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## **Addendum No. 04**

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FEMA HMGP Phase II Safe Room

Barnwell County School District  
Barnwell, SC 29812

Tt Project No. 213-207015-24001  
BCSD No.:BCSD-SAFE ROOM 03

Addendum No. 04  
to  
FEMA HMGP Phase II Safe Room – Contract Documents

November 01, 2024  
.....

To: ALL BIDDERS

This ADDENDUM forms a part of the BIDDING AND CONTRACT DOCUMENTS and modifies the following documents:  
Original DRAWINGS dated September 11, 2024  
Original PROJECT MANUAL dated September 11, 2024

Acknowledge receipt of the ADDENDUM in the space provided on the FORM OF PROPOSAL

This ADDENDUM consists of five (5) pages and the following:

### **3.1 GENERAL ADMINISTRATIVE DISCUSSION**

- A. **The BID OPEN will not be postponed.**
- B. Critical Dates:
  - 1. **Bid Due Date: Nov. 07, 2024 2:00pm**
  - 2. Cut off for Substitutions: October 23, 2024
  - 3. Cut off for Questions/Clarifications/or Interpretations: October 29, 2024
  - 4. Last Addendum (for technical content): Nov. 01, 2024
- B. Please direct all requests for information/clarifications to [tt-projectadmin@tetrattech.com](mailto:tt-projectadmin@tetrattech.com) and Tabi Heath at [tabi.heath@tetrattech.com](mailto:tabi.heath@tetrattech.com)

### **3.2 PROJECT MANUAL MODIFICATIONS:**

- A. Replace AIA Document A101 Standard Form of Agreement between Owner and Contractor (Including Exhibit A) South Carolina Division of Procurement Services, Office of State Engineer Version, with "AIA Document A 101-2017 (Addendum #04 Attachment #02), with Exhibit A (Addendum #04 Attachment #03)
- B. Replace AIA Document A201 General Conditions of the Contract for Construction South Carolina Division of Procurement Services, Office of State Engineer Version South Carolina Division of Procurement Services, Office of State Engineer Version, with "AIA Document A 101-2017 (Addendum #04 Attachment #01).
- C. **Section 02 30 00 Geotechnical Report:**

1. Replace the **Geotech Report in the manual** with the Geotech Report (**Addendum #04 Attachment #04**).
2. Delete the paragraph after **Under-slab Drainage** on pages 15-16 and add the following paragraph: "To maintain the control of the groundwater under the new concrete slab beyond the temporary sizing, the ditches will be converted to french drains. French drains are stone-filled, non-woven drainage fabric-lined ditches with a drainage pipe at their bases. The drainage pipes used in the finger ditches of be 4-inch diameter, perforated, corrugated plastic pipes will be the permanent system. The drainage media should be #57 stone or a similar open-graded stone. The fabric should be laid so that it will overlap at least 1 foot at the top of the trench. The individual french drains should be interconnected and routed to the catch basin YI #C-2 storm drainage structure. A 6-inch, solid corrugated plastic pipe can be used for the system collection. The outlet should include a functioning flapper valve or other one-way valve to allow water to freely run from the underdrain system but not into the system and recharge it."

D. **Section 03 30 00 Concrete:**

1. The page number from "03 00 00" to "03 30 00".
2. Add the following paragraph: "2.4.C. The vapor should be a minimum of 20 mil polyethylene."

**3.3 PROJECT DRAWINGS MODIFICATIONS:**

A. Sheet S-301 Dome Reinforcing Section:

1. The Outside of the Veneer dimensions should be changed from 188'-0" to 187'-0".
2. Change the top of perimeter wall dimension from "16'-0" to 17'-4"

B. Sheet A-200

1. **ADD** notes 9. To Keynotes "9. Provide precast concrete on top of the masonry mechanical protection walls"
2. This notes should to all the masonry mechanical protection walls on all three elevations.

C. Sheet A-503

1. Section Details 1 & 2: The spray foam insulation is shown incorrectly. The spray foam should be with the horizon line of the foam at the top of the CMU." Roof foam is 4" and wall foam is 2". Also, refer to S-302 detail 301 for more information about the spray foam.

D. Sheet A-501

1. **ADD** the following note to wall Type P1: "Where this wall is exposed to an open ceiling area the CMU will be 12' high w/ metal stud and drywall to the roof structure above the same as Wall Type P2.
2. Add the following note to wall Type P5: "Drywall must meet the requirements of (UL Design #U403 – 2HRS)

E. Sheet A-602 Storefront Elevation: Add the following glass type information: GL-1 = 1" Insulated laminated glass, interior 1/4" clear, exterior 1/4" clear low EGL-2 = 1" Insulated laminated spandrel glass w/ 1" rigid insulation, and GL-3 = single pane laminated glass.

**3.4 REQUEST FOR INFORMATION/CLARIFICATIONS (RFI'S):**

**Question #01:** Glass Legend required.

**Response:** See paragraph 3.3.E in the body of this addendum for glass legend information.

**Question #02:** Page 15 of the soils report discusses French Drains. Are they required? If so, please give us a layout of where and how to connect to the new storm drainage.

**Response:** See paragraph 3.2.C in the body of this addendum.

**Question #03:** Page 10 of the Concrete Unit Masonry spec 3.5 B states, "Install molded-polystyrene insulation units into masonry unit cells before laying units. "Please confirm what type of unit and where these are required.

**Response:** The CMU at the dome wall does not require any insulation units. Foam insulation is sprayed on the inside of the wall before the shotcrete is applied.

- Question #04:** Are we totally responsible for Data/Comm, access control, security, and video or is the district going to use their own contractor and we are just responsible for raceways and backboxes?  
**Response:** **Data Comm is in-house and PRTC, and Video | Security - Video: M/M Glass | Security: Vector Security**
- Question #05:** The drawings state that we need to bring a 1" conduit into the main building for fiber. Do we have a general location for this and a preferred method of entering the main building?  
**Response:** **Off of Jackson Street.**
- Question #06:** A110 show 93'-6" radius to exterior masonry wall , S301 show 94'-0" , confirm which is correct.  
**Response:** **See paragraph 3.3.A.1 in the body of this addendum.**
- Question #07:** A-200 & A-302 call out top of masonry wall at 17'-4" AFF. S301 shows top of masonry at 16'-0" AFF. , confirm which is correct.  
**Response:** **See paragraph 3.3.A.2 in the body of this addendum.**
- Question #08:** Please confirm exterior wall spray foam thickness at 2". There are conflicting thickness's shown.  
**Response:** **See paragraph 3.3.C in the body of this addendum.**
- Question #09:** Please confirm Sprayfoam thickness at 4". There are conflicting thickness's shown.  
**Response:** **See paragraph 3.3.C in the body of this addendum.**
- Question #10:** Please confirm - Concrete (shotcrete) finish is not expected to be troweled or leveled and will be a rough sprayed surface when our work is complete - not smooth as shown in details  
**Response:** **The will be a typical shotcrete finish.**
- Question #11:** Is Primary power (one 70 amp, 2 pole breaker) and 4 duplex receptacles for 110 power will be available for construction from the Owner? If so, is there a charge?  
**Response:** **The contractor will provide their owner temporary electrical service.**
- Question #12:** Is Water for concrete washout and clean up will be available for our use (approx 100 gallons per day) from the Owner? If so, is there a charge?  
**Response:** **If the contractor wants they can tap into an exterior hose bib on the existing High School at no charge. However District does not guarantee any quality or flow rate from the hose bibb.**
- Question #13:** Door frame details indicate they are installed and the masonry is laid to the frame. This is not typical of dome construction. Door frames are typically anchored into the shotcrete wall, after shotcrete work is complete. Is this acceptable?  
**Response:** **Yes**
- Question #14:** Drawing S-111 indicates reinforcing for masonry wall including the horizontal reinforcing. Are there to be masonry bond beams where the horizontal reinforcing occurs?  
**Response:** **Yes the wall is solid grouted**
- Question #15:** Can you please advise what your network cabling standards are for Barnwell County School District?  
  - Category 6 or 6A?
  - Single Mode or Multimode Fiber?-
  - How many strands?
  - Do you have preferred cable manufacturers? Belden, Leviton, Panduit, Siemon?**Response:** **Use Cat 6, use Single Mode, no cable preferred manufactures.**
- Question #16:** The plan drawings just state "data port". Do you want singles or dual data ports at each data drop? Do you have service loop requirements?  
**Response:** **Duals and Quads no singles | 20'**
- Question #17:** Are you going to have the General Contractor that is awarded the project select the low voltage contractor? Or does the network cabling scope fall under the South Carolina State Contract?  
**Response:** **The network cabling is NIC for this contract.**

**Question #18:** There are numerous problems with partition type designations labeled on the floor plan:

- There are partitions that separate rooms with ceilings from areas that are open to the structure that are designated type P1.8. Partition type 1.8 is a CMU wall extending 8" above the ceiling. What happens when there is no ceiling on one side of the partition?
- There are partitions that are labeled P1.8 on the plans that are shown on the building sections as extending to the bottom of the structure above. For example the partition separating the visiting locker rooms from the multipurpose safe room.
- There are partitions that are labeled P1.8 on the plans that structurally support the mezzanine slabs. These partitions would need to extend to the underside of the mezzanine, not 8" above the ceiling.
- Partition type P5 is noted as a UL U905 2 hour rated wall. While the lower CMU portion of the partition would be 2 hour rated, the upper metal stud and drywall portion would not meet 2 hour rating requirements.

**Response:** See paragraph 3.3.D in the body of this addendum.

**Question #19:** 111/S-111 refers to architectural for screen wall cap information. There are no architectural details for the screen walls. Please provide.

**Response:** See paragraph 3.3.B in the body of this addendum.

**Question #20:** **Question #26:** Where 5/8" exterior sheathing is noted what type of material is required?

**Response:** See Spec section 06 16 00 Sheathing paragraph 2.2.B

**Question #21:** What is the required thickness of the vapor barrier under the slab on grade?

**Response:** See paragraph 3.2.D.2 in the body of this addendum.

**Question #22:** What is the required concrete strength for the mezzanine slabs on deck?

**Response:** 4000 PSI

**Question #23:** Is the concrete for the mezzanine slabs on deck normal weight or lightweight?

**Response:** Normal Weight

**Question #24:** 1/A-503 doesn't show anything at the bottom of the parapet framing. Will the bottom track and underside of the 12" CMU remain exposed?

**Response:** Not totally sure what you are referring to; however, the metal strapping is part of an assembly that diverts the rainwater from the Dome roof to the ground. Also see paragraph 3.3.C in the body of this addendum.

**Question #25:** **Question #32:** Are we to provide the low voltage systems or will it be handled by others (excluding fire alarm of course) The specs are lacking for details on the telecom/data cabling, fiber, and jacks. Site plan calls for terminating fiber in "main building" but that location is not shown.

**Response:** BCSD will provide the voltage system.

**Question #26:** Please confirm how many copies of the bid form are required for the bid.

**Response:** Refer to SE-310, Invitation for Design-bid-Build Construction Services in the frontend of the specifications.

