the Contract Documents or, if none is so designated, with any subcontractor proposed for principal portions of the Work who has not been previously approved in writing by the Owner.

(c) If the Owner, at the time the Construction Manager presents Trade Contractor bid list for approval, refuses to accept any Trade Contractor (or sub-subcontractor) or person or organization submitted by the Construction Manager, the Construction Manager shall submit an acceptable substitute and any increase due to the new substitute shall be reflected in the GMP.

(d) Either prior to or subsequent to the execution of this Agreement, Owner reserves the right to enter into a contract or contracts with entities to perform part of the Work normally performed by Trade Contractors. In such event, Owner and Construction Manager agree that such contracts may be assigned to Construction Manager to establish the relationship of Construction Manager and Trade Contractor between Construction Manager and such entities. Construction Manager shall accept, in all respects, responsibility for such entities as Trade Contractors provided such Trade Contractors are technically qualified and are financially viable. To the extent such assigned Trade Contracts affects the Guaranteed Maximum Price, a Change Order shall be issued by Owner to modify Guaranteed Maximum Price unless the assignment of the Trade Contract was caused by a default of the Construction Manager's original Trade Contractor. The Construction Manager's Fee shall not be modified in the event of any such assignments.

Section 7.4. Change of Trade Contractors. The Owner may require a change of any Trade Contractor. Should the Owner direct a change of any Trade Contractor, the Guaranteed Maximum Price shall be increased or decreased by the difference in cost occasioned by said direction. Notwithstanding anything herein to the contrary, should the Owner disqualify or disapprove of any Trade Contractor, any sub-subcontractor, any supplier, any laborer, or any other person directly or indirectly related to the Work ("Disqualified Entity") then the Construction Manager

agrees to terminate, and any costs associated with the termination, including but not limited to attorney fees and legal costs should be paid by the Owner. A substitute shall be made by the Construction Manager for the Disqualified Entity at no cost to Owner.

Section 7.5. No Substitution of Trade Contractors. The Construction Manager shall not make any substitution for any Trade Contractor nor allow the substitution of any sub-subcontractor who has been accepted by the Owner, unless the substitution is required and previously approved by the Owner. The Owner shall be under no duty to approve the substitution of a Trade Contractor.

Section 7.6. Trade Contract Terms and Conditions. All portions of the Work performed by a Trade Contractor or sub-subcontractor shall be pursuant to a written agreement between the Construction Manager and the Trade Contractor (and where appropriate between Trade Contractors and sub-subcontractors) which shall contain provisions that:

- (a) Preserve and protect the rights of the Owner under the Contract Documents with respect to the portion of the Work to be performed under the Trade Contract (or sub-subcontract) so that the subcontracting will not prejudice such rights;
- (b) Require that all Work be performed in accordance with the requirements of the Contract Documents;
- (c) Require submission to the Construction Manager of applications for payment under each Trade Contract to which the Construction Manager is a party;
- (d) Require that all requests for additional compensation or extensions of time be submitted to the Construction Manager (via any Trade Contractor or sub-subcontractor where appropriate) in sufficient time so that the Construction Manager may comply in the manner provided in the Contract Documents for like requests by the Construction Manager upon the Owner; and
- (e) Obligate each Trade Contractor or sub-subcontractor to consent to the provisions of Sections 3.2, 3.3, 3.4, 3.5, 7.4, 16.1, 21.1, 21.2, and 21.3.

## ARTICLE 8

### PAYMENT TO TRADE CONTRACTORS FROM CONSTRUCTION MANAGER

Section 8.1. Payments to Trade Contractors From the Construction Manager. The Construction Manager shall pay each Trade Contractor an amount equal to the percentage of completion allowed to the Construction Manager on account of the work of such Trade Contractor, less the percentage retained from payments to the Construction Manager. The Construction Manager shall also require each Trade Contractor to make similar payments to its sub-subcontractors.

Section 8.2. Independent Obligation to Pay. The obligation of the Construction Manager to pay its Trade Contractors (and the Trade Contractor's obligation to pay Sub-subcontractors) on a pay

when paid basis, is an independent obligation from the obligation of the Owner to make payment to the Construction Manager. The Owner shall have no obligation to pay or to see to the payment of any monies to any Trade Contractor, sub-subcontractor, supplier or vendor.

## ARTICLE 9

### CHANGES

#### Section 9.1. Changes in The Work.

(a) The Owner, without invalidating the Agreement, may order extra Work or make changes by altering, adding to or deducting from the Work by executing a Change Order, Construction Change or Change Instruction in a form provided by the Owner. All work performed pursuant to a valid Change Order, Construction Change or Change Instruction shall be performed under the terms and conditions of the Contract Documents. Changes in the scope of work which would entitle the Construction Manager to an increase in the GMP would be any change in any of the following:

- (i) Quality;
- (ii) Quantity;
- (iii) Function; or
- (iv) Materials.

(b) The Owner shall have authority to make changes in the Work not involving extra cost, and not inconsistent with the purposes of the Project, but otherwise, no extra Work or change in the Work shall be made unless pursuant to a written Change Order, written Construction Change or written Change Instruction. No claim by Construction Manager for additional compensation, cost or fee or any extension of the Substantial Completion Date shall be valid unless so ordered in a written Change Order, written Construction Change or written Change Instruction.

(c) The Owner has established an Owner's contingency budget to order extra work outside the GMP which shall be used to fund certain changes known as "Construction Changes" (hereinafter referred to as "Construction Change"). Any Construction Change performed hereunder shall not increase or decrease the Guaranteed Maximum Price for the Work in Exhibit "E" or the Construction Manager's Fee established in Section 4.1(b).

Section 9.2. Change Order Procedure. Upon receipt of a request from the Owner for extra Work or changes in the Work, the Construction Manager shall furnish to the Owner a statement setting forth in detail the proposal of the Construction Manager for performing the extra Work or changes and the effect of the extra Work or changes, if any, on the Guaranteed Maximum Price and the Substantial Completion Date. If the Owner approves in writing the proposal of the Construction

Manager, a Change Order in the form provided by the Owner shall be executed by the parties and the Guaranteed Maximum Price and the Substantial Completion Date shall be adjusted in accordance with Section 9.3.

Section 9.3. Changes in Guaranteed Maximum Price.

(a) Increases in the Scope: The increase in the Guaranteed Maximum Price reflected in **Exhibit "E"** attributable to a Change Order and/or Construction Change performed by the Construction Manager or any of its Trade Contractors shall not exceed the sum of the following:

(i) The actual labor cost to Construction Manager to perform the Change Order and/or Construction Change including insurance and taxes;

(ii) The actual unit cost of materials, supplies, products, equipment and rental equipment used in performing the Change Order or Construction Change, including sales taxes;

(iii) The actual cost of Trade Contractors to perform the Change Order, including insurance and taxes;

(iv) The actual cost for additional bonds including Trade Contractor bonds, if applicable;

(v) The Construction Manager shall, as a part of its Trade Contract Agreement, require that no more than ten percent (10%) of the total of sub-paragraph iii be charged by a Trade Contractor for profit and overhead on any Change Order or Construction Change Work performed by the Trade Contractor. Trade Contractors shall not be entitled to charge profit and overhead on insurance, taxes or bond premiums. In the event change order work is performed by a second or lower tier Trade Contractor, profit and overhead on such work shall be limited to five percent (5%) for the Trade Contractors in the tiers above the entity performing the work; and

(vi) The Construction Manager's fee shall be increased in the amount of five percent (5%) of the total of (i) through (v) above.

(b) Decreases in the Scope: The decrease in the Guaranteed Maximum Price reflected in **Exhibit "E"** attributable to a Change Order or Construction Change deleting a portion of the scope of Work shall equal the sum of the following:

(i) The actual labor cost that the Construction Manager would have incurred to perform the scope of Work deleted in the Change Order or Construction Change including the cost of overhead, profits, insurance and taxes;

(ii) The actual unit cost of materials, supplies, products, equipment and rental equipment that the Construction Manager would have used in performing the scope of Work deleted in the Change Order or Construction Change, including sales taxes;

(iii) The actual cost of Trade Contractors and sub-subcontractors that the Construction Manager would have incurred in performing the Scope of Work deleted in the Change Order or Construction Change, including overhead, profits, insurance and taxes;

(iv) A decrease to the Construction Manager's Fee in the amount of five percent (5%) of the total of subparagraphs (i), (ii) and (iii); and

(v) To the extent allowed by the Bonding Company, the actual credit for the cost associated with the lower limits required for the bonds including Trade Contractors and sub-subcontractors bonds, if applicable, as a result of the reduction in the scope of the Work.

Section 9.4. Change Instruction. In the event that the Owner and the Construction Manager cannot agree on the amount of compensation or time extension, if any, due to the Construction Manager for a Change Order or Construction Change pursuant to **Section 9.2**, the Owner may direct the Construction Manager to proceed with the performance of the Change Order or Construction Change Work by a Change Instruction. In such event, the Construction Manager will proceed with the Change Order Work or Construction Change and the Construction Manager's compensation will be calculated pursuant to the provisions of **Section 9.3**.

Section 9.5. Unconditional Obligation to Proceed. Notwithstanding anything herein to the contrary, the Construction Manager will proceed with the Work so as to complete the Work on or before the Substantial Completion Date even if it has a dispute with the Owner concerning the amount to be paid under **Section 9.3** or any extension of time which is or could be due to the Construction Manager pursuant to a Change Order, Construction Change, a Change Instruction or otherwise.

## **ARTICLE 10**

### **THE UNDERSTANDING OF THE CONSTRUCTION MANAGER**

#### **Section 10.1. Examination of Work Site.**

(a) The parties acknowledge that pre-contract conditions did not allow the Construction Manager to carefully examine, and satisfy itself as to the soil and hidden site conditions, the character, quality and quantity of the materials, equipment and facilities needed preliminary to and during the prosecution of the Work, and other matters which could reasonably affect the Work.

(b) Owner will obtain certain geotechnical data, soil and subsurface tests and other soil engineering tests and reports in areas where the Work is to be performed for the purpose of study and design, and will make such data, tests and reports available to Construction Manager on request.

#### **Section 10.2. Sufficiency of Contract Documents.**



(a) The Construction Manager acknowledges that when the Guaranteed Maximum Price is established, the Contract Documents will be sufficient to enable it to construct and determine the Cost of all of the Work and that the Work will be able to be completed in accordance with the Contract Documents for the Guaranteed Maximum Price.

(b) The Construction Manager acknowledges that any discrepancies, omissions, ambiguities or conflicts in the Contract Documents discovered or which should have reasonably been discovered by the Construction Manager will be brought to the attention of the Owner, as set forth in **Paragraph 2.3** of this Agreement, and in a timely manner in order to insure Substantial Completion of the Work by the Substantial Completion Date. In addition, the Construction Manager acknowledges that the Owner has not made nor shall it be deemed to have made any warranties, guarantees or representations of any kind whatsoever regarding the sufficiency of the Contract Documents or any other matter, including site conditions, relating to the Project.

(c) The Owner shall be responsible for any damages resulting from any errors, inconsistencies or omissions in the Contract Documents which were discovered or observed by the Construction Manager.

Section 10.3. No Oral Modification. No oral agreement or conversation with any officer, agent or employee of the Owner or its representatives, either before or after the execution of this Agreement shall affect or modify any of the terms or obligations contained in this Agreement or the Contract Documents. No extra compensation will be due from the Owner as a result of the Construction Manager not being aware of any matter that might affect the Work. The silence, action or failure to act by the Construction Manager or the Owner shall not affect or modify any of the terms or obligations contained in this Agreement or the Contract Documents.