**Question #27:** Do we need to include the "Exhibit A Certifications" in addendum #1 with the bid or would that be required after bid.

**Response:** Exhibit A is an attachment to the contract AIA 102 that provides amendments to the contract and is there to provide information about the type of contract for the successful bidder.

**Question #28:** On Architectural plans A503 details 2 & 3 show the rigid insulation. Is the insulation under the entire slab or only 2' wide around the perimeter of the building?

**Response:** The under slab perimeter insulation is 2' wide per industrial standard.

**SUBSTITUTION REQUESTS**

NA

**ATTACHMENTS**

1. AIA Document A 201-2017 (Addendum #04 Attachment #01)
2. AIA Document A 101-2017 (Addendum #04 Attachment #02)
3. Exhibit A (Addendum #04 Attachment #03)
4. Geotech Report (Addendum #04 Attachment #04)

**END OF ADDENDUM No. 04**

# DRAFT AIA® Document A201® – 2017

## General Conditions of the Contract for Construction

### for the following PROJECT:

(Name and location or address)

« As described in the Owner's RFP for the development and construction of a regional  
saferoom and gymnasium

»

### THE OWNER:

(Name, legal status and address)

« Barnwell County School District

»

### THE CONTRACTOR:

### THE ARCHITECT:

(Name, legal status and address)

« « « « »

« « »

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### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, *Guide for Supplementary Conditions*.

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User Notes: **(Addendum #04 Attachment #01)**

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## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 Basic Definitions**

#### **§ 1.1.1 The Contract Documents**

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

#### **§ 1.1.2 The Contract**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 1.1.3 The Work**

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

#### **§ 1.1.4 The Project**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

#### **§ 1.1.5 The Drawings**

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

#### **§ 1.1.6 The Specifications**

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### **§ 1.1.7 Instruments of Service**

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### **§ 1.1.8 Initial Decision Maker**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### **§ 1.2 Correlation and Intent of the Contract Documents**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### § 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

### § 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### § 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### § 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

### § 1.7 Digital Data Use and Transmission

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

### § 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.



## ARTICLE 2 OWNER

### § 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a single representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative, and no one else.

### § 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

### § 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. Information furnished by the Owner relating to surveys, subsurface investigations, soil borings, utility line locations and other similar information is for general information only and is not part of the Contract Documents. The furnishing of such information by the Owner shall not excuse the Contractor from responsibility for verifying existing grade elevations, conditions and dimensions of existing

structures and visible or observable features at the project site. The Contractor shall report to the Architect and Owner any errors or inconsistencies found in such information. The Contractor agrees to establish all lines and levels required to properly execute the Work and shall be responsible for their maintenance and accuracy.

**§ 2.3.5** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

**§ 2.3.6** Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

#### **§ 2.4 Owner's Right to Stop the Work**

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3. The Owner waives no rights by failing or declining to exercise its discretion of rights under this section.

#### **§ 2.5 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15. The Owner waives no rights by failing or declining to exercise its discretion of rights under this section.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 General**

**§ 3.1.1** The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

**§ 3.1.3** The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

#### **§ 3.2 Review of Contract Documents and Field Conditions by Contractor**

**§ 3.2.1** Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. The Contractor has evaluated and satisfied itself with respect to the visible or observable conditions and limitations under which the Work is to be performed, including without limitation, (1) the physical condition and safety of the Project site and existing improvements located thereon, (2) the location, condition, layout, and nature of the Project site and surrounding areas, (3) generally prevailing weather conditions, and (4) availability and cost of labor, materials, tools, and equipment.

- .1 In the Contract Documents where discrepancies are apparent, detailed information is lacking, or interpretation is not clear, the Contractor shall secure required information from the Architect in writing before proceeding with the work. Items that are detailed and/or specified but not distinctly located on the drawings shall be located by the Architect.
- .2 When more detailed indication of design intent, or an interpretation of the Contract Documents for resolution of any errors, inconsistencies, or omissions in the Contract Documents is required for performance of the Work, the Contractor shall submit a written request to the Architect in the form of a Request for Information (RFI). The Contractor shall request and receive from the Architect, in writing, such information or interpretation before proceeding with the Work.
- .3 The Contractor shall verify all grades, lines, levels and dimensions indicated or shown on the plans and specifications prior to beginning with Work and shall immediately report in writing any errors or inconsistencies to the Architect before commencing the Work.
4. Contractor shall verify the accuracy and completeness of all design drawings and specifications and shall promptly notify Owner of any errors or omissions in same. The Owner makes no warranties, express or implied, regarding the sufficiency of any plans, drawings, or specifications. Contractor assumes full responsibility for any such errors or omissions that he fails to bring to Owner's attention.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### § 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor shall establish and maintain barricades, fencing, signage, and other effective measures to keep the Project site secure from all persons, including especially students, not engaged in performing duties on the Project.

#### § 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. The Contractor shall maintain and enforce compliance with personnel security measures required by the Owner, non-fraternization with the Owner's students or staff, and with reasonable requirements of the Owner pertaining to scheduling of Work that may interfere with Owner's programs and operations at nearby occupied facilities. The Owner reserves the right to require the Contractor to remove from the project any employee whose actions are detrimental or disruptive to the Work or the Owner's programs and operations.

.1 Contractor certifies compliance with the Drug-Free Workplace Act, S.C. Code Title 44, Ch. 107.

#### § 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

#### § 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

#### § 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. The Contractor shall comply with all applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to its performance under this Contract, and with equal employment opportunity programs, and other programs as may be required by governmental and quasi-governmental authorities, including but not limited to 2 C.F.R. Part 200. Contractor understands that the Owner is using federal funds for this Project, which entails additional federal requirements. Contractor agrees to become familiar with and abide by those requirements and to assist Owner in meeting/complying with all such requirements. Exhibit A to this Agreement, which is incorporated herein, contains a summary of these laws and requirements.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

#### § 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

#### § 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### § 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

### § 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### § 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the

Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

**§ 3.12.7** The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

**§ 3.12.8** The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

**§ 3.12.9** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

**§ 3.12.10** The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

**§ 3.12.10.1** If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

**§ 3.12.10.2** If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.



### § 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by the Owner, applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### § 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents. All patching shall be performed by workers skilled in the appropriate trades for the patch materials.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

### § 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 Completed Work to be occupied by the Owner shall be left in suitable condition so that no additional cleaning, waxing, polishing, or other janitorial operations are required, unless specifically authorized by the Contract Documents or otherwise agreed.

### § 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

### § 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

### § 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be



liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

**§3.18.3** The Contractor's indemnity obligations under Paragraph 3.18 shall also specifically include, without limitation, all fines, penalties, damages, liability, costs, expenses (including, without limitation, reasonable attorney's fees), and punitive damages (if any) arising out of, or in connection with, any (i) violation of or failure to comply with any law, statute, ordinance, rule, regulation, code, or requirement of a public authority that bears upon performance of the Work by the Contractor, a Subcontractor, or any person or entity for whom either is responsible, (ii) means, methods, procedures, techniques, or sequences of execution or performance of the Work, and (iii) failure to secure and pay for permits, fees, approvals, licenses, and inspections as required under the Contract Documents, or any violation of any permit or other approval of any public authority applicable to the Work, by the Contractor, a Subcontractor, or any person or entity for whom either is responsible.

#### **ARTICLE 4 ARCHITECT**

##### **§ 4.1 General**

**§ 4.1.1** The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

**§ 4.1.2** Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

##### **§ 4.2 Administration of the Contract**

**§ 4.2.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

**§ 4.2.3** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

##### **§ 4.2.4 Communications**

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

**§ 4.2.5** Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect must advise the Owner's Representative of and, unless directed otherwise after consulting the Owner, to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. The Architect will respond to the Contractor's RFI in the form of a written memorandum for minor clarifications, by issuance of an Architect's Supplementary Instruction (ASI) for minor changes in the Work, or by a Request for Change Order Proposal or Construction Change Directive for information or interpretations which may affect the Contract Sum or the Contract Time.

§ 4.2.15 Instructions from the Architect to the contractor constitute an interpretation of the Contract Documents and shall not be construed as an act of supervision.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### § 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

In selecting subcontractors and suppliers the Contractor shall make a good faith effort to promote the goals of Owner's F/S/MBE and other relevant procurement policies.

- .1 The Contractor will provide personnel directly responsible for the projects assigned to them capable of describing the project scope of work, subcontractor requirements to provide services and time line for when the work will be performed.
- .2 The Contractor will promote and generate the interest of local and regional bidders and assist the Owner and Architect in developing a Master List of Vendors and Subcontractors, that have shown interest in submitting bid proposals for the Projects. This list will include Vendors and Subcontractors, a minimum of two each, for all categories of work included in the total Project. The Contractor will be expected to thoroughly define all subcontract work categories in such a way that all work needed to complete the Project is covered. All Subcontracts will be held in the Contractor's name.
- .3 This Vendor/Subcontractor list will include only qualified companies that are professionally capable of managing and performing the work. To qualify companies, the Contractor shall work with the Owner to establish for each Vendor/Subcontractor:
  - .1 Experience on projects of similar size and complexity;
  - .2 Owner/Architect/Contractor/Developer references;
  - .3 Financial stability;
  - .4 Quality of work;
  - .5 Qualified project and field management personnel;

- .6 Projected workload during the duration of this Projects;
- .7 Claim and litigation history;
- .8 Bonding capabilities.

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### § 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

### § 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### § 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

#### § 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

#### § 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

### ARTICLE 7 CHANGES IN THE WORK

#### § 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

#### § 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

### § 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be

reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### § 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### ARTICLE 8 TIME

#### § 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

#### § 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

#### § 8.3 Delays and Extensions of Time

§ 8.3.1 See § 15.1.8 for provisions governing delays and extensions of time.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

### ARTICLE 9 PAYMENTS AND COMPLETION

#### § 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

#### § 9.2 Schedule of Values

The Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the



schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

### **§ 9.3 Applications for Payment**

**§ 9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values for completed portions of the Work. The application shall be notarized and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

**§ 9.3.1.2** Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

**§ 9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.



## § 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect will withhold a Certificate for Payment in whole, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made.

If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. The Contractor and Architect will agree on a revised amount, and the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect will also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

## § 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor as required by law

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner does not and shall not constitute acceptance of Work not in accordance with the Contract Documents.

**§ 9.6.** Contractor must provide and keep in force at all times a payment bond in the full penal sum of the Contract Sum.

**§ 9.6.8** Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

**§ 9.7 Failure of Payment**

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within fifteen (15) days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within fifteen (15) days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

**§ 9.8 Substantial Completion**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use, all Project systems included in the Work or designated portion thereof have been successfully tested and are fully operational; all required governmental inspections and certifications required of the Work have been made, approved and posted; designated initial instruction of Owner's personnel in the operation of the Project systems has been completed; and all the required finishes set out in the Construction Documents are in place. The only remaining Work shall be minor in nature so that the Owner can occupy the Work or the applicable portion of the Work for all its intended purposes on that date and the completion of the Work by the Contractor will not materially interfere with or hamper Owner's normal school operations or other intended use. As a further condition of a determination of Substantial Completion, the Contractor shall certify that all remaining Work shall be completed within sixty (60) calendar days. Where a South Carolina Office of School Facilities Certificate of Occupancy is needed for the Owner's intended use, the OSF Certificate of Occupancy for the Work is a necessary but not sufficient requirement for Substantial Completion of the Work under this § 9.8.1

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall jointly prepare and submit to the Architect a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the list, the Architect, assisted by the Contractor, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. The Contractor shall then submit a request for another inspection by the Architect, assisted by the Contractor, to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the Owner shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate.