## ARTICLE 11

### THE REPRESENTATIVE OF THE OWNER

Section 11.1. The Representative of The Owner. The Representative of the Owner is designated the Consultant's on-site representative and shall have general control of the Work through the Project Manager of the Construction Manager. The Representative of the Owner shall have full authority to stop the Work whenever in the best judgment of the Representative of the Owner, such stoppage may be necessary to insure the proper execution of the Work. The Representative of the Owner shall have authority to reject any Work and materials which do not conform to the Contract Documents, and to decide questions which arise during the execution of the Work. The Representative of the Owner shall also designate in writing all persons affiliated with the Owner who are authorized to have access to the Work. Upon written notice, the Owner shall have the right to replace the Representative of the Owner at any time with or without cause.

Section 11.2. Decisions of the Owner. Upon the written request of the Construction Manager for a decision by the Owner, the Representative of the Owner shall, promptly render a decision in writing on all matters relating to the execution of the Work or the interpretation of the Contract

Documents. All decisions by the Representative of the Owner shall be final. In the event of a disagreement, the matter will be resolved in accordance with the City of Memphis dispute procedure as set forth in Exhibit "I".

## ARTICLE 12

### SUPERVISION OF THE WORK

Section 12.1. The Project Manager of the Construction Manager. The Construction Manager shall designate in writing to the Owner and keep on the Work during its progress a competent Project Manager and Superintendent satisfactory to the Owner. The designated Project Manager and Superintendent shall be assigned to the Project from the date of the Notice to Proceed until the date of Substantial Completion hereunder. The Project Manager and Superintendent shall be changed upon written request of the Owner but shall not be changed by the Construction Manager except with the consent of the Owner, unless the Project Manager ceases to be in its employ. The Project Manager shall represent the Construction Manager and all directions given to him by the Owner shall be binding as if given to the Construction Manager directly. The Project Manager shall devote full time to the Work and the Construction Manager shall maintain an office on the site of the Work. He shall direct, coordinate and supervise all Work, inspect all materials delivered to the Project to ascertain whether or not they comply with the requirements of the Contract Documents, and reject all nonconforming materials or workmanship.

Section 12.2. Owner's Right to Review The Work.

(a) The Owner and persons designated by the Owner shall at all times have access to the Work whenever it is in preparation or progress and the Construction Manager shall provide proper facilities for such access and for a detailed review of the Work by the Owner. If the Owner discovers any defective Work in connection with any review, it shall report such defective Work to the Construction Manager and the Construction Manager shall, at its cost, correct the defective Work.

(b) If the Contract Documents, the written instructions of the Owner, laws, ordinances, rules or regulations, or any public authority require any of the Work to be specifically tested or inspected, the Construction Manager shall give the Owner timely notice of its readiness for inspection and testing, and if the test or inspection is performed by an authority other than the Owner, of the date set for such test or inspection. Inspections by the Owner shall be promptly made so as not to delay the work and, where practicable, at the source of supply. If any of the Work should be covered up without the approval or consent of the Owner or any necessary authority, it shall be uncovered for examination, if required by the Owner or such other authority, at the sole expense of the Construction Manager.

(c) Re-examination of questioned Work that has been previously inspected by the Owner may be ordered by the Owner and, if so ordered, the questioned Work shall be uncovered by the Construction Manager. If such Work is found to be in compliance with the Contract Documents, the Owner shall pay the actual documented and verified cost of the re-examination. If such Work is found not to be in compliance with the Contract Documents, the Construction Manager shall bear the costs of the re-examination.

## **ARTICLE 13**

### **THE RIGHT OF THE OWNER TO AUDIT**

Section 13.1. Right to Audit. The Construction Manager shall keep full and accurate records of all costs incurred and items billed in connection with the Work, which records shall be open to audit by the Owner, or any authorized representative for the Owner, during the course of the Project and until three (3) years after the Final Payment by Owner. In addition, the Construction Manager shall make it a condition of all non-Lump Sum/Fixed Price Trade Contracts and sub-subcontracts entered into in furtherance of the Work that any and all Trade Contractors and sub-subcontractors will keep accurate records of costs incurred and items billed in connection with the Trade Contract (or sub-subcontract), and that such records shall be open to audit by the Owner, or any authorized representative of the Owner, during the course of the Work of the Trade Contractor (or sub-subcontractor) and until three (3) years after Final Payment by the Owner to the Construction Manager.

Section 13.2. Review of Trade Contracts. The Construction Manager shall provide the Owner with an executed copy of all Trade Contracts, sub-subcontracts and purchase orders entered into in furtherance of the Work.

## **ARTICLE 14**

### **SEPARATE CONTRACTS**

Section 14.1. The Right of The Owner to Award Separate Contracts. The Owner reserves the right to award other contracts in connection with the Project at or in the vicinity of the Project and the Construction Manager agrees to cooperate fully and not to unreasonably interfere with the work of such other contractors. The Owner shall use its best efforts to cause its other contractors to cooperate fully and not to unreasonably interfere with the work of the Construction Manager or the Trade Contractors.

Section 14.2. Cooperation. The Construction Manager shall afford the other contractors of Owner the opportunity for the introduction and storage of their materials, products and equipment and the execution of their work, and shall properly connect and coordinate the Work with the work of other contractors.

Section 14.3. Responsibility for Damage. Should the Construction Manager cause damage to the work or property of any other contractor of the Owner, the Construction Manager shall settle with such other contractor by agreement or arbitration (if appropriate) if the other contractor will so settle. If such other contractor sues the Owner on account of any damage alleged to have been caused in whole or in part by the Construction Manager, it is understood the Construction Manager's insurance will respond.

## ARTICLE 15

### WARRANTIES OF THE CONSTRUCTION MANAGER

Section 15.1. Warranty of Title. The Construction Manager warrants and guarantees that title to all Work, materials, products and equipment covered by an Application and Certificate for Payment, whether incorporated in the Work or not, will pass to the Owner, free and clear of all liens, security interests or encumbrances (herein "Liens") and that none of the Work, materials, products or equipment covered by an Application and Certificate for Payment will have been acquired by the Construction Manager, or by any other person performing any part of the Work or furnishing materials and equipment for the Work, subject to an agreement under which a Lien is retained by the seller or supplier.

Section 15.2. Special Warranties. When special guarantees or warranties are required by the Contract Documents for specific parts of the Work, the Construction Manager shall procure certified copies of such guarantees or warranties, countersign them and submit them to the Owner in triplicate. Delivery of such guarantees or warranties will not relieve the Construction Manager from any obligations assumed under any provision of this Agreement or the Contract Documents.

Section 15.3. Assignment of Warranties. The Construction Manager hereby assigns to the Owner any and all existing assignable warranties, service life policies and patent indemnities of manufacturers of equipment or items incorporated in the Work. Upon the request of the Owner, the Construction Manager shall give the Owner assistance in enforcing the rights of the Owner arising under such warranties, service life policies and patent indemnities. At the request of the Owner, the Construction Manager shall give notice (with copies to the Owner) to any such manufacturers of the assignment of such warranties, service life policies and patent indemnities.

Section 15.4. General Warranty and Correction of Work.

(a) In addition to any special guarantees or warranties contained in the Contract Documents, the Construction Manager warrants to the Owner that all materials and equipment furnished in performance of the Work will be new unless otherwise specified, that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All work not so conforming to these standards shall be considered defective and corrected by the Construction Manager at no cost to the Owner.

(b) The Construction Manager shall promptly correct all defective Work to the standards of this Agreement and the Contract Documents whether observed before or after the Substantial Completion Date and whether or not fabricated, installed or completed. The Construction Manager shall bear all costs of correcting such defective Work.

(c) The Construction Manager shall conduct a walk-through of the Project with the Construction Manager and a representative of Owner for the purpose of identifying those items that qualify for replacement and/or repair under the terms of the general warranty furnished for the Work. Said walk-through shall be conducted approximately eleven (11) months after the Substantial Completion Date for the entire Project. All warranties shall be deemed to commence as of the Substantial Completion Date for the Project, including any portions of the Work occupied or used ahead of schedule by Owner. Owner shall be diligent and immediately notify the Construction Manager at the time any warranty items need replacement and/or repair.

(d) If, within one (1) year from the Substantial Completion Date or any longer period of time as may be prescribed by law or by the terms of any applicable special guarantee or warranty required by the Contract Documents, any of the Work is found to be defective and not in accordance with the Contract Documents, the Construction Manager shall correct it promptly after receipt of a written notice from the Owner to do so.

(e) All defective or nonconforming Work shall, if deemed necessary by the Owner, be removed from the Project if necessary, and the Work shall be corrected by the Construction Manager to comply with the Contract Documents without cost to the Owner. The Construction Manager also shall bear the cost of making good all work of other contractors and Trade Contractors destroyed or damaged by removal or correction of the defective Work of Construction Manager.

(f) If the Construction Manager fails to correct defective Work in accordance with this Section and the Contract Documents, the Owner may correct it and hold the Construction Manager liable for all costs, expenses and damages, including redesign fees, attorney's fees and litigation costs incurred by Owner in correcting it.

## **ARTICLE 16**

### **RIGHT OF THE OWNER TO DO WORK**

**Section 16.1. Right of The Owner to Do Work.** If the Construction Manager should neglect to prosecute the Work properly or fail to do anything required by the Contract Documents, and the Owner does not receive assurances from the Construction Manager of due performance satisfactory to the Owner within seven (7) days after written demand is made, then the Owner may, without prejudice to any other remedy it may have under this Agreement or at law or in equity, make good any deficiencies in the Work and deduct all costs of doing so from the payment then due, retainage held by the Owner or any payment thereafter due the Construction Manager.

Section 16.2. Deduction For Uncorrected Work. If the Owner deems it inexpedient to correct deficiencies in the Work pursuant to Section 16.1, the Owner may deduct the reasonable cost of doing so from the payment then due, any retainage held by the Owner, or any payment thereafter due the Construction Manager, but the making of such a deduction shall in no way be deemed an election of remedies by the Owner.

Section 16.3. Correction of Work Before Final Payment.

(a) The Construction Manager shall promptly remove from the site of the Work all materials, equipment or other items rejected by the Owner as failing to conform to the Contract Documents, whether incorporated in the Work or not, and the Construction Manager shall promptly replace and re-execute the Work to comply with the Contract Documents and without expense to the Owner. In addition, the Construction Manager shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

(b) If the Construction Manager does not remove rejected material, equipment or other items within a reasonable time (as fixed by written notice from the Owner) the Owner may remove such items and store them at the expense of the Construction Manager, or dispose of such material, equipment or other items. If the Construction Manager does not pay the expense of such removal within ten (10) days, the Owner may, upon ten (10) days written notice, sell such items at auction or at private sale and shall account for the net proceeds of such sale, after deducting all the costs and expenses of removal that should have been borne by the Construction Manager.

## ARTICLE 17

### INSURANCE

Section 17.1. Construction Manager's Liability Insurance

- (a) The Construction Manager shall not commence work under this contract until he has obtained all insurance required under this section and such insurance has been approved by the City of Memphis Risk Manager, nor shall the Construction Manager allow any Trade Contractor or sub-subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved by the City.
- (b) Before commencing any work, the Construction Manager shall furnish the City of Memphis Risk Manager with Certificates of Insurance attested by a duly authorized representative of the insurance carrier evidencing that the insurance required hereunder is in force and effect. The theme/title of the project shall also be specified on the Certificate of Insurance.
- (c) The Construction Manager shall be responsible from the time of signing the Contract or from the time of the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind resulting from this work to persons or property. In addition to the liability imposed

upon the Construction Manager on account of bodily injury (including death) or property damage suffered through the Construction Manager's negligence, which liability is not impaired or otherwise affected hereby, the Construction Manager assumes the obligation to protect, defend, indemnify and hold the City, its officers and directors, employees and agents free and harmless from and against any and all losses, penalties, damages, settlements, costs, charges, professional fees or other expenses or liabilities of any kind and character in connection with or arising directly or indirectly out of this contract and/or the performance hereof by act or omission of the Construction Manager, Trade Contractor, sub-subcontractor, or anyone either (1) directly or indirectly employed or (2) under the supervision of any of them in the prosecution of the Work included in this contract.

(d) The Construction Manager, upon award of the contract, shall provide at his own cost and expense the following insurance to the City of Memphis utilizing insurance companies acceptable to the City and licensed in the State of Tennessee, which insurance shall be evidenced by certificates and/or policies as determined by the City.

(i) Each certificate of policy shall require and contain verbatim the following clause:

“THE CITY OF MEMPHIS, ITS OFFICIALS, AGENTS, EMPLOYEES AND REPRESENTATIVES ARE NAMED ADDITIONAL INSURED”

(ii) The additional insured endorsement stating that the City of Memphis, its officials, agents, employees and representatives is additionally insured shall be attached to the Certificate of Insurance and will apply to both general liability and automobile liability.

(e) If any of the insurance requirements are not complied with at their renewal dates, payment to the Construction Manager may be withheld until those requirements have been met, or at the option of the City, the City may pay the renewal premiums and withhold such payments from any monies due the Construction Manager.

Section 17.2. Specific Insurance Requirements

(a) Workers Compensation Insurance: The Construction Manager shall maintain in force Workers' Compensation coverage in accordance with the statutory requirements and limits of the State of Tennessee and shall require all Trade Contractors and sub-subcontractors to do likewise.

Employer's Liability                    \$100,000 Each Accident  
\$500,000 Disease-Policy Limit  
\$100,000 Disease-Each Employee

(b) Automobile Liability Insurance: To be taken out in the name of the Construction Manager as Named Insured and City as an Additional Insured; covering owned, non-owned, and hired vehicles with MINIMUM LIMITS OF:

\$1,000,000 each occurrence - Combined Single Limit

(c) Commercial General Liability Insurance: Comprehensive General Liability Insurance, including Premises and Operations, Contractual Liability, Independent Contractor’s Liability, and Broad Form Property Damage Liability coverage.

Commercial General Liability Insurance: MINIMUM LIMITS of:

\$2,000,000	General Aggregate per Project
\$2,000,000	Products-Completed Operations
\$1,000,000	Personal and Advertising Injury
\$1,000,000	Each Occurrence
\$ 50,000	Fire Damage any one Fire
\$ 5,000	Medical Expense any one Person

(d) Property Insurance: Contractor shall be responsible for maintaining any and all property insurance on their own equipment and shall require all Trade Contractors and sub-subcontractors to do likewise.

(i) Builder’s Risk Coverage: To be taken out in the name of the City and Contractor as their interest may appear.

(ii) An “All Risk” installation floater in the amount of the contract endorsed to contain the following condition: “It is understood and agreed that coverage will cease only when the new construction (including building materials) is accepted by the City.

(iii) Additional coverage and limits may be required based upon the particular services contracted. If such additional coverage is required for a specific contract, those requirements will be described in the “Special Conditions” of the contract specifications.

(iv) The Construction Manager is required to provide copies of the insurance policies upon request.

(e) The Contractor shall provide notice to the Owner within three (3) business days following receipt of any notice of cancellation or material change in the Contractor’s insurance policy from Contractor’s insurer. Such notice shall be provided to the Owner by registered mail, return receipt requested, to the following addresses:

City of Memphis  
Attn: Risk Management Department  
170 N. Main St., 5th Floor  
Memphis, TN 38103

City of Memphis  
City Engineer  
125 N. Main Street, Room 644



Section 17.3. Construction Manager's Insurance Primary: Any coverage applicable to Owner under Construction Manager's insurance policies shall be primary and non-contributing with any insurance maintained by Owner in its own name and on its own behalf. Copies of endorsements to Construction Manager's policies shall be provided to Owner.

Section 17.4. No Cancellation: All insurance obtained by the Construction Manager pursuant to this Article 17, shall be written by insurance companies licensed to do business in the State of Tennessee. All such insurance shall be in form and substance satisfactory to the Owner and shall provide that it will not be subject to cancellation, termination or reduction in coverage except after ninety (90) days prior written notice to the Owner.

Section 17.5. Insurance Certificates: The Construction Manager shall furnish to the Owner prior to commencement of the Work certificates of insurance from insurers with a rating by A.M. Best of A- or better, reflecting policies in force, and shall also provide certificates evidencing all renewals of such policies. Insurers shall retain an A.M. Best rating of A- or better throughout the term of this Agreement and all policy periods herein. Certificates for contractual liability insurance shall specifically acknowledge the provisions of **Section 17.2.**

Section 17.6. The Right of the Owner to Maintain Insurance: In the event the Construction Manager fails to furnish and maintain the required insurance, to furnish certificates of insurance, or to furnish certified policy copies after written request by the Owner, the Owner shall have the right, at its option, to terminate this Agreement or to take out and maintain such insurance, and hold the Construction Manager liable for the cost. Compliance by the Construction Manager with the requirements of this Section 17 shall in no way relieve the Construction Manager from liability by it under any provision of this Agreement or the Contract Documents.

Section 17.7. No Limitation of Liability. Nothing in this Agreement, including any Owner or Construction Manager furnished insurance, is to be construed as either a limitation or release of the Construction Manager's liability to the Owner.

## **ARTICLE 18**

### **SURETY BONDS**

Section 18.1. Surety Bonds Required.

(a) The Construction Manager shall furnish a performance bond in an amount equal to one hundred percent (100%) of the Guaranteed Maximum Price as security for the faithful performance of the contract for the payment for labor and material furnished and incorporated into the work. The only acceptable form of instrument for this bond is bound herein as **Exhibit "J"**. Bond shall

be furnished through an agent domiciled and legally authorized to do business in the State of Tennessee and delivered to the Owner not later than ten (10) working days after the date shown on written notice from the City. Surety company proposed shall be one acceptable to the Owner.

- (b) If the Surety on any bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of the aforementioned bond stipulations, the Construction Manager shall within five (5) working days thereafter substitute another bond and Surety, both of which must be acceptable to the Owner.

## ARTICLE 19

### INDEMNIFICATION

#### Section 19.1. Indemnification of the Construction Manager

- (a) To the fullest extent permitted by law, the Construction Manager, on behalf of itself, its Trade Contractors, sub-subcontractors, their agents, their employees or any entity or person for which the Construction Manager is or may be responsible (all of said parties are herein sometimes collectively referred to as the “Indemnitors”), shall fully indemnify, defend, save and hold Owner, their agents, employees, officers, directors, partners and related entities (all of said parties are herein collectively referred to as the “Indemnitees”) harmless from and against all liability, damage, loss, claims, demands, actions and expenses of any nature whatsoever, including, but not limited to reasonable attorneys’ fees which arise out of or are connected with:
  - (i) Any negligent act, error or omission by any Indemnitor in the performance of this Agreement;
  - (ii) The failure of the Indemnitor in the performance of this Agreement to comply with the laws, statutes, ordinances or regulations of any governmental authority; or
  - (iii) The material breach of any term or condition of this Agreement by any of the Indemnitors.
- (b) Without limiting the generality of the foregoing, the indemnity herein above set forth shall include all liability, damages, loss, claims, demands and actions on account of personal injury, death or property loss to any third party, any Indemnitee, any of Indemnitee’s employees, agents, licensees or invitees which arose out of or in connection with the work.

- (c) The indemnity set forth in this Article shall survive any termination of this Agreement for the applicable statute of limitations period.

Section 19.2. Labor Indemnity

- (a) The Construction Manager shall indemnify, defend and hold harmless the Owner from any and all administrative and judicial actions (including reasonable attorneys' fees related to any such action) incurred by the Owner in connection with any labor related activity arising from the performance of the Work of the Construction Manager. As used in this Agreement, "labor related activity" includes, but is not limited to, strikes, walk-outs, informational or organizational picketing, use of placards, distribution of hand-outs or leaflets in the vicinity of any facility where the Owner conducts business. The Owner shall advise the Construction Manager if any labor related activity occurs and the Construction Manager shall arrange for the legal representation necessary to protect the Owner, provided such representation is previously approved by the Owner.

Section 19.3 Royalties and Patents

- (a) The Construction Manager shall pay all royalties and license fees in any way relating to the Work, shall defend all suits or claims for infringement of any patent rights, and shall indemnify and hold the Owner harmless from loss on account of any such suit or claim.

Section 19.4 Attorneys' Fees

- (a) In the event it becomes necessary for Owner to employ an attorney to enforce any provision of this Agreement, then the Contractor shall be liable for all attorneys' fees and litigation expense of Owner.

**ARTICLE 20**

**RIGHT TO OCCUPY BY OWNER**

Section 20.1. Early Occupancy by Owner. The Owner has the right to occupy or use ahead of schedule all or any substantially completed or partially completed portion of the Project or Work when such occupancy and use are in its best interest, notwithstanding the time of completion for all of the Work. The Construction Manager shall be entitled to recover cost due to the early occupancy or use by the Owner.

Section 20.2. Corrections After Occupancy. After the Owner has taken occupancy of all or any substantially completed portion of the Work, the Construction Manager shall not disrupt the use and occupancy of the Owner to complete the punch list for the Work but shall, after forty-five (45) calendar days to complete the punch list, and at the discretion of the Owner, complete the punch list after normal working hours.

Section 20.3. Heating, Ventilating and Air-Conditioning Systems. The Owner may require the use and operation of any heating, ventilating and air-conditioning equipment at the time it occupies or uses any portion of the Work. In such event, the Owner may require the Construction Manager to operate such equipment and will, pursuant to a Change Order or Change Instruction, pay the Construction Manager the documented cost of such utilities or other operational expenses required for the use and occupancy of the Owner, but the Construction Manager shall be responsible for such equipment and for its careful and proper operation and maintenance. At any time, the Owner may assume the care and maintenance of any portion of the Project which it is occupying and using for the operation of any such equipment, but in each case, the Construction Manager shall not be relieved of its responsibility for the full completion of the Work and the protection of its tools, materials and equipment.

## ARTICLE 21

### DEFAULT; RIGHT TO TERMINATE OF OWNER

Section 21.1. Event of Default.

(a) For the purposes of this Agreement, an Event of Default shall be if:

(i) At any time, there shall be filed by or against the Construction Manager in any court a petition in bankruptcy, insolvency, for reorganization, or for the appointment of a receiver or trustee of all or a portion of the property of the Construction Manager, and within twenty (20) days from the filing date the Construction Manager fails to secure a discharge;

(ii) The Construction Manager makes an assignment for the benefit of creditors or petitions for or enters into an agreement or arrangement with its creditors;

(iii) The Construction Manager fails to prosecute the Work properly, or fails to complete the Work entirely on or before any date established for Substantial or Final Completion;

(iv) The Construction Manager fails to make prompt payment to its Trade Contractors or for materials or labor used in the Work;

(v) The Construction Manager fails to supply sufficient labor, material and/or equipment so as to complete the Work timely and in accordance with the Contract Documents including, but not limited to the progress schedule; or

(vi) Without limitation, the Construction Manager fails to perform any term, condition or obligation of this Agreement or the Contract Documents.

(b) Upon the occurrence of an Event of Default, the Owner may give written notice to the Construction Manager. If such Event of Default has not been cured within seven (7) days from the date of said notice, the Owner, without prejudice to any other remedy it has, may terminate

this Agreement. In such event, the Owner may take possession of all or some of the materials, tools, equipment and appliances of the Construction Manager, and complete the Work by such means as the Owner deems fit. In such case, the Construction Manager shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Guaranteed Maximum Price shall exceed the aggregate of (1) the expense of the Owner of completing the Work, including compensation for additional managerial, design and administrative services, and (2) the losses and damages of Owner, including liquidated damages, attorneys' fees and litigation expense, such excess shall be paid to the Construction Manager. If such expense, losses and damages of Owner shall exceed the unpaid balance of the Guaranteed Maximum Price, the Construction Manager and its surety shall pay the difference to the Owner promptly on demand.