**§ 9.8.3** Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification

by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

**§ 9.9 Partial Occupancy or Use**

**§ 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any; security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

**§ 9.9.3** Occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

**§ 9.10 Final Completion and Final Payment**

**§ 9.10.1** Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are

made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

### § 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable

to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

**§ 10.2.6** The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

**§ 10.2.7** The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

**§ 10.2.8 Injury or Damage to Person or Property**

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding fourteen (14) days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

**§ 10.3 Hazardous Materials and Substances**

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

**§ 10.3.2** Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**§ 10.3.3** To the fullest extent permitted by law and subject to the limitations on the Owner's exposure to both liability and damages pursuant to the South Carolina Tort Claims Act or any successor act, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

#### § 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 The Contractor's insurance shall include the following:

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§ 11.1.5.1 Workers' Compensation meeting statutory limits mandated by state and federal laws.

§ 11.1.5.2 Employers' Liability

\$1,000,000 Each Accident  
\$1,000,000 Disease-Policy Limit  
\$1,000,000 Disease Each Employee

§ 11.1.5.3 Commercial General Liability

\$1,000,000 Each Occurrence  
\$2,000,000 General Aggregate  
\$1,000,000 Personal and Advertising Injury  
\$2,000,000 Products-Completed Operations Aggregate

- .1 The policy shall include coverage for Premises-Operations and Personal Injury, including Explosion, Collapse and Underground hazards.
- .2 The policy shall include coverages for Products-Completed Operations and Contractual Liability.
- .3 The policy shall be endorsed to have the General Aggregate apply to each Project separately.
- .4 Products and Completed Operations insurance shall be maintained on all General Liability policies carried by the Contractor for a minimum period of at least eight (8) year(s) after final payment.
- .5 The Contractual Liability insurance shall include coverage sufficient to meet the obligations in Section 3.18 of A201-2017.
- .6 The policy shall not contain any exclusion for property damage to the Contractor's Work arising out of the product-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a subcontractor.
- .7 The policy shall not contain any exclusion or restriction of coverage for claims related to exterior insulation finish systems, synthetic stucco or similar exterior coating or surfaces.
- .8 The Owner and others shall be added as additional insureds.

§ 11.1.5.4 Automobile Liability (owned, non-owned and hired vehicles) for bodily injury and property damage:

\$1,000,000 Each Accident

§ 11.1.5.5 Contractor's Pollution Liability

\$1,000,000 Each Occurrence  
\$2,000,000 Aggregate

- .1 If a claim form is provided, the retroactive date must be earlier than the date of any work on site.
- .2 The Owner shall be added as an additional insured.

§ 11.1.5.6 Cyber Liability

\$1,000,000 Each Occurrence and Aggregate

- .1 The Insuring Agreements must include Network and Information Security and Communications and Media Liability.

§ 11.1.5.7 Unmanned Aircraft

\$1,000,000 Each Occurrence and Aggregate.

§ 11.1.5.8 Umbrella

The Contractor shall carry Umbrella Liability Insurance or Excess Liability with a minimum limit of \$10,000,000, and neither form may provide a narrower scope of coverage than the primary policies.

**§ 11.2 OWNER'S LIABILITY INSURANCE**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

**§ 11.3 PROPERTY INSURANCE**

**§ 11.3.1** Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract



Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an “all-risk” or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect’s and Contractor’s services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

#### § 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

#### § 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner’s option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner’s property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner’s property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.



§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

#### § 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner for them according to their interests as they may appear. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 Upon occurrence of an insured loss, Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement.

#### § 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Contractor must furnish bonds covering faithful performance of the Contract and payment of obligations. The bonds must meet the same minimum legal and financial rating standards as required by the State Engineer for State construction contracts.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

### ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

#### § 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

## **§ 12.2 Correction of Work**

### **§ 12.2.1 Before Substantial Completion**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

- .1 There will be one final inspection of the Project by the Architect/Engineer, Contractor, and Owner during the eleventh or twelfth months of the warranty period. Any Work that is found to be defective or not in conformity with the Contract Documents shall be corrected by the Contractor within thirty (30) days of the issuance of notice of such Work that is found to be defective or not in conformity with the Contract Documents.

### **§ 12.2.2 After Substantial Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

**§ 12.2.2.2** The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

**§ 12.2.3** The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

**§ 12.2.4** The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

**§ 12.2.5** Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

## **§ 12.3 Acceptance of Nonconforming Work**

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 Governing Law

The Contract shall be governed by the law of South Carolina.

### § 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

### § 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

### § 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### § 13.5 Interest

Payments due and unpaid under the Contract Documents shall not accrue or bear interest.

### § 13.6 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

§ 13.6.1 Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations or repose shall not commence to run and any alleged cause of action shall not be deemed to have accrued in any and all events prior to the date of Substantial Completion.

§ 13.6.1.2 Between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion, any applicable statute of limitations or repose shall not commence to run and any alleged cause of action shall not be deemed to have accrued in any and all events prior to the date of issuance of the final Certificate for Payment, and

§ 13.6.1.3 After Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations or repose shall not commence to run and any alleged cause of action shall not be deemed to have accrued in any and all events prior to the date of any act or failure to act by the Contractor pursuant to any Warranty, the date of any correction of the Work or failure to correct the Work by the Contractor, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs first.

§ 13.6.1.4 Nothing in this Paragraph 13.6 shall be construed to deny the Owner or the Contractor the benefit of any legal doctrine or statutory provision measuring a statute of limitation or repose on the basis of the discovery doctrine; rather, the intent of Paragraph 13.6 is to firmly fix only the earliest, but not the actual, point in time to which such limitations or repose period could have begun to run.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 If subsequent to the Owner's exercise of rights under Article 14.2, it is finally determined in a judicial proceeding that the Owner lacked cause to terminate the Contract, the termination shall be deemed a Termination for Convenience pursuant to Article 14.4.

#### § 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

#### § 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts.

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 Claims

#### § 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

#### § 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law.

#### § 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

#### § 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 or Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

#### § 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### § 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 Claims for extension of time because of inclement weather shall be granted only when such inclement weather prevented the execution of major items of work on normal working days. Unusual inclement weather as used herein means unusually severe weather which is beyond the normal weather recorded and expected for the locality and/or the season or seasons of the year. Claims for adverse weather shall be based on actual weather conditions at the job site or other place of performance of the Work. If abnormal weather conditions result in a loss of scheduled work days that exceed the anticipated bad or severe weather days, the Contractor may submit a Claim for an extension of Contract Time for the scheduled work days that exceed the anticipated days. Only whole days will be considered for an extension of Contract Time. Fractions of days are not acceptable. No day will be counted as an adverse weather day when substantial Contractor forces are able to perform Work on the Project or when the stage of the Work on the Project is not adversely impacted.

§ 15.1.6.2 Severe, bad, or above normal working time weather during a 24-hour period does not necessarily extend

contract time. Such weather must be above normal weather and have a direct impact on the day's scheduled construction activities. Requests for weather day extensions will not be considered for:

- Weather not equal to or exceeding 0.1" of precipitation.
- Weather not directly impacting scheduled work.
- Weather days that are within the historic weather day count.

**§ 15.1.6.3** All weather-related Claims for an extension in Contract Time will be reviewed and approved by the Architect on an individual basis and in accordance with § 15.1.8.

**§ 15.1.6.5** Delays caused by untimely inspections by the S.C. Office of School Facilities are not a basis for a claim for additional time or an extension of time.

**§ 15.1.7 Waiver of Claims for Consequential Damages**

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

**§15.1.8 DELAYS AND EXTENSIONS OF TIME**

- .1 The Contractor is not entitled to an extension of time, compensation of any nature, costs, or damages, if the Contractor is delayed by an event or the occurrence of any risk, either of which was within the scope of the Contractor's contractual responsibility to foresee, estimate, predict, acquire, control, plan for, contract for, and manage in order to accomplish the Work required by the Contract Documents. The Contractor's responsibilities include, but are not limited to, the following:
  - .1 Anticipating and accounting for variable and inconsistent labor, materials, supplies, and site access;
  - .2 Subcontractor and supplier insolvency, default, non-performance (including the performance and correction of non-conforming work), and financial non-responsibility; and
  - .3 Other events for which the Contractor has the risk of anticipating and managing in order to accomplish the Work within the price and time called for in the Contract.
- .2 A basis may exist for an extension of time if:
  - .1 The Contractor is delayed in performing the Work, but solely to the extent that delays are caused by events that are beyond the control and/or contractual responsibility of the Contractor, its Subcontractors, and suppliers at every tier;
  - .2 Delays directly impact the Contractor's ability to achieve Completion of the Work in accordance with the Contract Time requirements established by the Contract Documents, as amended by executed Change Order;
  - .3 Delays cannot be made up by reasonable efforts otherwise which do not increase the Cost of the Work; and
  - .4 Delays stem from the following causes:

- a. (i) an act or failure to act on the part of the Owner, any consultant or employee of the Owner, or of a separate contractor employed by the Owner that is a breach of this Agreement; or (ii) an injunction against Owner or Owner's representatives;
  - b. Any other cause of delay not the responsibility of either the Owner or the Contractor, as defined herein. Such causes include, but are not limited to, inclement weather; acts of God; riots; civil commotions; acts of War; unavoidable casualties to the Work in progress, except where insurance pays the cost of resulting delays or extended General Conditions costs; epidemics; quarantine restrictions; organized labor disputes; freight embargoes; unanticipated and undiscoverable environmental issues (except as to matters addressed in Article 10); abnormal labor and material shortages not customarily encountered or caused by events not reasonably foreseeable; or other cause traditionally defined as "force majeure."
- .3** If the basis exists for an extension of time under subsection .2 and the Contractor has timely submitted a Claim documenting the basis for such extension, the Owner may exercise one of the following options:
- .1** The Owner may accept a reasonable and appropriate time extension to cover such delay;
  - .2** The Owner may order the Contractor to accelerate construction activity by working overtime and by adding extra forces in order to overcome such delays; or
  - .3** The Owner may employ a combination of the above remedies.
  - .4** Assessment of the existence of the basis for a time extension shall be determined by the latest construction schedule prior to the delay.
  - .5** The Owner shall not be obligated or liable to Contractor for, and Contractor hereby expressly waives claims against Owner on account of damages, costs, expenses, or related impacts that the Contractor, its Subcontractors, sub-subcontractors, suppliers or other persons may incur as a result of a cause noted under § 15.1.8.2.4. The Contractor agrees to give written notice to the Owner and the Architect of alleged intentional interference by the Owner within seven (7) days after such acts of interference occur or any claim based on such alleged acts of interference will be deemed waived by the Contractor. The Owner's exercise of any of its rights under any of the applicable provisions of the Owner-Contractor Agreement shall not, under any circumstances, be construed as intentional interference with the Contractor's performance of the Work.
  - .6** The Contractor further waives any Claim relating to time that is not made in accordance with applicable provisions of Article 15. Extensions of time occasioned by Change Orders shall be implemented in accordance with Article 7. A Change Order shall be a final adjudication of all time or impact related costs associated with such Change Order and shall release and waive any and all claims, costs, or damages resulting from such Change Order, whether or not accounted for in the Change Order as executed.
  - .7** The Contractor also waives and releases any Claim for additional costs of any nature premised upon the Owner's failure to give an extension of time.
  - .8** The Contractor is not entitled to a separate extension of the Contract Time for each one of the causes of delay that may have concurrent or interrelated effects on the progress of the Work. Concurrent causes of delay shall be considered a single delay. Furthermore, the Contractor is not entitled to an extension of time for concurrent delays that include delays due to the fault of the Contractor that, regardless of the delay caused by the Owner, increase the duration of the Work.