Section 21.2. Termination for Convenience. The Owner may terminate this Agreement for its convenience without cause by giving seven (7) days' prior written notice to the Construction Manager. In such event, the Owner will pay the Construction Manager for that portion of the Guaranteed Maximum Price, including the proportionate fee of the Construction Manager, less the aggregate of previous payments, allocable to the Work completed by the Construction Manager as of the date of termination. The Owner will be responsible to reimburse the Construction Manager for termination costs regarding any of its continuing contractual commitments to Trade Contractors, suppliers, vendors and materialmen or for penalties or damages for canceling such contractual commitments.

Section 21.3. Suspension by the Owner for Convenience.

(a) The Owner may order the Construction Manager in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine (hereinafter referred to as "Suspension").

(b) Provided the Suspension lasts for more than thirty (30) days, an adjustment to the Guaranteed Maximum Price ("Adjustment") shall be made for the increased cost of performance after thirty (30) days caused by the Suspension. The date of Substantial Completion shall be extended by written Change Order to the extent that Substantial Completion is delayed by the Suspension. No adjustment shall be made to the extent that an adjustment is made or denied under another provision of this Agreement except that approval shall not be unreasonably withheld.

(c) The amount of the Construction Manager's compensation for a Suspension pursuant to **Section 21.3(b)** shall be limited to any properly documented costs of maintaining personnel and equipment in the field provided such costs are approved by the Owner in writing. The Owner shall not be liable at any time for home office overhead expense or consequential damages. At the Owner's option, the Construction Manager may be ordered to demobilize its forces because the Project is suspended. In such event the Owner will reimburse the Construction Manager for the reasonable cost of demobilization and remobilization.

Section 21.4. Assignment of Trade Contracts. In the event of termination by the Owner pursuant to this Article 21, the Owner may require the Construction Manager promptly to assign to it all or some Trade Contracts, materials, tools, equipment to be installed under this Agreement, or rental agreements, and any other commitments which the Owner, in its sole discretion, chooses to take

by assignment. In such event, the Construction Manager shall promptly execute and deliver to the Owner written assignments of such commitments and contracts.

## ARTICLE 22

### HAZARDOUS MATERIALS COVENANTS

Section 22.1. Owner's Responsibility. Owner shall be responsible for any Hazardous Materials, as defined in section 22.2(a), uncovered or revealed at the Project or Project Site which was not shown or indicated in the Contract Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work.

Section 22.2. Hazardous Materials Covenants.

(a) Except where directed by Owner or as required by this Agreement, Construction Manager hereby represents and warrants to and for the benefit of Owner that the Project or Project Site will not be used or operated in any manner that will result in the storage, use, treatment, manufacture and disposal of any Hazardous Materials (hereinafter defined) upon the Project or Project Site or any portion thereof or which will result in Hazardous Materials Contamination (hereinafter defined). For purposes hereof, the term "Hazardous Materials" shall mean and refer to (i) any "hazardous waste" as defined by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 *et seq.*), as amended from time to time, and regulations promulgated thereunder; (ii) any "hazardous substance" as defined by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. § 9601 *et seq.*) ("CERCLA"), as amended from time to time, and regulations promulgated thereunder; and (iii) any other substance which is defined as hazardous or toxic by any laws or by any other legal requirements affecting the Project or Project Site or any substance the presence of which on the Project or Project Site is prohibited by any applicable environmental laws or regulations affecting the Project or the Project Site including but not limited to, the Hazardous Material Transportation Act, as amended (49 U.S.C. § 1801, *et seq.*), and the Toxic Substance Control Act, as amended (15 U.S.C. § 2601, *et seq.*), (hereinafter referred to as "Laws"). The term "Hazardous Materials Contamination" shall mean and refer to the contamination of the Project or Project Site or of the buildings, facilities, soil, surface water, ground water, air, or other elements on any other property as a result of Hazardous Materials at any time emanating from the Project or Project Site.

(b) In addition to and without limiting the generality of any other provision of this Agreement, Construction Manager shall and hereby does agree to defend, indemnify and hold Owner, its agents, employees, officers, directors, partners and related entities, harmless from and against any and all losses, damages, expenses, fees, claims, demands, causes of action, judgments, costs and liabilities, including, but not limited to, attorneys' fees and costs of litigation, costs and expenses of response, remedial and corrective work, and other cleanup activities, arising out of or related to (i) the storage, use, treatment, manufacture or disposal of any Hazardous Materials upon the Project or Project Site or any portion thereof, or (ii) the use or operation of the Project or Project Site or any portion thereof in any manner which results in the "release" or "threatened release" (as

those terms are defined in CERCLA and the rules and regulations promulgated thereunder, as from time to time amended) of Hazardous Materials or in Hazardous Materials Contamination on, in or affecting the Project or Project Site or any portion thereof whether by Construction Manager or Construction Manager's employees, agents, delegees, invitees, licensees, concessionaires, Trade Contractors or representatives or other persons or entities for whose acts the Construction Manager is responsible, provided that such actions or events result from the sole negligence of Construction Manager or its said employees, agents, delegees, invitees, licensees, concessionaires, Trade Contractors or representatives, or other persons or entities for whose acts or omissions the Construction Manager is responsible. The provisions of this section shall survive any payment or satisfaction of this Agreement and such provisions shall remain in full force and effect.

(c) Owner represents that, to the best of its knowledge and information, it has disclosed to Construction Manager the existence of all Hazardous Materials located upon the Project or the Project Site. To the extent allowed by law, Owner shall and hereby does agree to defend, indemnify and hold Construction Manager, its officers, directors, employees, and agents harmless from and against any and all losses, damages, expenses, fees, claims, demands, causes of action, judgments, costs and liabilities, including but not limited to, attorneys' fees and costs of litigation resulting from bodily injuries to any person, or damage to any property caused solely by or arising solely out of latent Hazardous Materials Contamination of the Project or Project Site or any portion thereof which Contamination was present but unknown by the Owner prior to the date hereof and which was not reasonably discovered or otherwise known hereafter by the Owner or the Construction Manager or its employees, agents, delegees, invitees, licensees, concessionaires, Trade Contractors or representatives or other persons or entities for whose acts or omissions the Construction Manager is responsible, provided that such Hazardous Materials Contamination or any release of Hazardous Materials related thereto is in no way caused by or results from the negligent use of the Project or the Project Site by the Construction Manager or its said employees, agents, delegees, invitees, licensees, concessionaires, Trade Contractors or representatives or other persons or entities for whose acts or omissions the Construction Manager is responsible.

## **ARTICLE 23**

### **MISCELLANEOUS**

Section 23.1. No Waiver. No consent or waiver, express or implied, by either party to or of any breach or default by the other in the performance of any of its obligations shall be deemed or construed to be a consent or waiver to or of any other breach or default by such party. Neither the silence of the Owner nor the Owner's failure to complain of any act or failure to act of the Construction Manager or to declare the Construction Manager in default, irrespective of how long such failure continues, shall constitute a waiver of any right of Owner.

Section 23.2. Conflicts. In the event of any conflict between the terms, conditions, obligations or provisions expressed in this Agreement and any term, condition, obligation or provision in any of the other Contract Documents, the term, condition, obligation or provision of this Agreement shall govern to the extent of the conflict.

Section 23.3. Assignment. This Agreement shall not be assigned, delegated or transferred in whole or in part by the Construction Manager nor shall the Construction Manager assign any monies due or to become due to it without the prior written consent of the Owner.

Section 23.4. Governing Law and Qualifications. (a) This Agreement is entered into in Tennessee and shall be governed by and construed according to the laws of Tennessee. Any dispute arising from or out of this Agreement shall be resolved in a federal or state court of competent jurisdiction and venue in Memphis, Tennessee.

Section 23.5 No Payments to Officers or Employees of City or County. The Construction Manager warrants that no part of the funds provided by the City, County and State shall be paid directly or indirectly to any officer or employee of the City, County or State as wages, compensation or gifts in exchange for acting as officer, agent, employee, Trade Contractor, sub-subcontractor or consultant to either the Construction Manager or other entity in connection with any Work contemplated or performed relative to this Agreement.

Section 23.6. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same Agreement.

Section 23.7. Article and Section Headings. Article and Section headings and the Table of Contents contained in this Agreement are for ease of reference only and shall not affect the interpretation or meaning of this Agreement.

Section 23.8. Parties in Interest. This Agreement shall inure to the benefit of and be binding upon the parties, their sureties, and their respective successors, assigns and legal representatives.

Section 23.9. Severability. If any one or more of the provisions contained in this Agreement shall for any reason be held invalid, illegal, unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement, but it shall be construed as if such invalid, illegal or unenforceable provision had never been contained in it.

Section 23.10. Trade Contractor Relations Requirements. By appropriate written agreement, the Construction Manager shall require each Trade Contractor, to the extent of the Work to be performed by the Trade Contractor to be bound to the Construction Manager by the obligations, terms and conditions of this Agreement and the Contract Documents, and to assume toward the Construction Manager all the obligations, terms, conditions and responsibilities which the Construction Manager, by this Agreement and these Contract Documents, assumes toward the Owner. Each Trade Contractor agreement shall preserve and protect the rights of the Owner under this Agreement and the Contract Documents with respect to the Work to be performed by the Trade Contractor so that subcontracting thereof will not prejudice the rights of the Owner. The Construction Manager shall require each Trade Contractor to enter into similar agreements with sub-subcontractors. The Construction Manager shall make available to each proposed Trade Contractor, prior to the execution of the Trade Contract agreement, copies of this Agreement and the Contract Documents to which the Trade Contractor will be bound. Trade Contractors shall



similarly make copies of this Agreement and the Contract Documents available to their respective sub-subcontractors.

Section 23.11. Notices. All notices, requests, consents and other communications under this Agreement shall be in writing and shall be deemed to have been duly given if hand-delivered or mailed by certified or registered mail, return receipt requested, postage prepaid.

(a) If to the Owner, addressed to:

City of Memphis  
125 North Main, Room 554  
Memphis, TN 38103

Attention: XXXXXXXXXXXXXXXXXX  
Project Manager

(b) If to the Construction Manager, addressed to:

[REDACTED]  
[REDACTED]  
[REDACTED]

Attention: [REDACTED]

The Owner or the Construction Manager may at any time change the addresses to which copies of notices must be mailed by sending written notice to the other of such change in the manner provided.

Section 23.12. Exhibits. All Exhibits described in this Agreement shall be deemed to be incorporated and made a part of this Agreement, except that if there is any inconsistency between this Agreement and the provisions of any Exhibit, the provisions of this Agreement shall control to the extent of the inconsistency.

Section 23.13. Entire Agreement. This Agreement, together with the Exhibits, the other documents and the Contract Documents, constitutes the entire Agreement between the Owner and the Construction Manager and supersedes all prior written or oral agreements, understandings, representations, negotiations and correspondence between the parties. This Agreement shall not be supplemented, amended or modified by the silence of the Owner, a failure of the Owner to act, any course of dealing, course of performance or usage of trade and may only be amended or modified by a written instrument. The Construction Manager and the Owner agree and stipulate conclusively that both parties received the benefit of counsel before signing this Agreement.

Section 23.14. Joint Negotiation. This Agreement has been negotiated by the Owner and the Construction Manager, and this Agreement shall not be deemed to have been negotiated and prepared by the Owner or the Construction Manager, but by both equally.

Section 23.15. Third Party Beneficiary. This Agreement shall not be deemed to create any other relation between Construction Manager and Owner other than as expressly provided herein and shall not be for the benefit of any third party.

Section 23.16. Dispute Resolution. See Exhibit I - City of Memphis Dispute Procedure.

## ARTICLE 24

### NONDISCRIMINATION

#### Section 24.1. Nondiscrimination.

- (a) All entities contracting with the City agree to abide by and to take affirmative action when necessary to ensure compliance with the nondiscrimination clauses set out below, and agree to show proof of nondiscrimination upon request and to post in conspicuous places available to all associate agents and their employees. In the event of noncompliance with city nondiscrimination clauses, or with provisions of Executive Orders 11141 (age), 11246, 11375 (women), 12086 (Vietnam veterans), 110478 (federal employees), 11625 (minority business), 11701 (veterans), Title 41, Chapter 60 (handicapped) and specifically the handicapped affirmative action clause in Section 60-741.6.9 of OFCCP Rules, and any and all other federal laws prohibiting discrimination, contracts may be canceled, terminated, or suspended in whole or in part by the City of Memphis.
- (b) The Construction Manager shall execute the “City of Memphis Certificate of Nondiscrimination” contained herein as Exhibit “K” agreeing that he/she shall not discriminate against any Trade Contractor, sub-subcontractor, employee, or applicant for employment on the grounds of race, color, national origin or sex, in accordance with the citations listed in the above paragraph; and shall require the execution of such a certificate for each Trade Contractor prior to award of any Trade Contract with the further requirement that each sub-subcontractor shall include identical requirements in any lower tier subcontracts which might in turn be made. FAILURE TO EXECUTE SUCH CERTIFICATE SHALL CAUSE NON-EXECUTION OF THE CONSTRUCTION MANAGEMENT AGREEMENT.
- (c) The Construction Manager and all Trade Contractors shall maintain copies of their payrolls for each weekly payroll period for the life of the construction and for a period of **THREE (3) YEARS** after final release and payment is made by the City to the Construction Manager.

## ARTICLE 25

### EQUAL BUSINESS OPPORTUNITY PROGRAM

Section 25.1. Equal Business Opportunity Program (EBO)

- (a) This project is subject to the requirements of Ordinance No. 5384 which establishes the Equal Business Opportunity Program. It is the responsibility of the Construction Manager to see that all requirements of the ordinance are met. The goal of the EBO Program is to increase the participation of Minority and Women-Owned Business Enterprises (M/WBE's) in the Owner's purchasing activities. Toward achieving that objective, the M/WBE participation goal for this project is hereby established as:

43	MBE%
7	WBE%

- (b) These percentages are defined as the dollar value of Trade Contracts awarded to certified minority or women-owned business enterprises divided by the Guaranteed Maximum Price of the Work (item No. 2 in Exhibit "E") amount.
- (c) Prior to the award of the first Trade Contract bid package, the Construction Manager shall present to the City an "EBO Participation Plan" for approval. This plan must include:
- (i) The overall level and dollar amount of EBO participation the Construction Manager anticipates to achieve in the performance of the contract.
  - (ii) A breakdown of the EBO goal and EBO dollar amount to be achieved by the award of each Trade Contract. This breakdown shall include a description of the work to be accomplished by each Trade Contract.
- (d) IT IS THE RESPONSIBILITY OF THE CONSTRUCTION MANAGER TO VERIFY WITH THE CITY OF MEMPHIS CONTRACT COMPLIANCE OFFICE (CONTACT INFORMATION BELOW) THAT ANY M/WBE FIRM(S) UTILIZED TO MEET THE PARTICIPATION GOAL ARE CERTIFIED AS A M/WBE FIRM. A listing of current M/WBE certified firms can be found on the City's website ([www.cityofmemphis.org](http://www.cityofmemphis.org)). On the City's home page under "Doing Business with the City", go to the link entitled "Certified MWSBE Search". Here an entire listing of all certified M/WBE and SBE firms can be found or a search can be performed for a particular firm. One or a combination of several M/WBEs may be utilized to meet the established goal.
- (e) If a Bidder desires to utilize an M/WBE firm not included on the City's website, it is the Bidder's responsibility to confirm that the desired firm is certified by the City of Memphis. Such confirmation must be obtained from the City's Contract Compliance Office, in writing, before the proposal/response due date. Requests for verification must be submitted to the City's Contract Compliance Office listed below:

Contract Compliance Officer  
City of Memphis  
Office of Business Diversity and Compliance

125 North Main Street, Suite 546  
Memphis, TN 38103  
Phone: (901) 576-6210  
Fax: (901) 576-6560

Section 25.2. EBO Supplemental Submittal Requirements

- (a) Within fourteen (14) days after the signed Agreement has been submitted by the Trade Contractor to the Construction Manager for execution, the Trade Contractor shall submit Letters of Intent from the certified M/WBE Trade Contractors identified in Exhibit "L" to the Owner via the Construction Manager for approval.
- (b) Within ten (10) days after receipt of the executed contract from the Construction Manager, the Trade Contractor shall submit copies of executed Trade Contracts with the certified M/WBEs identified in Exhibit "L" to the Owner via the Construction Manager. The executed Trade Contract shall include the scope of work to be performed by the M/WBE subcontractor.
- (c) At the completion of the work, the Construction Manager shall submit to the Owner a final schedule of participating certified M/WBE Trade Contractors, showing the final amount of each Trade Contract and payments.
- (d) With the submittal of Application for Payment, the Construction Manager shall provide certification that he has paid all previous progress payments to M/WBE Trade Contractors utilizing the form found in Exhibit "M" or Exhibit "N" (as appropriate) of the contract documents.

Section 25.3. Changes to Designated M/WBE Trade Contractors

- (a) Proposed changes to the designated participating M/WBE Trade Contractors during performance of a contract, must be submitted to the Owner. The Construction Manager must make every effort to replace a minority or women-owned business enterprise Trade Contractor with another certified minority or women-owned business enterprise, based on said enterprises' availability. All substitutes for minority or women-owned business enterprise Trade Contractors require prior approval of the Owner, not to be unreasonably withheld; and said approval may be granted for reasons including, but not limited to, the following.
  - (i) Trade Contractor requests that its subcontract agreement with the Construction Manager be voided;
  - (ii) Trade Contractor is unable to perform the work; or
  - (iii) Trade Contractor has consistently performed unacceptable work.

Section 25.4. B2GNow Reporting

- (a) B2GNow. The Construction Manager agrees to provide the City of Memphis with all Trade Contractors participating on this contract and associated payments. It is mandatory that this information be updated regularly in the software program B2GNow.gov.
- (b) Right to Withhold Payment. Failure to submit all subconsultant information in the compliance tracking software, B2GNow, will result in the withholding of payment until such information has been submitted. This information consists of any and all subconsultants used on any City of Memphis project.

Section 25.5. Failure to comply with any provision of Article 25

- (a) A determination by the Owner that the Construction Manager or Trade Contractor has failed to comply with any provision of this Article shall subject the offending party to any or all of the following penalties:
- (b) If the offending party is a M/WBE firm, denial or revocation of the City certification as a M/WBE for a period not to exceed one (1) year;
- (c) Withholding from the Construction Manager or Trade Contractor in violation ten (10) percent (%) of all future payments, in addition to retainage, under the involved project until it is determined that the contractor is in compliance;
- (d) Withholding from the Contractor in violation all future payments under the involved project until it is determined that the Contractor is in compliance;
- (e) Exclusion from submitting a bid for any future procurement by the City until such time as the Contractor demonstrates that it will comply with all of the applicable provisions contained in this Article;
- (f) Termination, by the City, of the contract.

**ARTICLE 26**

**PREVAILING WAGE ORDINANCE**

Section 26.1 Prevailing Wage Ordinance

- (a) This project is subject to the requirements of Ordinance No. 4665 which establishes the Prevailing Wage Ordinance Program. It is the responsibility of the Construction Manager to see that all requirements of the ordinance are met. The goal of the Prevailing Wage Program is to ensure that workers on City-funded contracts for the construction of, demolition, improvement, enlargement, alteration or replacement of a public work in excess of \$50,000 (Ordinance No. 5543 of 4-1-2014) shall receive the prevailing wage rate for the class of work being performed by each

laborer, workman or mechanic as established by the State of Tennessee for Region One, which includes Memphis and Shelby County. The Construction Manager must ensure that Trade Contractors receiving \$50,000 or greater comply with this provision. Toward achieving that objective, the Prevailing Wage Program is hereby established and requires the Construction Manager/Trade Contractor to:

(b) Construction Manager/Trade Contractor Responsibilities:

(i) Classify all workers in conformity with the wage rate determination included in the construction contract.

(ii) Post the prevailing wage rates at the construction site and make these rates available to their employees. Fringe benefits **are** included in City prevailing wage rates.

(iii) Pay overtime compensation of one and one-half times the basic rate of pay for all hours worked over forty (40) a week.

(iv) Make only those deductions from wages authorized by law.

(v) Submit payrolls to the City on a weekly basis. The Contractor or subcontractor must state that the payrolls are correct and complete, that the wage rates paid to the workers during the reporting period equal or exceed the prevailing wage rates included in the construction contract, and that the classifications used to conform with the work the employee performs. The Prime Contractor is responsible for submitting all payrolls including those of the subcontractor.

Section 26.2 Payments to Covered Workers

(a) Definitions:

(i) “Apprentices” means those persons registered individually under a bona fide apprenticeship program registered with the Bureau of Apprenticeship and Training in the United States Department of Labor. The Contractor using the apprentice must submit evidence of his/her indenture and/or apprenticeship registration when the apprentice’s name appears on a submitted payroll.

(ii) “Commission” means the prevailing wage commission or administrative delegate, the Tennessee Department of Labor.

(iii) “Covered Worker” means all workers employed on City construction projects as defined by T.C.A. §12-402(c).

(iv) “Trade Contractor” means one who performs part of the job called for in the prime contract. This term shall include materialmen whose employees engage in substantial operations at the project site, provided the employee of the materialmen

devotes as much as twenty percent (20%) of this work time on the construction premises.

(b) Prevailing Wage Rate Determination

(i) All covered workers shall receive the wages specified for their respective classifications in the prevailing wage determination and in accordance with the policies, conditions and rules of the City of Memphis Ordinance §4665 and Tennessee Department of Labor Prevailing Act of 1975, as amended.

(ii) The City's wage rate is based on the State of Tennessee's wage rate for Region One. Should the State revise its rate during the course of this contract the wage rate reflected in Exhibits "O" and "P" shall remain in effect for the life of this contract.

(c) Classification of Covered Workers: All Trade Contractors and sub-subcontractors must classify covered workers in the contract and payroll records, in conformity with the schedule of classifications appearing in the "City of Memphis Building Prevailing Wage Rates with Fringes" and/or "Highway Prevailing Wage Rates with Fringes" which are bound herein.

Section 26.3                      Posting of Wage Rates

(a) Each Trade Contractor or sub-subcontractor shall post and keep posted in a conspicuous place at the site of the construction work a copy of the prevailing wage rates prescribed in this contract and make these rates available to all covered workers employed on this project at all reasonable times.

Section 26.4                      Overtime Compensation

(a) All Trade Contractors and sub-subcontractors must pay overtime compensation as required by any applicable federal or state laws, rules or regulations.

Section 26.5                      Deductions

(a) All Trade Contractors and sub-subcontractors shall make only those deductions from wages authorized by law.

Section 26.6                      Submittal of Payrolls

(a) The Trade Contractors and all sub-subcontractors shall submit weekly a copy of all payrolls to the contracting agency at the address below and shall state that the payrolls are correct and complete, that the wage rates paid to covered workers during the reporting period equal or exceed those determined by the Commission, and that the classifications set forth for each covered worker conform with the work she/he performs.

City of Memphis

Division of Finance  
125 North Main Street – Room 368  
Attn: Director of Finance  
Memphis, TN 38103-2017

Phone No.: (901) 576-6657

Section 26.7                    Inspection of Records

- (a) The Construction Manager and Trade Contractors will make his/her employment records available for inspection by representatives of the contracting agency, the Commission, and the Tennessee Department of Labor and will permit such representatives to visit construction projects at all reasonable times.

Section 26.8                    Underpayment of Wages

- (a) Underpayment for covered workers shall be handled in accordance with policies and conditions of the City of Memphis Office of Prevailing Wages, Phone No.: (910) 576-6311.

Section 26.9                    Bond for Compliance

- (a) The bond of the Trade Contractor and sub-subcontractor shall contain a provision obligating such contractor or subcontractor to a faithful performance of each and every requirement imposed upon such Contractor or subcontractor under the terms of this contract.