- .9 The Contractor shall not be entitled to any additional compensation for its inability to complete the Work early (or prior to the date of Substantial Completion set forth in the Agreement).

**§15.1.9** Contractor agrees that it shall make no claims against Owner for damages, charges, interest, additional costs or fees incurred by reason of delays or suspension of work caused by the Owner, other parties under the Owner's control, or any other cause in the performance of its work under this Agreement. Contractor's sole and exclusive remedy for delays, stoppage, or suspension of the work is an extension of time equal to the duration of the delay, stoppage, or suspension to allow the Contractor to complete its work under this Agreement.

**§ 15.2 Initial Decision**

**§ 15.2.1** Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

**§ 15.2.2** The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

**§ 15.2.3** In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

**§ 15.2.4** If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

**§ 15.2.5** The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

**§ 15.2.6** Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

**§ 15.2.6.1** Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### § 15.3 Mediation and Joinder

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation provided in § 15.3..

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation before an agreed-upon neutral under the S.C. Alternative Dispute Resolution rules. A demand for mediation shall be made in writing, delivered to the other party or parties related to the dispute. The demand may be made concurrently with the filing of litigation but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.3.5 The parties agree to be joined with every other party deemed necessary by the Owner for the full and proper examination, settlement or judgment of each dispute, claim, contract controversy, or civil action, whether in mediation, proceedings under the Owner's Procurement code, or any court of competent jurisdiction. This paragraph is procedural only, and such joinder does not affect the party's substantive legal position with regard to any other party.

## § 16 SUMMARY OF FEMA REQUIREMENTS

§ 16.1.1 During the performance of this contract, the Contractor agrees to comply with the provisions set forth in Exhibit A and to comply with the following:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such actions shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- b. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

- c. The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- d. The Contractor, if applicable, will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- e. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- f. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- g. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- h. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**§ 14.1.2** Contractor shall comply with the Contract Work Hours and Safety Standards Act. Contractor must compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a

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half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. Section 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous.

§ 14.1.3 Contractor shall aggregate, track, and account for all costs, expenses, and fees that are eligible for reimbursement under the FEMA grant for this project separately from any costs, expenses, and fees that are not eligible for such reimbursement, and shall invoice the Owner separately for any costs, expense, or fees that are not eligible for such reimbursement.

TELAR D

# DRAFT AIA® Document A101® – 2017

## Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

**AGREEMENT** made as of the « » day of « » in the year « 2024 »  
(In words, indicate day, month and year.)

**BETWEEN** the Owner:  
(Name, legal status, address and other information)

« Barnwell County School District »« »  
« »  
« »  
« »

and the Contractor:  
(Name, legal status, address and other information)

« »« »  
« »  
« »  
« »

for the following Project:  
(Name, location and detailed description)

« As described in the Owner's RFP for the development and construction of a regional  
saferoom and gymnasium »  
« »  
« »

The Architect:  
(Name, legal status, address and other information)

« »« »  
« »  
« »  
« »

The Owner and Contractor agree as follows.

**ADDITIONS AND DELETIONS:**  
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

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## EXHIBIT A FEMA CONTRACT PROVISIONS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:  
(Check one of the following boxes.)

☒ The date of this Agreement.

☐ A date set forth in a notice to proceed issued by the Owner.

☐ Established as follows:  
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

#### § 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:  
(Check one of the following boxes and complete the necessary information.)

[ « » ] Not later than « » ( « » ) calendar days from the date of commencement of the Work.

[ « X » ] By the following date: « » [Insert Expected Date of Substantial Completion] »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

| Portion of Work | Substantial Completion Date |
|-----------------|-----------------------------|
|                 |                             |

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

§ 3.3.4 Final completion of all work shall be performed within thirty (30) calendar days from the scheduled contract time for Substantial Completion, subject to adjustments as provided in the Contract Documents.

#### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » (\$ « » ), subject to additions and deductions as provided in the Contract Documents.

#### § 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

| Item | Price |
|------|-------|
|      |       |

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

| Item | Price | Conditions for Acceptance |
|------|-------|---------------------------|
|      |       |                           |

§ 4.3 Allowances, if any, included in the Contract Sum: (Identify each allowance.)

| Item | Price |
|------|-------|
|      |       |

§ 4.4 Unit prices, if any: (Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

| Item | Units and Limitations | Price per Unit (\$0.00) |
|------|-----------------------|-------------------------|
|      |                       |                         |

§ 4.5 Liquidated damages, if any: (Insert terms and conditions for liquidated damages, if any.)

#### «.1 Substantial Completion

Time is of the essence in all phases of the Work. It is specifically understood and agreed by and between Owner and Contractor that time is of the essence in the Substantial Completion of the Project and Owner shall sustain damages as a result of Contractor's failure, neglect or refusal to achieve Substantial Completion by the deadlines. Owner's damages are, and will continue to be, impracticable and extremely difficult to determine. The amounts stated below are the minimum value of the costs

and damages caused by failure of Contractor to complete the Work within the allotted or agreed extended times of Substantial Completion, the sums are liquidated damages and shall not be construed as a penalty, and they may be deducted from payments due Contractor if the delay occurs. The Owner's damages include, but are not limited to, additional compensation for personnel, attorneys' fees, architectural fees, engineering fees, program management fees, inspection fees, storage costs, food service costs, transportation costs, utilities costs, costs of temporary facilities, loss of interest on money, and other increased costs. Failure to complete the Work within the designated or agreed extended dates of Substantial Completion shall be construed as a breach of this Agreement, and the Owner may deduct from the Final Payment made to the Contractor a sum equal to \$1,000 per day for each and every additional calendar day beyond the agreed date of Substantial Completion.

## **.2 Final Completion**

In addition, timely Final Completion is an essential condition of this Agreement. Contractor agrees to achieve Final Completion of the Agreement within 60 calendar days of the designated or agreed extended date of Substantial Completion. Time is of the essence in the Final Completion of the Project and Owner shall sustain additional damages as a result of Contractor's failure, neglect or refusal to achieve Final Completion by the deadline. Owner's damages are, and will continue to be, impracticable and extremely difficult to determine. The amounts stated below are the minimum value of the costs and damages caused by failure of Contractor to complete the Work within the allotted or agreed extended times for Final Completion, and the sums are liquidated damages and shall not be construed as a penalty. The sum per day is a fair estimate of the pecuniary damages which will be sustained by the Owner including, but not limited to: potential hazards to students, staff and visitors, additional architectural, engineering, program management fees (and fees of any other consultants); increased administrative or operational expenses; additional attorney's fees; increased maintenance and custodial costs and additional, utilities, security and clean-up costs, and other increased costs. Failure to complete the Work within the designated or agreed extended dates of Final Completion shall be construed as a breach of this Agreement, and the amount of liquidated damages for each calendar day Final Completion is delayed beyond the date set for Final Completion shall be the sum of \$500 per day. Owner may deduct such liquidated damages from any Payment made to Contractor before or at Final Payment; or, if sufficient funds are not available, then Contractor shall pay Owner the amounts specified per day for each and every calendar day the breach continues after the deadline for Final Completion of the Work.

## **.3 Liquidated damages shall be in addition to, and not in lieu of, any other rights, claims or remedies Owner may have against Contractor. If the Work is not finally completed by the time stated in the Agreement, or as extended, no payments for Work completed beyond that time shall be made until the Project reaches Final Completion »**

### **§ 4.6 Other:**

*(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)*

« N/A »

## **ARTICLE 5 PAYMENTS**

### **§ 5.1 Progress Payments**

**§ 5.1.1** Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

**§ 5.1.2** The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

**§ 5.1.3** Provided that an Application for Payment is received by the Architect not later than the « 25th » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « 15th » day of the « next » month.



*(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

#### § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

*(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)*

« Retainage shall be withheld at Three and One-Half Percent (3.5%) »

§ 5.1.7.1.1 The following items are not subject to retainage:

*(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)*

« Not applicable. »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

*(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)*

« Not applicable. »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

*(Insert any other conditions for release of retainage upon Substantial Completion.)*

« Not applicable. »

**§ 5.1.8** Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## **§ 5.2 Final Payment**

**§ 5.2.1** Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

**§ 5.2.2** The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

## **§ 5.3 Interest**

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

*(Insert rate of interest agreed upon, if any.)*

« Zero » % « 0 »

## **ARTICLE 6 DISPUTE RESOLUTION**

### **§ 6.1 Initial Decision Maker**

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

« »

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« »

### **§ 6.2 Binding Dispute Resolution**

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

[ « » ] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[ « X » ] Litigation in the Court of Common Pleas in Barnwell County

[ « » ] Other *(Specify)*

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

*(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)*

« None; the Owner agrees to pay only verifiable and substantiated costs incurred to date of termination but no termination fees. »

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

*(Name, address, email address, and other information)*

«Dr. Crystal Stapleton, Superintendent »

« Barnwell County School District »

« »

« »

« »

« »

§ 8.3 The Contractor's representative:

*(Name, address, email address, and other information)*

« »

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« »

« »

« »

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

## § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

## § 8.5.3 PERFORMANCE BOND AND PAYMENT BOND

§ 8.5.3.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. The amount of each bond shall be equal to One Hundred Percent (100%) of the Contract Price.

§ 8.5.3.2

Payment and Performance Bonds must meet the same issuer financial ratings standards as would be required by the South Carolina State Engineer under the State Procurement Code.