Section 26.10                  Subcontracts

- (a) The Contractor shall insert in any subcontract the clause set forth in (b) and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

**ARTICLE 27**

**DRUG FREE WORKPLACE**

Section 27.1   City of Memphis Drug Free Workplace Policy

- (a) The Construction Manager, Trade Contractors, and all sub-subcontractors will acknowledge and adhere to the City of Memphis Drug Free Workplace policy and agrees to during performance of the Work:



(i) To require drug and alcohol screening (urine testing, breath analysis, or other testing procedures) in the following situations: Pre-Employment; Department of Transportation Commercial Drivers, Reasonable Suspicion; Post Accident and Follow Up Drug Testing as part of Substance Abuse Rehabilitation.

(ii) To operate a drug free workplace program or alcohol testing program with requirements at least as stringent as the City of Memphis.

The Construction Manager, Trade Contractors, and all sub-subcontractors shall sign the form contained herein as **Exhibit "Q"**. The Construction Manager shall retain the signed forms and make them available to the City of Memphis upon request.

## **ARTICLE 28**

### **SUSPENSIVE LIABILITY AGREEMENT**

#### **Section 28.1 Suspensive Liability Agreement**

- (a) Notwithstanding any term, condition, obligation or provision in this Agreement, any other writing, any other agreement, any oral understanding or agreement, or any conduct or failure to act by the Owner, the Construction Manager stipulates and agrees conclusively that the Construction Manager has against the Owner no right, entitlement or claim for any payment, compensation, cost or remuneration of any type other than pursuant to the terms of this Agreement.

## **ARTICLE 29**

### **EMPLOYMENT OF ILLEGAL IMMIGRANTS**

#### **Section 29.1 Employment of Illegal Immigrants**

- (a) The Construction Manager hereby certifies to comply with all applicable federal and state laws prohibiting the employment of individuals not legally authorized to work in the United States. The Construction Manager shall not knowingly:
- (i) Utilize the services of illegal immigrants; or
- (ii) Utilize the services of any Trade Contractor who will utilize the services of illegal immigrants in the performance of the contract. In the event the Construction Manager fails to comply with any and all local, state and federal laws prohibiting the employment of individuals not legally authorized to work in the United States, this agreement may be canceled, terminated or suspended in whole or in part by the City, and the Construction Manager may be prohibited from

contracting to supply goods and/or services to the City for a period of one (1) year from the date of discovery of the usage of illegal immigrant services in the performance of a contract with the City.

IN WITNESS WHEREOF, the parties have made and executed this Agreement as of the day and year first above written.

(this contract is executed in triplicate)

**CITY OF MEMPHIS, TENNESSEE**

**Name of Const Management Firm**

By \_\_\_\_\_  
Mayor

By \_\_\_\_\_

Date: \_\_\_\_\_

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

By \_\_\_\_\_  
City Engineer

ATTEST: \_\_\_\_\_

Date: \_\_\_\_\_

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

APPROVED:

By \_\_\_\_\_  
City Attorney

ATTEST:

By \_\_\_\_\_  
Comptroller

STATE OF TENNESSEE )  
 ) ss.  
COUNTY OF SHELBY )

Personally appeared before me a Notary Public, \_\_\_\_\_, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be the \_\_\_\_\_ of CITY OF MEMPHIS, and that he as such \_\_\_\_\_, being authorized so to do, executed the foregoing Instrument for the purpose contained therein, by signing the name of the corporation by himself as \_\_\_\_\_.

Witness my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 20XX.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
  
\_\_\_\_\_  
  
\_\_\_\_\_

STATE OF \_\_\_\_\_ )  
 ) ss.  
COUNTY OF \_\_\_\_\_ )

Personally appeared before me a Notary Public, \_\_\_\_\_, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be the \_\_\_\_\_ of \_\_\_\_\_, and that he as such \_\_\_\_\_, being authorized so to do, executed the foregoing Instrument for the purpose contained therein, by signing the name of the corporation by himself as \_\_\_\_\_.

Witness my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 20XX.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
  
\_\_\_\_\_  
  
\_\_\_\_\_

**EXHIBIT “A”**

**PROJECT DESCRIPTION**

Add a brief few sentences describing the project.

**EXHIBIT “B”**

**GENERAL SCOPE OF WORK**

I. The furnishing of all labor, material, tools, equipment, services, transportation, all temporary equipment, structures and work, and the payment of all costs incidental and necessary, including but not limited to all materials, labor, services and taxes to furnish the pre-construction services set forth in the Construction Management Agreement to which this is an Exhibit, and complete the construction of the [REDACTED] in Memphis, Tennessee, in accordance with the Contract Documents prepared and to be prepared for the Project.

**EXHIBIT "C"**

**CONTRACT DOCUMENTS**

- I. This Agreement and all Exhibits attached hereto.
  
- II. Drawings prepared (dated                     ) and to be prepared by:  
(Name and address of design firm)
  
- III. Specifications prepared (dated                     ) and to be prepared by:  
(Name and address of design firm)
  
- IV. Addenda, including but not limited to, all drawings and attachments thereto.  
To be determined at completion of GMP.

**EXHIBIT “D”**

**CONSTRUCTION MANAGER’S ORGANIZATIONAL CHART**



**EXHIBIT “E”**

**COMPONENTS OF GUARANTEED MAXIMUM PRICE**

Pursuant to Article 4 of this Agreement, the Owner and the Construction Manager have agreed to establish Guaranteed Maximum Prices for (1) the General Conditions - Construction Management Site Office Support Costs; (2) the Cost of the Work, exclusive of Construction Management Site Office Support Costs; and (3) Fee of the Construction Manager. The Owner agrees to pay the Construction Manager for the Cost of the Work as defined in Section 4.1[c] up to the amount of the Guaranteed Maximum Price for each of the foregoing items. The maximum cost to the Owner for the Work to be performed by the Construction Manager is guaranteed not to exceed the cost of such item as reflected below:

1. General Conditions - Construction Management Site Office Support Costs - For the purpose of clarification it is understood and agreed that the Guaranteed Maximum Price for Construction Management Site Office Support Costs includes, but is not limited to, all costs associated with the following items:

- a. Field engineering and layout
- b. Office trailers and furniture
- c. Office supplies
- d. Telephones
- e. Facsimile machine(s)
- f. Radios
- g. Temporary utilities
- h. Jobsite toilets
- i. Jobsite water and ice
- j. Project sign
- k. Jobsite vehicle expenses
- l. Safety supplies
- m. Storage trailers
- n. As-built drawings
- o. Progress photos (monthly)
- p. Clean-up
- q. Dumpster fees and trash removal
- r. Insurance not covered by Owner’s program
- s. Building permit fee (based on a \$XXXXXXXXXX GMP)
- t. Jobsite security

Guaranteed Maximum Price for General Conditions.....\$

**EXHIBIT "E"**

2. For the purposes of clarification, it is understood and agreed that the Guaranteed Maximum Price of the Work, exclusive of Construction Management Site Office Support Costs, includes, but is not limited to, all costs associated with the following items:

- a. Sitework
- b. Concrete
- c. Masonry
- d. Metals
- e. Woods and plastics
- f. Thermal and moisture protection
- g. Doors and windows
- h. Finishes
- i. Specialties
- j. Equipment
- k. Furnishings
- l. Special Construction
- m. Conveying Systems
- n. Mechanical
- o. Electrical
- p. Site Specific General Conditions
- q. CM Contingency

Guaranteed Maximum Price of the Work, exclusive  
of Construction Management Site Office Support Costs and Fee.....\$

3. The Fee includes all compensation, payments and remuneration of any kind, including overhead and profit, of any description, of the Construction Manager for the Project which the Owner is obligated to pay the Construction Manager in connection with or growing out of the Work, subject only to any Change Order duly executed in accordance with this Agreement.

Guaranteed Maximum Price of Construction Manager's Fee.....\$

## EXHIBIT "F"

### BID PROCEDURE CRITERIA

This exhibit provides for the bidding and contract award procedures to be used for each of the Trade Contracts.

1. Construction Manager shall prepare the Contract Documents for each Trade Contract. Each trade contract will be held by the Construction Manager and will utilize the Owner's contract format. In addition to the technical specifications and drawings for each trade contract, the "front end" documents shall include the following:

PROJECT NAME  
LOCATION AND/OR ADDRESS  
MEMPHIS, TN

#### TABLE OF CONTENTS

#### DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS

SECTION 00010	-	LEGAL NOTICE TO BIDDERS
SECTION 00100	-	INSTRUCTIONS TO BIDDERS
SECTION 00310	-	BID FORM
SECTION 00410	-	BID BOND
SECTION 00420	-	CERTIFICATE OF NONDISCRIMINATION
SECTION 00430	-	EQUAL BUSINESS OPPORTUNITY PROGRAM
SECTION 00440	-	CERTIFICATE OF A DRUG FREE WORKPLACE

The Owner will provide the Construction Manager with electronic files containing the above contract sections.

2. The Construction Manager shall propose to the Owner a pre-approved bidders list for each trade contract to be awarded. All contractors on the pre-approved list must be licensed contractors in the State of Tennessee. The pre-approved bidders list for each trade contract to be awarded shall be sufficient enough to provide for at least three (3) bid submittals for each trade contract to be awarded.
3. The bid opening for each trade contract will be held in a pre-determined location in City Hall. The date and time of each bid opening will be set by the Construction Manager.
4. The Construction Manager shall prepare a bid tab reflecting each bidder with the lowest/best bidder identified.
5. The Construction Manager will be responsible for addressing any bid protests.

## **EXHIBIT “G”**

### WEATHER DELAY

Construction time shall include all normal weather conditions, such as rain, snow, and freezing temperatures. Extension of time will not be allowed for the normal inclement weather, as recorded by the Memphis area office of the National Weather Service. Claims for delay attributed to unusually severe weather must be supported by National Weather Service Climatological data covering the period in question and the same calendar period for the five (5) preceding years. When the weather for the period in question exceeds in intensity or frequency the five (5) year average for the same period, a time extension will be considered in accordance with Article 3. Comparison will be on a monthly basis. For a day to be considered as a possible non-working day due to rainfall, the rain on that day must exceed 0.05 inches. Whether or not a time extension is granted will depend upon the effect of the weather on the work being performed during the period in question.

**EXHIBIT "H"**

**ESCROW AGREEMENT**

This Agreement is entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between City of Memphis ("City"), \_\_\_\_\_ ("Contractor"), and First Tennessee Bank National Association ("Bank").

WITNESSETH:

WHEREAS, City and Contractor have entered into a contract dated \_\_\_\_\_ (the "Contract") for the construction of certain improvements to real property in connection with a project designated in City's [funding source]; and

WHEREAS, Section 00710, Article 4 of the Contract provides for a certain percentage to be withheld by City from each progress payment made on account of the Contract price (hereinafter referred to as "Retainage"); and

WHEREAS, City has selected Bank to be "Escrow Agent" for said Retainage;

NOW, THEREFORE it is mutually agreed among the parties hereto that:

1. City hereto shall cause a separate interest-bearing Escrow Account, Account No. \_\_\_\_\_ ("the Escrow Account") to be established with the Escrow Agent. The proceeds of the Escrow Account shall be the property of Contractor and shall be subject to the rights of City if Contractor defaults on or does not complete the Contract. All interest earned on deposited Retainage shall be paid to the Contractor in accordance with this Agreement. Contractor shall provide Bank with a W-9 and such other information as Bank may require in order to set up the Escrow Account. The Account will use Contractor's tax identification number.
2. Such Retainage shall not be released from the Escrow Account without the prior written approval of City (a letter bearing the signature of the Comptroller of the City of Memphis must be presented to the Bank requesting such release of Retainage) with a copy of said letter to be sent to Contractor in the manner provided for transmission of notice as provided in the Contract between City and Contractor.
3. From and after the date hereof, as each progress payment is made pursuant to Sections 4.2 and 4.3, Article 4 of the Contract, the Retainage withheld by City pursuant to the provisions of the Contract shall be concurrently deposited to the Escrow Account.
4. Until satisfactory completion in full of the Contract, City has and shall retain a first lien on and security interest in the Escrow Account. This security interest shall terminate upon City's execution of a release, to the extent of such release. Upon request for partial reduction of retainage as provided in the contract, or upon satisfactory completion in full of the Contract by the Contractor, to be evidenced by a written release delivered to the Escrow Agent, said release to be signed and executed by City, all funds accumulated in the Escrow Account, together with any accumulated interest or other earnings thereon, shall be paid promptly to the Contractor. Notwithstanding anything herein to the contrary, Contractor hereby agrees that the Escrow Account may be drawn against by City to pay

any and all costs, including reasonable attorneys' fees and court costs arising out of any lien or claim for lien filed by anyone claiming by, through or under the Contractor in connection with the Contract and/or arising out of any breach of the Contract by Contractor.

5. In the event of any dispute regarding this Agreement, or in the event that any of the parties hereto do not agree as to the disposition of the funds in the Escrow Account, the parties hereto agree that the Escrow Agent shall be released of any further obligation under this Agreement by tendering the funds maintained in the Escrow Account into a court of competent jurisdiction in an action in the nature of an interpleader.
6. City may replace Escrow Agent by notifying Bank. Upon receipt of such notice, Escrow Agent shall transfer all funds then on deposit in the Escrow Account to such bank selected by City within ten (10) business days of such notice from City. City shall notify Contractor of the substitute escrow agent and related escrow account within thirty (30) business days of such transfer of funds to said substitute escrow agent.
7. Escrow Agent may resign as Escrow Agent by notifying City and Contractor in writing of its intent to resign as Escrow Agent. Upon receipt of such notice, City and Contractor agree that City shall have the right to approve a substitute escrow agent within ten (10) business days of such notice from Escrow Agent. Escrow Agent shall transfer all funds then on deposit in the Escrow Account to such bank selected by City.
8. To the extent permitted by law, the parties hereto agree to indemnify and hold the Escrow Agent harmless from any loss, damages, or liabilities of any kind whatsoever, whether foreseen or unforeseen, whether direct or indirect arising out of or in connection with this Agreement, the Escrow Account and the funds contained therein, or the performance of the Escrow Agent's obligations hereunder, except liability resulting from Escrow Agent's negligence or misconduct. The Escrow Agent may rely upon the signatures of any correspondence from either or both of Owner/Borrower and/or Contractor as being the authenticate signatures of persons duly authorized to act on behalf of the Owner/Borrower or Contractor.
9. Except for the expressed provisions made in this Agreement, nothing provided in this Agreement shall be construed to modify or to amend the terms and provisions of the Contract.

**REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK**

In witness thereof, the parties, by their signatures hereto have executed or approved this ESCROW AGREEMENT.

**CITY OF MEMPHIS**

Approved as to Legal Form

By: \_\_\_\_\_  
Mayor

By: \_\_\_\_\_  
Chief Legal Officer/City Attorney

**CONTRACTOR**

**BANK**

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed or Typed Name and Title

\_\_\_\_\_  
Printed or Typed Name and Title

## **EXHIBIT "I"**

### CITY OF MEMPHIS DISPUTE PROCEDURE

**INITIAL DECISIONS** - Consultant shall decide meaning and intent of technical specifications and any plan or drawing where same may be found obscure or be in dispute.

**FINAL DECISIONS** - Any unresolved dispute between the Consultant and the Construction Manager shall be referred to the Administrator, Land Development/Budget for resolution. Should the Construction Manager not be satisfied with the decision of the Administrator, he shall be allowed to appeal the decision to the City Engineer, who, after such hearings and discussions as he deems appropriate, shall render a decision. Should the Construction Manager not be satisfied with the decision of the City Engineer, he shall be allowed to appeal the decision to the Mayor, who, after such hearings and discussions as he deems appropriate, shall render a final and conclusive decision. The City of Memphis Dispute Procedure set out herein shall be mandatory but non-binding subject to the parties' rights to litigate disputes as provided in the following paragraph.

**DISPUTES** - Any dispute arising from execution of this contract shall be governed, construed and enforced according to the laws of the State of Tennessee. All actions, whether sounding in contract or in tort, relating to the validity, the construction, the interpretation, and the enforcement of this contract shall be instituted and litigated in courts of the State of Tennessee located in Shelby County, Tennessee, and in no other. In accordance herewith, parties to this contract submit to the jurisdiction of the courts of the State of Tennessee, located in Shelby County, Tennessee.



**EXHIBIT "J"**

**PERFORMANCE BOND**

STATE OF TENNESSEE ( \_\_\_\_\_ COUNTY)

KNOW ALL MEN BY THESE PRESENTS, THAT:

We, \_\_\_\_\_ (Herein called the "Construction Manager")

of \_\_\_\_\_  
(Partnership or Corporation)

organized and existing under and by virtue of the Laws of the State of

\_\_\_\_\_, as Principal, and \_\_\_\_\_

as Surety, do hereby acknowledge ourselves indebted and firmly bound and held unto City of Memphis, Tennessee (Hereinafter called the "Owner"), a corporation existing under and by virtue of the laws of Tennessee, for the use and benefit of those entitled thereto, in the sum of

\_\_\_\_\_

(\$ \_\_\_\_\_) (Dollars) for the payment of which well and truly to be made, in lawful money of the United States we do hereby bind ourselves, successors, assigns, heirs and personal representatives.

BUT THE CONDITION OF THE FOREGOING OBLIGATION OR BOND IS THIS:

Whereas, the Owner has engaged the said Construction Manager, for the sum of

\_\_\_\_\_ (\$ \_\_\_\_\_) (DOLLARS)

to construct: **Project Title**

as more fully appears in a written agreement or contract bearing date of \_\_\_\_\_, a copy of which said agreement or contract is by reference hereby made a part hereof, and it is the desire of the said Owner that the said Contractor shall assume all undertaking under said agreement or contract, and shall assure and protect all laborers and furnishers of material on said work both as required by Tennessee Code Annotated Section 12-4-201 *et seq.*, as amended, and also independently of said statutes.

NOW, THEREFORE, if the said Construction Manager shall fully and faithfully perform all undertakings and obligations under the said agreement or contract herein before referred to and shall fully indemnify and save harmless the said Owner from all costs and damage whatsoever which it may suffer by reason of any failure on the part of said Contractor so to do, and shall fully reimburse and repay the said Owner any and all outlay and expense which it may incur in making good any such default, and shall fully pay for all of the labor, materials and work used by said Construction Manager or any immediate or remote Contractor or Furnisher of material under him in the performance of said Contract, in lawful money of the United States, as the same shall become due, then this obligation or bond shall be null and void, otherwise to remain in full force and effect.

AND, for value received, it is hereby stipulated and agreed that no change, extension of time, alteration or addition to the terms of the said agreement or contract or to the work to be performed thereunder or the specifications accompanying the same shall in anywise affect the obligations under this obligation or bond,

and notice is hereby waived of any such change, extension of time, alteration or addition to the terms of the agreement or contract or to the work or to the specifications.

IN WITNESS WHEREOF, the said Construction Manager has hereunder affixed its signature and said Surety has hereunto caused to be affixed its corporate signature and seal, by its duly authorized officers, on this \_\_\_\_ day of \_\_\_\_\_, 20\_\_

**CONSTRUCTION MANAGER**

\_\_\_\_\_  
Contractor's Company Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed or Typed Name and Title

**SURETY**

SURETY: \_\_\_\_\_

BY: \_\_\_\_\_  
Attorney in Fact - Signature

**CITY OF MEMPHIS**

\_\_\_\_\_  
Printed or Typed Name

APPROVED:

COUNTERSIGNED:

\_\_\_\_\_  
Mayor  
Tennessee Agent

BY: \_\_\_\_\_

APPROVED:

Print Name

\_\_\_\_\_

\_\_\_\_\_  
City Attorney

Address

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Telephone Number

**EXHIBIT "K"**

**CITY OF MEMPHIS CERTIFICATE OF NONDISCRIMINATION**

As Bidder, Construction Manager, or Trade Contractor on a City of Memphis Construction Contract,

**(NAME OF PROJECT)**

the undersigned states that it does not discriminate against any subcontractor, employee, or applicant for employment on the grounds of race, color, national origin or sex and, if awarded a contract for this project, agrees in performance of work:

1. Not to discriminate against any subcontractor, employee, or applicant for employment on the grounds of race, color, national original or sex;
2. To maintain payrolls of laborers and mechanics employed on this contract until five (5) years after final release and final payment by the City;
3. To require a similar certificate to be executed by each subcontractor at the time a subcontract is executed under the contract with the requirement that such subcontractor agrees to require a similar certificate of requirement on any lower tiers of subcontracts.
4. To conform with federal law, state statutes, executive orders, and local ordinances identified and listed under Nondiscrimination, Section 00100, "Instructions to Bidders", Paragraph 19 criteria.

Contractor's Name \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed or Typed Name and Title

**EXHIBIT "L"**

**CITY OF MEMPHIS MINORITY/WOMEN-OWNED BUSINESS ENTERPRISE COMPLIANCE FORM**

PROJECT TITLE: \_\_\_\_\_

TRADE CONTRACT: \_\_\_\_\_

Project Goal: \_\_\_\_\_ %MBE  
\_\_\_\_\_ %WBE

The following sections must be completed by the bidder. A certified Trade Contractor or supplier is defined as a firm from the list of certified firms provided [on the City of Memphis website](#).

\_\_\_\_\_  
Bidder's Name

Section A - If the bidder is a certified firm, so indicate here with a check mark.

\_\_\_\_\_ MBE      \_\_\_\_\_ WBE

Section B - Identify below those certified firms that will be employed as subcontractors or suppliers on this project. By submitting this bid, the bidder commits to the use of the firms listed below.

\$                    =            Show the dollar value of the subcontract to be awarded to this firm

%                    =            Show the percentage this subcontract is of your base bid

M/WBE =    Show by inserting an M or W whether the subcontractor is an MBE or WBE

<u>\$</u>	<u>%</u>	<u>M/WBE</u>	<u>CERTIFIED SUBCONTR. NAME, ADDRESS, TEL. NO.</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

\$ \_\_\_\_\_ % \_\_\_\_\_ = **Total MBE**

\$ \_\_\_\_\_ % \_\_\_\_\_ = **Total WBE**

**EXHIBIT "M"**

**AFFIDAVIT AND PARTIAL WAIVER OF CLAIMS AND LIENS AND RELEASE OF RIGHTS FOR TRADE CONTRACTORS**

The undersigned, who is the \_\_\_\_\_ (designate title) of \_\_\_\_\_ which is the \_\_\_\_\_ (designate whether Trade Contractor, supplier or otherwise) for the \_\_\_\_\_ (designate the type of work, supplies or services rendered) on the improvements constructed on the premises hereafter identified, declares that his/her contract with \_\_\_\_\_ (Construction Manager) is in the total amount of \$ \_\_\_\_\_, which includes extras and all change orders to the date hereof.

The undersigned further states that as of \_\_\_\_\_ (date) the total value of work completed and material stored is \$ \_\_\_\_\_. Of this amount, \$ \_\_\_\_\_ has been received (the receipt and sufficiency of which is hereby acknowledged by the undersigned) including \$ \_\_\_\_\_ in payment of Payment Application or Invoice Number \_\_\_\_\_. A total of \$ \_\_\_\_\_ is being held as retainage.