§ 8.5.3.3

The Contractor shall deliver the required bonds to the Owner at least three days before the commencement of any Work at the Project site.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with a building information modeling exhibit, if completed, or as otherwise set forth below:

*(If other than in accordance with a building information modeling exhibit, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*

« N/A »

§ 8.7 Other provisions:

« N/A »

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction as amended by the parties
- .4 Exhibit A, FEMA Contract Provisions
- .4 Building information modeling exhibit, dated as indicated below:  
*(Insert the date of the building information modeling exhibit incorporated into this Agreement.)*

« »

.5 Drawings

| Number | Title | Date |
|--------|-------|------|
|        |       |      |

.6 Specifications

| Section | Title | Date | Pages |
|---------|-------|------|-------|
|         |       |      |       |

.7 Addenda, if any:

| Number | Date | Pages |
|--------|------|-------|
|        |      |       |

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

[ « » ] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*

« »

[ « » ] The Sustainability Plan:

| Title | Date | Pages |
|-------|------|-------|
|       |      |       |

[ « » ] Supplementary and other Conditions of the Contract:

| Document | Title | Date | Pages |
|----------|-------|------|-------|
|          |       |      |       |

**.9** Other documents, if any, listed below:

*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)*

« »

This Agreement entered into as of the day and year first written above.

\_\_\_\_\_  
**OWNER** (Signature)

«Dr. Crystal Stapleton, Superintendent  
Barnwell County School District »« »

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
**CONTRACTOR** (Signature)

« »« »

\_\_\_\_\_  
(Printed name and title)

**EXHIBIT A**  
**(Addendum #04 Attachment #03)**

**FEMA CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY UNDER FEDERAL AWARDS REQUIRED  
BY 2 C.F.R. §200.326 APPENDIX II TO 2 CFR §200**

**REMEDIES**

(For all awarded contracts with a value greater than \$150,000.00)

Any violation or breach of terms of this contract on the part of the Contractor or the Contractor's subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this contract. The duties and obligations imposed by the contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. Any violation or breach of terms of this contract of the Contractor or the Contractor's sub-contractors will be subject to the remedies, including liquidated damages, described in the bid specifications or Request for Proposal and the Client rules and regulations and special conditions which are incorporated herein by reference in their entirety.

**TERMINATION FOR CAUSE AND CONVENIENCE**

(For all awarded contracts with a value greater than \$10,000.00)

The Client reserves the right to terminate this contract for cause or convenience pursuant to the rules and regulations and special conditions which are incorporated herein by reference in their entirety.

**EQUAL EMPLOYMENT OPPORTUNITY**

(For all awarded contracts that meet the definition of "federally assisted construction contract" provided in 41 CFR Part 60-1.3) **Contractor must complete enclosed certification**

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:  
  
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the

rules, regulations, and relevant orders of the Secretary of Labor.

6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

#### **CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

(For all awarded contracts related to "mechanics and laborers" with a value greater than \$100,000.00)

- 1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- 2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in

the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

- 3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- 4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

#### **RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT**

(This requirement **does not apply** to the Public Assistance, Hazard Mitigation Grant Program, Fire Management Assistance Grant Program, Crisis Counseling Assistance and Training Grant Program, Disaster Case Management Grant Program, and Federal Assistance to Individuals and Households - Other Needs Assistance Grant Program, as FEMA awards under these programs do not meet the definition of "funding agreement." If FEMA federal award meets definition of "funding agreement" under 37 CFR §401.2(a), for all awarded contracts related to experimental, developmental, or research work type contracts)

##### **(a) Definitions**

- (1) *Invention* means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code, or any novel variety of *et seq.*
- (2) *Subject invention* means any invention of the *contractor* conceived or first actually reduced to practice in the performance of work under this *contract*, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 240l (d)) must also occur during the period of *contract* performance.
- (3) *Practical Application* means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or government regulations, available to the public on reasonable terms.
- (4) *Made* when used in relation to any invention means the conception or first actual reduction to practice of such invention.
- (5) *Small Business Firm* means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3- 12, respectively, will be used.
- (6) *Nonprofit Organization* means a university or other institution of higher education or an organization of the type described in section 501 (c) (3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.



(b) Allocation of Principal Rights

The *Contractor* may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the *Contractor* retains title, the Federal government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

(c) Invention Disclosure, Election of Title and Filing of Patent Application by *Contractor*

- (1) The *contractor* will disclose each subject invention to the *Federal Agency* within two months after the inventor discloses it in writing to *contractor* personnel responsible for patent matters. The disclosure to the agency shall be in the form of a written report and shall identify the *contract* under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the *agency*, the *Contractor* will promptly notify the *agency* of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the *contractor*.
- (2) The *Contractor* will elect in writing whether or not to retain title to any such invention by notifying the *Federal agency* within two years of disclosure to the *Federal agency*. However, in any case where publication, on sale or public use has initiated the one-year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by the *agency* to a date that is no more than 60 days prior to the end of the statutory period.
- (3) The *contractor* will file its initial patent application on a subject invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The *contractor* will file patent applications in additional countries or international patent offices within either ten months of the corresponding initial patent application or six months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where such filing has been prohibited by a Secrecy Order.
- (4) Requests for extension of the time for disclosure, election, and filing under subparagraphs (1), (2), and (3) may, at the discretion of the *agency*, be granted.

(d) Conditions When the Government May Obtain Title

The *contractor* will convey to the *Federal agency*, upon written request, title to any subject invention-

- (1) If the *contractor* fails to disclose or elect title to the subject invention within the times specified in (c), above, or elects not to retain title; provided that the *agency* may only request title within 60 days after learning of the failure of the *contractor* to disclose or elect within the specified times.
- (2) In those countries in which the *contractor* fails to file patent applications within the times specified in (c) above; provided, however, that if the *contractor* has filed a patent application in a country after the times specified in (c) above, but prior to its receipt of the written request of the *Federal agency*, the *contractor* shall continue to retain title in that country.
- (3) In any country in which the *contractor* decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention.

(e) Minimum Rights to *Contractor* and Protection of the *Contractor* Right to File

- (1) The *contractor* will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the *contractor* fails to disclose the invention within the times specified in (c), above. The *contractor's* license extends to its domestic subsidiary and affiliates, if any, within the corporate structure of which the *contractor* is a party and

includes the right to grant sublicenses of the same scope to the extent the *contractor* was legally obligated to do so at the time the *contract* was awarded. The license is transferable only with the approval of the *Federal* to which the invention pertains.

- (2) The *contractor's* domestic license may be revoked or modified by the *funding Federal agency* to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR part 404 and *agency* licensing regulations (if any). This license will not be revoked in that field of use or the geographical areas in which the *contractor* has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of the *funding Federal agency* to the extent the *contractor*, its licensees, or the domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.
- (3) Before revocation or modification of the license, the *funding Federal agency* will furnish the *contractor* a written notice of its intention to revoke or modify the license, and the *contractor* will be allowed thirty days (or such other time as may be authorized by the *funding Federal agency* for good cause shown by the *contractor*) after the notice to show cause why the license should not be revoked or modified. The *contractor* has the right to appeal, in accordance with applicable regulations in 37 CFR part 404 and *agency* regulations (if any) concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of the license.

(f) *Contractor* Action to Protect the Government's Interest

- (1) The *contractor* agrees to execute or to have executed and promptly deliver to the *Federal agency* all instruments necessary to
  - (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the *contractor* elects to retain title, and
  - (ii) convey title to the *Federal agency* when requested under paragraph (d) above and to enable the government to obtain patent protection throughout the world in that subject invention.
- (2) The *contractor* agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the *contractor* each subject invention made under *contract* in order that the *contractor* can comply with the disclosure provisions of paragraph ( c ), above, and to execute all papers necessary to file patent applications on subject inventions and to establish the government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by (c) (I), above. The *contractor* shall instruct such employees through employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.
- (3) The *contractor* will notify the *Federal agency* of any decisions not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than thirty days before the expiration of the response period required by the relevant patent office.
- (4) The *contractor* agrees to include, within the specification of any United States patent applications and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with government support under (identify the *contract*) awarded by (identify the *Federal agency*). The government has certain rights in the invention."

(g) Subcontracts

- (1) The *contractor* will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental or research work. The subcontractor will retain all rights provided for the *contractor* in this clause, and the *contractor* will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

- (2) In the case of subcontracts, at any tier, when the prime award with the Federal agency was a contract (but not a grant or cooperative agreement), the *agency*, subcontractor, and the contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and the Federal agency with respect to the matters covered by the clause; provided, however, that nothing in this paragraph is intended to confer any jurisdiction under the Contract Disputes Act in connection with proceedings under paragraph (i) of this clause.

(h) Reporting on Utilization of Subject Inventions

The *Contractor* agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the *contractor* or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the contractor, and such other data and information as the *agency* may reasonably specify. The *contractor* also agrees to provide additional reports as may be requested by the *agency* in connection with any march-in proceeding undertaken by the *agency* in accordance with paragraph (i) of this clause. As required by 35 U.S.C. 202(c) (5), the *agency* agrees it will not disclose such information to persons outside the government without permission of the *contractor*.

(i) Preference for United States Industry

Notwithstanding any other provision of this clause, the *contractor* agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject inventions in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by the *Federal agency* upon a showing by the *contractor* or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in Rights

The *contractor* agrees that with respect to any subject invention in which it has acquired title, the *Federal agency* has the right in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of the *agency* to require the *contractor*, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the *contractor*, assignee, or exclusive licensee refuses such a request the *Federal agency* has the right to grant such a license itself if the *Federal agency* determines that:

- (1) Such action is necessary because the *contractor* or assignee has not taken or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use.
- (2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the *contractor*, assignee or their licensees;
- (3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the *contractor*, assignee or licensees; or
- (4) Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(k) Special Provisions for *Contracts* with Nonprofit Organizations If the *contractor* is a nonprofit organization, it agrees that:

- (1) Rights to a subject invention in the United States may not be assigned without the approval of the *Federal agency*, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the *contractor*;

- (2) The *contractor* will share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (when the agency deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;
- (3) The balance of any royalties or income earned by the *contractor* with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific research or education; and
- (4) It will make efforts that are reasonable under the circumstances to attract licensees of subject invention that are small business firms and that it will give a preference to a small business firm when licensing a subject invention if the *contractor* determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided, that the *contractor* is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the *contractor*. However, the *contractor* agrees that the Secretary applicants, and the *contractor* will negotiate changes to its licensing policies, procedures, or practices with the Secretary when the Secretary's review discloses that the *contractor* could take reasonable steps to implement more effectively the requirements of this paragraph (k)(4).

(l) Communication

Any communications to be given hereunder by either party to the other shall be deemed to be duly given if set forth in writing and personally delivered or sent by mail, registered or certified, postage prepaid with return receipt requested, as follows:

CONTRACTOR

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CLIENT

Barnwell County School District

770 Hagood Avenue

Barnwell, SC 29812

Written notices hereunder delivered personally shall be deemed communicated as of actual receipt; mailed notices shall be deemed communicated five (5) days after deposit in the mail, post prepaid, certified, in accordance with this Paragraph.

**CLEAN AIR ACT**

(For all awarded contracts with a value greater than \$150,000.00)

- (m) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- (n) The contractor agrees to report each violation to the (name of applicant entering into the contract) and understands and agrees that the (name of the applicant entering into the contract) will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- (o) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

**FEDERAL WATER POLLUTION CONTROL ACT**

(For all awarded contracts with a value greater than \$150,000.00)

- (1) The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 etseq.
- (2) The contractor agrees to report each violation to the (name of the applicant entering into the contract) and understands and agrees that the (name of the applicant entering into the contract) will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the

appropriate Environmental Protection Agency Regional Office.

- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

#### **DEBARMENT AND SUSPENSION**

##### ***Contractor must complete enclosed certification***

- (1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by Client. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

#### **BYRD ANTI-LOBBYING AMENDMENT**

(For all awarded contracts with a value greater than \$100,000.00. ***Contractor must complete enclosed certification***

Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended) Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

The Contractor certifies, to the best of his or her knowledge and belief that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the contractor shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) Contractor will include language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$150,000.00 shall certify and disclose accordingly.

#### **PROCUREMENT OF RECOVERED MATERIALS**

(The requirements of Section 6002 include procuring only items designated in guidelines of the EPA at 40

C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired by the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.)

- (1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA designated items unless the product cannot be acquired:
  - a) Competitively within a timeframe providing for compliance with the contract performance schedule;
  - b) Meeting contract performance requirements; or
  - c) At a reasonable price.
- (2) Information about this requirement is available at EPA's Comprehensive Procurement Guidelines web site, <http://www.epa.gov/cpg/>. The list of EPA-designate items is available at <http://www.epa.gov/cpg/products.htm>.
- (3) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act."

#### **ACCESS TO RECORDS**

The following access to records requirements apply to this contract:

- (1) The Contractor agrees to provide the Client, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- (2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- (3) The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.
- (4) In compliance with the Disaster Recovery Act of 2018, the Client and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

#### **CHANGES**

To be eligible for FEMA assistance under the non-Federal entity's FEMA grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope.

FEMA recommends, therefore, that a non-Federal entity include a changes clause in its contract that describes how, if at all, changes can be made by either party to alter the method, price, or schedule of the work without breaching the contract. The language of the clause may differ depending on the nature of the contract and the end-item procured.

#### **DHS SEAL, LOGO, AND FLAGS**

The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

#### **COMPLIANCE WITH FEDERAL LAW, REGULATIONS, AND EXECUTIVE ORDERS**

This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives.



#### **NO OBLIGATION BY FEDERAL GOVERNMENT**

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

#### **PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS**

The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract.

#### **PROHIBITION ON CONTRACTING FOR COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES**

2 C.F.R. § 200.216, as implemented by FEMA Policy 405-143-1, prohibits the Contractor from using equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

#### **DOMESTIC PREFERENCES FOR PROCUREMENTS**

As appropriate and to the extent consistent with law, the Contractor agrees, to the greatest extent practicable, prefer the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products).

#### **AFFIRMATIVE SOCIOECONOMIC STEPS**

If subcontracts are to be let, the prime contractor is required to take all necessary steps identified in 2 C.F.R. § 200.321(b)(1)-(5) to ensure that small and minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

#### **COPYRIGHT AND DATA RIGHTS**

"License and Delivery of Works Subject to Copyright and Data Rights"

The Contractor grants to the Client a paid-up, royalty-free, nonexclusive, irrevocable, worldwide license in data first produced in the performance of this contract to reproduce, publish, or otherwise use, including prepare derivative works, distribute copies to the public, and perform publicly and display publicly such data. For data required by the contract but not first produced in the performance of this contract, the Contractor will identify such data and grant to the Client or acquires on its behalf a license of the same scope as for data first produced in the performance of this contract. Data, as used herein, shall include any work subject to copyright under 17 U.S.C. § 102, for example, any written reports or literary works, software and/or source code, music, choreography, pictures or images, graphics, sculptures, videos, motion pictures or other audiovisual works, sound and/or video recordings, and architectural works. Upon or before the completion of this contract, the Contractor will deliver to the Client data first produced in the performance of this contract and data required by the contract but not first produced in the performance of this contract in formats acceptable by the Client."

#### **BUILD AMERICA, BUY AMERICA ACT**

Contractors and their subcontractors who apply or bid for an award for an infrastructure project subject to the domestic preference requirement in the Build America, Buy America Act ("BABAA") shall file the required certification to the non-federal entity with each bid or offer for an infrastructure project, unless a domestic preference requirement is waived by FEMA. Contractors and subcontractors certify that no federal financial assistance funding for infrastructure projects will be provided unless all the iron, steel, manufactured projects, and construction materials used in the project are produced in the United States. BABAA, Pub. L. No. 117-58, §§ 70901-52. Contractors and subcontractors shall also disclose any use of federal financial assistance for infrastructure projects that does not ensure compliance with BABAA domestic preference requirement. Such disclosures shall be forwarded to the recipient who, in turn, will forward the disclosures to FEMA, the federal awarding agency; subrecipients will forward disclosures to the pass-through entity, who will, in turn, forward the disclosures to FEMA.

### **BYRD ANTI-LOBBYING CERTIFICATION**

Certification for Contracts, Grants, Loans, and Cooperative Agreements-The undersigned certifies, to the best of his or her knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- 3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor \_\_\_\_\_ certifies or affirms the truthfulness

and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

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**Signature of Contractor's Authorized**

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**Name and Title of Contractor's Authorized Official**

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**Date**



### **DEBARMENT/SUSPENSION CERTIFICATION**

Non-Federal entities and contractors are subject to the debarment and suspension regulations implementing Executive Order 12549, Debarment and Suspension (1986) and Executive Order 12689, Debarment and Suspension (1989) at 2 C.F.R. Part 180 and the Department of Homeland Security's regulations at 2 C.F.R. Part 3000 (No procurement Debarment and Suspension).

This requirement applies to all FEMA grant and cooperative agreement programs.

Federal Executive Order (E.O.) 12549 "Debarment" requires that all contractors receiving individual awards, using federal funds, and all sub recipients certify that the organization and its principals are not debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency from doing business with the Federal Government. By signing this document, you certify that your organization and its principals are not debarred. Failure to comply or attempts to edit this language may disqualify your bid. Information on debarment is available at the following websites: [www.sam.gov](http://www.sam.gov) and <https://acquisition.gov/far/index.html> see section 52.209-6.

The Contractor \_\_\_\_\_ certifies or affirms by your signature that neither you nor your principal is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

\_\_\_\_\_  
**Signature of Contractor's Authorized**

\_\_\_\_\_  
**Name and Title of Contractor's Authorized Official**

\_\_\_\_\_  
**Date**

## **CIVIL RIGHTS COMPLIANCE PROVISIONS**

### **1. EQUAL EMPLOYMENT OPPORTUNITY (Equal Opportunity Clause)**

(For all awarded contracts that meet the definition of "federally assisted construction contract" provided in 41 CFR Part 60-1.3)

During the performance of this contract, the contractor agrees as follows:

- 1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:  
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- 2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- 3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- 4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- 6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or order this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or

vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

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**Signature of Contractor's Authorized**

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**Name and Title of Contractor's Authorized Official**

---

**Date**

**BUILD AMERICA BUY AMERICA ACT SELF-CERTIFICATION**

The undersigned certifies, to the best of their knowledge and belief, that: The Build America, Buy America Act (BABAA) requires that no federal financial assistance for “infrastructure” projects is provided “unless all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States.” section 70914 of Public Law No. 117-58, §§ 70901-52. The undersigned certifies that the iron, steel, manufactured products, and construction materials used in this contract are in full compliance with the BABAA requirements including:

1. All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2. All manufactured products purchased with FEMA financial assistance must be produced in the United States. For a manufactured product to be considered produced in the United States, the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55% of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
3. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

The Contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

\_\_\_\_\_  
**Signature of Contractor’s Authorized**

\_\_\_\_\_  
**Name and Title of Contractor’s Authorized Official**

\_\_\_\_\_  
**Date**



# Geotechnical Engineering Report

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**Barnwell High School Safe Room**  
**Barnwell, SC**

March 16, 2021

Terracon Project No. 73205002

**Prepared for:**

Thomas & Hutton  
Columbia, SC

**Prepared by:**

Terracon Consultants, Inc.  
Columbia, SC



March 16, 2021

Thomas & Hutton  
1501 Main Street, Suite 760  
Columbia, SC 29201



Attn: Mr. Mark Desouza, P.E.  
P: 803-451-6796  
E: desouza.m@tandh.com

Re: Geotechnical Engineering Report  
Barnwell High School Safe Room  
474 Jackson Street  
Barnwell, SC  
Terracon Project No. 73205002

Dear Mr. Desouza:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P73205002, dated January 6, 2021, as authorized on January 26, 2021 by Mr. Sanderson. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations, floor slabs and pavements for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,  
**Terracon Consultants, Inc.**

Ali Soleimanbeigi, P.E.  
Senior Staff Engineer  
SC Registration No. 38635

Phillip A. Morrison, P.E.  
Geotechnical Department Manager  
SC Registration No. 17275



## REPORT TOPICS

|                                    |    |
|------------------------------------|----|
| INTRODUCTION.....                  | 1  |
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**Note:** This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the **GeoReport** logo will bring you back to this page. For more interactive features, please view your project online at [client.terracon.com](http://client.terracon.com).

## ATTACHMENTS

**EXPLORATION AND TESTING PROCEDURES**  
**SITE LOCATION AND EXPLORATION PLANS**  
**EXPLORATION RESULTS**  
**SUPPORTING INFORMATION**

**Note:** Refer to each individual Attachment for a listing of contents.

## REPORT SUMMARY

| Topic <sup>1</sup>                   | Overview Statement <sup>2</sup>  |
|--------------------------------------|--|
| <b>Project Description</b>           | <p>The project includes a dome-shaped safe room building housing the gymnasium. Also planned are an emergency generator building, and parking areas and drives. The provided maximum structural loads include:</p> <p>Safe Room Building: 10 klf for walls and 125 psf for concrete floors<br/>         Generator Building: 20 kips for columns, 3 klf for walls, and 125 psf for concrete floors.</p> <p>Up to 2 feet of fills/cuts are anticipated to achieve the subgrade level in the building and pavement areas. The invert depth of the planned detention pond on the west side of the site will be up to 5 feet below the existing ground surface.</p> <p>We understand that the drive from Owens Street to Jackson Street along with a small parking area will be constructed in the initial construction phase. The 290-space parking area will be a later addition. Mr. Desouza indicated that the planned pavements will receive only passenger vehicle traffic.</p> |
| <b>Geotechnical Characterization</b> | <p>The typical site soil profile consists of loose to medium dense clayey sands underlain by stiff to very stiff sandy fat clays to the explored depths of up to 50 feet. The surficial site soils are significantly wet of their optimum moisture.</p> <p>Very loose clayey sands were encountered within the upper 6 feet of Boring B-4 and B-4A (the dome building area). Soft sandy clays were encountered to depth of 8 feet bgs in Boring B-7 (detention pond area). It appears these borings are located in a drainage feature, filled as part of the original construction.</p> <p>Groundwater was encountered at depths of between 1 and 10 feet below ground surface during exploration. Considering the soil profile and the precipitation which occurred both prior and during the field exploration, the shallowest water levels may be at least partially associated with a perched water condition.</p>   |
| <b>Earthwork</b>                     | <p>The materials in the area of Borings B-4 and B-7 should be undercut and replaced. As groundwater is relatively shallow and soils are wet, restoring the area will require backfill using an open-graded stone or very coarse, well graded sand.</p> <p>To stabilize the general subgrade soils, remedial measures including surficial reworking or undercutting/replacement with compacted structural fill are expected. The excavated silty/clayey sands can be used as structural fills if dried to a range close to the optimum moisture content.</p> <p>If the groundwater conditions at the time of construction are as now, excavation for foundation and utility installation will likely require groundwater control measures.</p>  |
| <b>Shallow Foundations</b>           | <p>Shallow foundations will be sufficient to support the building loads.</p> <p>Allowable bearing pressure = 2,500 psf</p> <p>Expected settlements: &lt; 1-inch total, &lt; ½-inch differential</p> <p>Detect and undercut zones of very loose soils as noted in <b>Earthwork</b>.</p>   |
| <b>Seismic Site Class</b>            | <p>Based on the IBC building code and our geophysical data, a seismic site class of D can be used for the design. Based on the results of our liquefaction analysis, the soil profile is not expected to liquefy under the design PGA.</p>   |



## Geotechnical Engineering Report

Barnwell High School Safe Room ■ Barnwell, SC

March 16, 2021 ■ Terracon Project No. 73205002



| Topic <sup>1</sup>   | Overview Statement <sup>2</sup>  |
|--|--|
| Pavements  | With the subgrade prepared as noted in <b>Earthwork</b> considering a light-duty traffic, a pavement section consisting of 2 inches Asphaltic Concrete (AC) over 8 inches granular base can be used in drive and parking spaces. |
| General Comments   | This section contains important information about the limitations of this geotechnical engineering report.   |
| <ol style="list-style-type: none"><li>1. If the reader is reviewing this report as a pdf, the topics above can be used to access the appropriate section of the report by simply clicking on the topic itself.</li><li>2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.</li></ol> |  |

**Geotechnical Engineering Report**  
**Barnwell High School Safe Room**  
**474 Jackson Street**  
**Barnwell, SC**  
**Terracon Project No. 73205002**  
**March 16, 2021**

## INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Safe Room to be constructed at the Barnwell High School located at 474 Jackson Street in Barnwell, SC. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Excavation considerations
- Floor slab design and construction
- Seismic site classification per IBC
- Foundation design and construction
- Pavement design and construction

The geotechnical engineering scope of services for this project included the advancement of 11 test borings to depths ranging from approximately 5 to 50 feet below existing site grades (bgs) and geophysical testing to develop the shear wave velocity profile. Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan**, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and as separate graphs in the **Exploration Results** section.

## SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

| Item                         | Description  |
|------------------------------|--|
| <b>Parcel Information</b>    | The project site is located on the Barnwell High School campus at 474 Jackson Street in Barnwell, SC. For additional location information see <b>Site Location</b> . |
| <b>Existing Improvements</b> | The proposed project will be located in the space currently occupied by the existing track and field area.   |
| <b>Current Ground Cover</b>  | Except for the asphalt-paved areas (running track), the site vegetation is grass.  |

## Geotechnical Engineering Report

Barnwell High School Safe Room ■ Barnwell, SC

March 16, 2021 ■ Terracon Project No. 73205002



| Item                    | Description  |
|-------------------------|--|
| Existing Topography     | From the provided topographic plan, the ground surface in the area of the track and field is between Elevations 190 and 192 feet amsl. The topography slopes down to 187 feet amsl on the west and north sides of the track toward the roadways. It slopes up to 200 feet amsl on the east and south sides toward the school building and football stadium. Within the general construction area, the current ground surface slopes from 5(H):1(V) to 3(H):1(V).   |
| Additional Observations | <p>There are ditches both on the inside and outside of the track on its east and south sides. The ditches are drained into the storm drain that runs across the site. At the time of our exploration, the ditches did not contain any standing water but were wet.</p> <p>Transverse cracks were observed on the asphalt pavement of the running track. These are likely associated with the age of the pavement.</p>  |
| Historical Data         | A review of the historical aerial photographs indicates that prior to the existing development, there was a drainage feature that extended across the track and field site in the vicinity of Borings B-4/B-4A and B-7. The extension of the drainage feature is present on the west side of the Jackson Street, extending towards the wooded area further west.   |
| Geology                 | The site is located in the upper Coastal Plain physiographic province of South Carolina, very near the Fall Line (the transition from the Coastal Plain to the Piedmont province). The Coastal Plain is a wedge-shaped cross section of water and wind deposited soil. Its thickness ranges from a featheredge at the surface contact of the Piedmont to several thousand feet at the present-day coastline. The sediments range in age from the Cretaceous and Tertiary periods at the contact with the bedrock to the Recent period at the present coastline. The sediments include clays, silts, sands, and gravels, as well as organics. |

## PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

| Item                 | Description  |
|----------------------|--|
| Information Provided | <p>Site / Civil Professional Services request for Barnwell High School Safe Room by Tetra-Tech</p> <p>Barnwell County Safe Room - Existing Site</p> <p>Boring Map on Site Plan</p> |

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| Item                            | Description  |
|---------------------------------|--|
| <b>Project Description</b>      | The new building consists of a dome-shaped safe room with projecting entry vestibule that will house a gymnasium for the high school, while serving as a safe room during emergencies. The building will be located in the north portion of the current track and field area. In addition to the safe room building, there will be a separate building to house the emergency generator. Also planned are a drive extending from Owens Street to Jackson Street and a 290-space parking lot. |
| <b>Proposed Structures</b>      | The project includes a dome-shaped safe room with projecting entry vestibule. The dome section will have a 164-foot diameter. A separate building to house the emergency generator is also planned.  |
| <b>Building Construction</b>    | <p>The dome building will be hemispherically-shaped, load-bearing concrete dome clearing the gymnasium area.</p> <p>The generator building will be steel framed structure with a masonry exterior.</p> <p>Both buildings will have concrete slabs-on-grade.</p>  |
| <b>Finished Floor Elevation</b> | Not provided. We assume it will be raised slightly higher than the existing ground surface to help improve drainage around the building areas.   |
| <b>Maximum Loads</b>            | <p>The following information was provided by the structural engineer.</p> <p>Safe Room Building:</p> <ul style="list-style-type: none"><li>■ Walls: 10 kips per linear foot (klf) at the dome perimeter</li><li>■ Slabs: 125 pounds per square foot (psf)</li></ul> <p>Generator Building:</p> <ul style="list-style-type: none"><li>■ Columns: 20 kips</li><li>■ Walls: 3 kips per linear foot (klf)</li><li>■ Slabs: 125 pounds per square foot (psf)</li></ul>                            |
| <b>Grading/Slopes</b>           | <p>The final grades are not provided. Given the relatively flat topography of the proposed construction area, we assume that up to 2 feet of new fill will be placed to improve the drainage of the site.</p> <p>The ½-acre detention pond will be located along the west side of the site. The pond depth will be about 5 feet below the existing ground surface.</p> <p>Final slope angles of as steep as 3H:1V (Horizontal: Vertical) are expected.</p>                                   |
| <b>Detention/Retention</b>      | A detention pond is planned as part of the project. It is expected to be about 5 feet deep.  |
| <b>Pavements</b>                | We understand that the drive from Owens Street to Jackson Street and a small parking area will be constructed as part of the initial construction. The 290-space parking lot, located on the south side of the dome  |

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| Item                            | Description   |
|---------------------------------|---|
|                                 | building, will be built at a later time. Flexible (asphalt) pavement is considered for parking and drive areas. |
| Estimated Start of Construction | Not provided.   |

## GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

| Model Layer | Layer Name        | General Description                                  |
|-------------|-------------------|--|
| 1           | Silty/Clayey Sand | Loose to medium dense, fine to medium grained, brown |
| 2           | Sandy Fat Clay    | Stiff to very stiff, tan to gray                     |

Groundwater was encountered at depths of 2 to 10 feet bgs in most test borings at the time of field exploration. When checked 24 hours after drilling, groundwater was measured at depths of 1 to 10 feet bgs. These observations represent groundwater conditions at the time of the field exploration, and may not be indicative of other times, or at other locations. Groundwater levels can be expected to fluctuate with varying seasonal and weather conditions.

Very loose soils were encountered within the upper 6 feet of Borings B-4, B-4A, and B-7. A review of the historical aerial photos indicates that the alignment of these borings generally follows the previous extension of the ditch present across the vegetated land on the west side of Jackson Street. The ditch was apparently backfilled as a part of the existing development.

Laboratory testing was performed on representative samples of the various soils encountered by the borings. Based on the results, the site soils are silty/clayey sands underlain by sandy fat clays. The fines contents of the silty/clayey sands vary from 20 to 40 percent and their moisture contents vary from 14 to 23 percent. The fines content of the sandy fat clay varies from 53 to 70 percent with the moisture content between 22 to 28 percent. The maximum dry unit weight and optimum moisture of the surficial silty/clayey sands determined from standard Proctor test are 114.2 pcf and 13.2 percent; respectively.

## **GEOTECHNICAL OVERVIEW**

Based on the exploration results, the site is generally suited for the planned development provided the recommendations in this report are followed. The site soils generally consist of loose to medium dense silty/clayey sands underlain by stiff to very stiff sandy fat clay. Presuming the foundations bear on soils similar to those encountered by most of the borings or on structural fill supported by similar native soils, the structure can be supported by conventional spread/strip footings with tolerable settlement estimates. The **Shallow Foundations** section addresses support of the building bearing on firm native soil or engineered fill. Repair of the foundation subgrades will be required to address conditions such as those encountered at Boring B-4/B-4A.

The first geotechnical consideration is the presence of very loose surficial soils encountered in Borings B-4/B-4A (in the planned safe room footprint) and in Boring B-7 (in the planned detention pond). As mentioned earlier, these materials appear to be existing fill associated with the filling of a drainage feature during the original school development. These soils are very low density/consistency and extend to at least 6 feet below the existing ground surface. As part of the initial development activities these soils should be removed and replaced. Considering wet conditions and the shallow groundwater encountered in several areas, the use of open-graded stone (such as #57 stone) or very coarse, well-graded sand as backfill material should be considered. The full extent of the area (length and width) associated with these conditions is not known at this time but can be assumed to be present between the noted borings, crossing the planned roadway and extending further to the east into the dome building footprint.

The second consideration is the presence of shallow groundwater in many of the borings. Groundwater depths in many of the borings were less than 5 feet below the existing ground surface. Others indicated cave-in levels at similar depths, sometimes an indication of the presence of groundwater. Considering the flat condition of the site and the level of precipitation leading up to the work, the noted conditions (at least in part) could be a perched water condition. Nevertheless, the potential for shallow groundwater should be anticipated during the construction process as well as over the life of the project. In construction, typical excavations (those associated with structure foundations and utilities) could encounter groundwater. It would be prudent to at least modestly raise the grades of the building areas to provide additional separation between the foundations and floor slab and the groundwater surface. Minimizing the utility invert depths will also help to lessen the impact of the groundwater on construction. Longer term, we recommend the inclusion of an underdrain system in the building areas to help remove groundwater from the shallow soils should they rise close to the subgrade level. The use of open ditches or french drains to help manage the shallow groundwater is also prudent. Converting the storm drain system to function as a french drain may be possible but would be dependent on the storm drain layout and can be considered when the stormwater plans are available. Additional recommendations regarding the groundwater control are provided in the **Earthwork** section. The full impact of the groundwater will be heavily dependent on the site grading plan. Once available, it should be provided to Terracon to see whether any modifications to the report are necessary.