In consideration of the amounts and sums received, the undersigned does hereby waive and release to the **City of Memphis (Owner)** and to \_\_\_\_\_ (Construction Manager) any and all claims, liens, and rights to liens upon the premises described below and upon improvements now thereon, and upon the monies or other considerations (due as of the date of the aforesaid payment application or invoices from the **City of Memphis (Owner)** or \_\_\_\_\_ (Construction Manager) or from any other person, firm or corporation, said claims, liens, and rights to liens being on account of labor, services, materials, fixtures or apparatus heretofore furnished by or at the request of the undersigned. The premises as to which said claims, liens, and rights to liens are hereby released are identified as follows:

**Project Name:** \_\_\_\_\_

**Address of Project:** \_\_\_\_\_

**City:** Memphis **County:** Shelby **State:** TN **Zip Code:** \_\_\_\_\_

The undersigned further represents and warrants that s/he is duly authorized and empowered to sign and execute this waiver on his/her own behalf and on behalf of the company or business for which s/he is signing; that s/he has properly performed all work and furnished all the materials of the specified quality per plans and specifications and in a good and workmanlike manner through the date of said payment application or invoice; that s/he has paid for all the labor, materials, equipment, and services that he has used or supplied to the above premises through the date of said payment application or invoice; that s/he has no other outstanding and unpaid payment applications, invoices, retentions, holdbacks, chargebacks or unbilled work or materials against \_\_\_\_\_ (Construction Manager) as of the date of the aforementioned payment application; and that any materials which have been supplied or incorporated into the above premises were either taken from his/her fully-paid or open stock or were fully paid for and supplied as stated on the payment application or invoice.

The undersigned further agrees to reimburse and does hold harmless and fully indemnify the **City of Memphis (Owner)** and \_\_\_\_\_ (Construction Manager) for any losses or expenses should any such claims, liens, or rights to liens be asserted (by the undersigned or by any laborer, materialman or subcontractor of the undersigned), including, without implied limitation, attorneys' fees incurred in the defense thereof.

The undersigned further accepts and acknowledges the receipt of the aforesaid sums in full accord and satisfaction for the aforementioned claims with full knowledge that the contractors, **City of Memphis (Owner)** and \_\_\_\_\_ (Construction Manager), their successors and assigns, are relying thereon; and furthermore, the undersigned agrees to perform, now and in the future, each and every covenant and provision of this written contract or supplier's agreement (as the case may be) as modified or changed in writing with \_\_\_\_\_ (Construction Manager) or any Trade Contractor of \_\_\_\_\_ (Construction Manager) hereby acknowledging that said contract or supplier's agreement is now in full force and effect.

In addition, for and in consideration of the amounts and sums received, the undersigned hereby waives, releases and relinquishes any and all claims, rights or causes of action whatsoever arising out of or in the course of the work performed on the above-mentioned project, contract or event transpiring prior to the date hereof, excepting the right to receive payment for work performed and properly completed and retainage, if any, after the date of the above-mentioned payment application or invoices.

Signed and delivered the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Company \_\_\_\_\_

By: \_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Signature)

Title: \_\_\_\_\_

Before me, the undersigned Notary Public in and for the said County and State, personally appeared \_\_\_\_\_,

and acknowledged execution of the foregoing affidavit as his/her voluntary act and deed and further stated that the facts recited are true of his/her personal knowledge.

My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public  
Residence County/State: \_\_\_\_\_

**EXHIBIT "N"**

**AFFIDAVIT AND FINAL WAIVER OF CLAIMS AND LIENS AND RELEASE OF RIGHTS FOR SUBCONTRACTORS**

The undersigned, who is the \_\_\_\_\_ (designate title) of \_\_\_\_\_ which is the \_\_\_\_\_ (designate whether Trade Contractor, supplier or otherwise) for the \_\_\_\_\_ (designate the type of work, supplies or services rendered) on the improvements constructed on the premises hereafter identified, declares that his/her contract with \_\_\_\_\_ (Construction Manager) is in the total amount of \$ \_\_\_\_\_, which includes extras and all change orders to the date hereof.

The undersigned further states that as of \_\_\_\_\_ (date) all work on said project has been performed and completed in accordance with the plans and specifications for the project, and said work has been accomplished in accordance with the terms and conditions of his/her subcontract and those documents which, by reference, are a part of said subcontract. The total value of work completed and material stored is \$ \_\_\_\_\_. Of this amount, \$ \_\_\_\_\_ has been received (the receipt and sufficiency of which is hereby acknowledged by the undersigned) including \$ \_\_\_\_\_ in payment of Payment Application or Invoice Number \_\_\_\_\_. A total of \$ \_\_\_\_\_ is being held as retainage.

In consideration of the amounts and sums received, the undersigned does hereby waive and release to the **City of Memphis (Owner)** and to \_\_\_\_\_ (Construction Manager) any and all claims, liens, and rights to liens upon the premises described below and upon improvements now thereon, and upon the monies or other considerations (due as of the date of the aforesaid payment application or invoices from the **City of Memphis (Owner)** or \_\_\_\_\_ (Construction Manager) or from any other person, firm or corporation, said claims, liens, and rights to liens being on account of labor, services, materials, fixtures or apparatus heretofore furnished by or at the request of the undersigned. The premises as to which said claims, liens, and rights to liens are hereby released are identified as follows:

**Project Name:** \_\_\_\_\_  
**Address of Project:** \_\_\_\_\_  
**City:** Memphis      **County:** Shelby      **State:** TN      **Zip Code:** \_\_\_\_\_

The undersigned further represents and warrants that s/he is duly authorized and empowered to sign and execute this waiver on his/her own behalf and on behalf of the company or business for which s/he is signing; that he has properly performed all work and furnished all the materials of the specified quality per plans and specifications and in a good and workmanlike manner as required by the contract; that s/he has paid for all the labor, materials, equipment, and services that s/he has used or supplied to the above premises as required by the contract; that s/he has no other outstanding and unpaid payment applications, invoices, retentions, holdbacks, chargebacks or unbilled work or materials against \_\_\_\_\_ (Construction Manager); and that any materials which have been supplied or incorporated into the above premises were either taken from his/her fully-paid or open stock or were fully paid for and supplied as stated on the payment application or invoice.

The undersigned further agrees to reimburse and does hold harmless and fully indemnify the **City of Memphis (Owner)** and \_\_\_\_\_ (Construction Manager) for any losses or expenses should any such claims, liens, or rights to liens be asserted (by the undersigned or by any laborer, materialman or subcontractor of the undersigned), including, without implied limitation, attorneys' fees incurred in the defense thereof.

The undersigned further accepts and acknowledges the receipt of the aforesaid sums in full accord and satisfaction for the aforementioned claims with full knowledge that the contractors, **City of Memphis (Owner)** and \_\_\_\_\_ (Construction Manager), their successors and assigns, are relying thereon; and furthermore, the undersigned agrees to perform, now and in the future, each and every covenant and provision of this written contract or supplier's agreement (as the case may be) as modified or changed in writing with \_\_\_\_\_ (Construction Manager) or any Trade Contractor of \_\_\_\_\_ (Construction Manager) hereby acknowledging that said contract or supplier's agreement is now in full force and effect.

In addition, for and in consideration of the amounts and sums received, the undersigned hereby waives, releases and relinquishes any and all claims, rights or causes of action whatsoever arising out of or in the course of the work performed on the above-mentioned project, contract or event transpiring prior to the date hereof, excepting retainage, if any, after the date of the above-mentioned payment application or invoices.

Signed and delivered the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.      Company \_\_\_\_\_  
By: \_\_\_\_\_  
(Printed Name)  
\_\_\_\_\_  
(Signature)  
Title: \_\_\_\_\_

Before me, the undersigned Notary Public in and for the said County and State, personally appeared \_\_\_\_\_, and acknowledged execution of the foregoing affidavit as his/her voluntary act and deed and further stated that the facts recited are true of his/her personal knowledge.

My Commission Expires: \_\_\_\_\_

\_\_\_\_\_ Notary Public: \_\_\_\_\_

Residence County/State: \_\_\_\_\_



**EXHIBIT "O"**

**CITY OF MEMPHIS  
2019 BUILDING WAGE RATES**

**Rates Effective January 1, 2019 through December 31, 2019**

Boilermakers	\$25.35
Brickmasons and Blockmasons	\$14.35
Carpenters	\$15.20
Tile and Marble Setters	\$15.00
Cement Masons and Concrete Finishers	\$12.60
Construction Laborers	\$10.70
Paving, Surfacing, and Tamping Equipment Operators	\$14.05
Operating Engineers and Other Construction Equipment Operators	\$14.80
Drywall and Ceiling Tile Installers	\$14.25
Tapers	\$16.45
Electricians	\$16.70
Glaziers	\$14.55
Insulation Workers, Mechanical	\$16.00
Painters, Construction and Maintenance	\$13.00
Pipelayers	\$14.35
Plumbers, Pipefitters, and Steamfitters	\$17.20
Reinforcing Iron and Rebar Workers	\$15.75
Roofers	\$13.95
Sheet Metal Workers	\$12.65
Structural Iron and Steel Workers	\$16.55
Solar Photovoltaic Installers	\$18.50
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	\$12.25
Helpers--Carpenters	\$12.80
Helpers--Electricians	\$10.85
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$10.15
Helpers--Roofers	\$10.25
Construction and Building Inspectors	\$17.8

**EXHIBIT "P"**

**CITY OF MEMPHIS  
2019 HIGHWAY WAGE RATES**

**Rates Effective January 1, 2019 through December 31, 2019**

<b>CLASSIFICATION</b>		<b>WAGE</b>
Bricklayers	Ladrillero	\$16.15
Carpenters/Leadperson	Carpintero o Lider	\$19.84
Class "A" Operators	Operador Clase A	\$21.68
Class "B" Operators	Operador Clase B	\$19.34
Class "C" Operators	Operador Clase C	\$20.10
Class "D" Operators	Operador Clase D	\$18.66
Concrete Finisher	Terminador de Cemento	\$17.40
Drill Operation (cassion)	Operador de Perfordora	\$33.61
Electricians	Electricista	\$30.11
Farm Tractor Operator (Power Broom)	Operador de Tractor de Rancho	\$15.29
Iron Workers (Reinforcing)	Herrero	\$18.44
Iron Workers (Structural)	Herrero de Estructura	\$19.13
Mechanic (Class I) Heavy Duty	Mecanico Clase 1	\$24.31
Mechanic (Class II) Light Duty	Mecanico Clase 2	\$21.54
Painter/Sandblaster	Pintor o Lijador	\$29.85
Powder Person Blaster	Proveedor de Explosivos	\$22.40
Skilled Laborer	Obrero Diestro	\$17.30
Survey Instrument Operator	Operador de Agrimensor	\$23.68
Sweeping Machine (Vacuum)	Operator Operador de Barredora	\$17.63
Truck Driver (2 Axles)	Camionero (2 ejes)	\$17.39
Truck Driver (3/4 Axles)	Camionero (3 o 4 ejes)	\$16.60
Truck Driver (5 or more axles)	Camionero (5 o más ejes)	\$18.61
Unskilled Laborer	Obrero no Diestro	\$14.84
Worksite Traffic Coordinator	Coordinar de Trafico en el Lugar de Trabajo	\$19.12
Crane Operator	Operador de la Grua	\$22.15

**EXHIBIT "O"**

**CITY OF MEMPHIS CERTIFICATE OF DRUG FREE WORKPLACE**

As Construction Manager, Trade Contractor, or Sub-subcontractor on a City of Memphis Construction Contract,

**(NAME OF PROJECT)**

the undersigned states that it acknowledges and adheres to the City of Memphis Drug Free Workplace policy and if awarded a contract for this project, agrees in performance of work:

1. To require drug and alcohol screening (urine testing, breath analysis, or other testing procedures) in the following situations: Pre-Employment; Department of Transportation Commercial Drivers, Reasonable Suspicion; Post Accident and Follow Up Drug Testing as part of Substance Abuse Rehabilitation.
2. To operate a drug free workplace program or alcohol testing program with requirements at least as stringent as the City of Memphis.

Contractor's Name

\_\_\_\_\_

\_\_\_\_\_

Date

\_\_\_\_\_

Signature

\_\_\_\_\_

Printed or Typed Name and Title