The on-site excavated soils (silty/clayey sands) can be used as structural fill below the buildings and pavement areas provided they are dried to the level described in the **Earthwork** section. The moisture contents of these soil are above the optimum moisture content level. In some areas, the moisture content is more than 10 percent above that level. Sandy fat clay in the planned pond area (thought to be existing fill) should not be used as structural fill but could be used to fill non-structural areas, if needed. This material was also very wet and will require drying to facilitate placement and compaction.

The **Floor Slabs** section addresses slab-on-grade support of the building. Flexible pavement system is considered for this site. The **Pavements** section addresses the design of pavement systems. The recommendations contained in this report are based upon the results of data presented herein, engineering analyses, and our current understanding of the proposed project. The **General Comments** section provides an understanding of the report limitations.

## **EARTHWORK**

Earthwork is anticipated to include site stripping, subgrade preparations, excavations, and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations, floor slabs, and pavements.

### **Site Preparation**

The existing topsoil, vegetation, asphalt pavement, remnants of past construction, and any other unsuitable materials should be stripped and removed from the construction area. Stripping should extend at least 10 feet beyond the construction limits. The topsoil thicknesses were up to 3-½ inches at the boring locations but will vary across the site. Clean topsoil may be stockpiled for reuse in landscaped areas or pavement shoulders. Once the contractor's stripping activities nears completion, we recommend that our representative observe the subgrade to identify any remaining pockets of organics or unsuitable material that should be removed.

Existing drainage ditches fall within the construction area and will be filled as part of the grading activities. Their subgrades were wet and soft during our site visit. The ditch areas should be stripped of topsoil and soft materials to expose a firm soil in preparation for fill placement. It may be necessary to place an initial layer of clean sand across the bottom of the ditches to stabilize the subgrade prior to placing the general mass structural fill. More specific recommendations can be provided by the Terracon geotechnical engineer in the field at the time of subgrade evaluation.

Special precautions should be made to remove all underground utilities and their associated backfill as the structures and pavements may overlay these materials. Care should be given to locating and addressing these items during the site preparation phase of the project. If loose soils



or utilities are overlooked, they could be detrimental to the long-term performance of the structures and pavements.

## **Subgrade Drainage**

The borings indicate that groundwater levels were less than 5 feet in many areas of the site and as shallow as 1 to 3 feet in the dome building footprint. Groundwater at these shallow levels coupled with the soil type and consistency may result in an unstable subgrade condition. Depending on the final grading plans, excavations for foundations and utility trenches in these areas will likely encounter groundwater conditions. Once the final grading plans are available, they should be provided to Terracon to review and update as necessary the recommendations presented in this report.

Presuming the planned grades are close to the existing grades, we recommend lowering and maintaining the groundwater levels to at least 3 feet below the stripped initial subgrade. To do so, a series of shallow drainage ditches can be excavated along the perimeter and across the footprints to provide groundwater an outlet from the soil. Depending on the effectiveness of the initial ditching, additional trenches or deepening the initial ones may be needed to help lower the groundwater levels by shortening the drainage paths or increasing the elevation difference. Initial excavation and modification should be in consultation with the Geotechnical Engineer. This should be performed as early as practical in the construction process to allow the shallow soil to begin to dry in preparation for subgrade preparation. As discussed in the **Floor Slabs** section, the ditches should be converted to french drains to use in a permanent groundwater control system.

In addition to the building, ditches along the roadway and around the planned parking areas will also be beneficial to help address the shallow groundwater conditions. Depending on its layout, it may be possible to incorporate the storm drain system into the permanent french drain/underdrain system. Essentially, the trenches of the storm drain lines would become french drains, allowing groundwater to weep into the system. The practicality of this can be determined when the storm drain system plans are formalized.

## **Subgrade Preparation**

The extent of subgrade preparation over most of the site will be dependent upon the final grades. The final grading plan may impact some of our recommendations in this report. At the time of our field exploration, the surficial site soils were wet of their optimum moisture levels. If the moisture conditions during construction are as then, the subgrade is likely to be unstable under a proofrolling load. After stripping and installation of the noted drainage ditches, the exposed soils should be uniformly moisture conditioned (dried) to a depth of about 1 foot by turning the soil with a harrow or similar equipment to expose it and then compacting it to enhance the support characteristics of the subgrade and to prepare it for subsequent fill placement. We recommend the subgrade be compacted to a target relative density of 95 percent of the standard Proctor at the stripped subgrade level.



Loose silty/clayey sands were present in Borings B-2, B-5, B-6, and B-9. These soils may require additional repairs beyond surficial drying and recompaction to provide a stable subgrade for support of structural fills, pavement and floor slabs. Given the soil type and condition, we expect that the repair options will include removal of the upper soils (potentially up to a depth of about 2 feet in some areas), moisture conditioning of the exposed subgrade, re-placement of the excavated soils in thin compacted lifts (after drying). The soils should be compacted at 95 percent of maximum dry unit weight and within 2 percent of optimum moisture consistent with **Fill Compaction Requirements**, below.

Very low consistency soils were encountered in the footprint of the planned dome building (Borings B-4/B-4A) and in the planned detention pond area (indicated in Boring B-7) to the depth of 6 feet bgs. As noted, these materials appear to be existing fill associated with the filling of a drainage feature across the site during the original school development. As part of the initial development activities these soils should be removed and replaced. Considering wet conditions and the shallow groundwater encountered in several areas, the use of open-graded stone (such as #57 stone) or very course, well-graded sand as backfill material should be considered.

In addition to density testing to verify the level of compaction of the soil reached, the exposed subgrades in the building/paved areas should be proofrolled to check for more deep-seeded unstable soil conditions and further evaluate the effectiveness of the subgrade compaction. Proofrolling should be performed with a heavily loaded tandem axle dump truck or with similar approved construction equipment under the observation of the Terracon geotechnical engineer. Where conditions are found to be unstable under the proofrolling load, the subgrade should be undercut to soils that would provide a firm base for the compaction of the structural fill. The undercut soils should be dried and re-placed with excavated soils in thin compacted lifts, placed as described in the following section of this report. Mass fill placement may commence after proofrolling has been successfully completed and any needed repairs to the subgrade have been made.

As noted earlier, the on-site soils are wet of their optimum moisture contents. We recommend that site grading occur in the summer season to benefit from the longer days and hotter temperatures to facilitate drying of the subgrade soils. It should be anticipated that site work will require aggressive mechanical drying methods using disks and harrows operating continuously over site areas so as to turn the wet soils to depths of 8 to 10 inches. We note that mechanical drying can be time-consuming and is dependent on the weather. Winter conditions are not conducive to continuous site work and will exacerbate the problematic soil conditions. In wetter/colder periods of the year, chemical drying with lime or cement or mixing the wetter soils with drier soils may be a more viable option.

The exposed subgrade soils will be composed of primarily silty/clayey sands which can become unstable when exposed to construction traffic after periods of inclement weather especially during colder periods of the year. This traffic exposure to wet subgrades can destabilize what would

have been otherwise satisfactory conditions, requiring further repair. As a precaution, we recommend that once the planned subgrade levels have been achieved, the construction traffic be rerouted from planned structural areas after periods of precipitation to allow them to dry. This should help to reduce the amount of subgrade repairs required later in the project. Positive drainage should be maintained at all times to prevent ponding of stormwater on exposed subgrades as filling process or during the operations life of the structure. Additionally, when inclement weather or when lengthy breaks in construction are anticipated, exposed subgrade soils should be rolled smooth to limit stormwater infiltration into prepared subgrade soils.

## Fill Material Types

Structural fill should meet the following material property requirements. The shallow on-site soils can generally be used as structural fill. The existing moisture contents are close to optimum moisture.

| Soil Type <sup>1</sup>                | USCS Classification | Acceptable Location for Placement                 |
|---------------------------------------|---------------------|---|
| Imported Structural Fill              | SM and SC           | All locations and elevations                      |
| On-Site Soils <sup>2,3</sup>          | SM, SC, CH          | All locations and elevations                      |
| Imported Sand and Gravel <sup>4</sup> | GW                  | Deeper excavation backfill and french drain media |

1. Structural fill should consist of approved materials free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site.
2. The site soils are significantly wet of optimum and should be dried to moisture close to optimum.
3. The use of sandy fat clays is recommended only in non-structural areas.
4. The use of open-graded stone (such as #57 stone) or very coarse, well-graded sand is recommended as backfill material after the removal of the existing fill from the previously filled drainage area across the site (along B-4/B-7 alignment) and as initial fill in the existing ditches across the site.

## Fill Compaction Requirements

Structural fill should meet the following compaction requirements.

| Item  | Description  |
|---|--|
| <b>Maximum Lift Thickness</b>                       | 8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used.<br>4 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used. |
| <b>Minimum Compaction Requirements <sup>1</sup></b> | 95% of the material's standard Proctor maximum dry unit weight (ASTM D 698)  |
| <b>Water Content Range</b>                          | -2% to +2% of optimum  |

| Item | Description  |
|------|--|
| 1.   | We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved. |

## Grading and Drainage

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. The roof should have gutters/drains with downspouts that discharge directly onto the storm drain system.

## Earthwork Construction Considerations

The boring data indicate that the site soils should generally be excavatable using conventional construction equipment. Trenches and other shallow excavations can be performed using medium to large, rubber-tired backhoes. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of floor slabs. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompact prior to floor slab construction.

The shallow groundwater conditions may also affect the installation of the underground utilities. Where the groundwater surface will be penetrated by less than about 2 feet, it may be possible to control the groundwater from within the excavation. If the contractor can work in relatively short sections (generally 30 to 40 feet depending on the actual inverts of the pipe) and can quickly excavate the trench, place the bedding, and install the pipe, it may be possible to control the groundwater using temporary drainage sumps to pump out the seeping water while the pipe is being installed. To accomplish this, a 12-inch minimum layer of open-graded stone (#57 stone or equal) or coarse clean sand can be placed at the bottom of the excavated trench to serve as drainage medium. This would also allow the contractor to avoid wet working conditions. These materials would also provide bedding for the pipe. Periodically, the contractor would need to excavate a sump pit within the trench to allow an area for the water to collect and the pump to be set. We recommend using open graded stone or coarse sand such as that used below the pipe to encase the pipe and fill the trench to a level above the original static groundwater level. This should be placed and compacted prior to excavating the next segment of the trench. During excavation of the next segment, groundwater should continue to be pumped from the prior sump location until a new sump pit is installed and functioning.

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As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

### Slopes

The inclination of the slopes for the planned detention pond is not provided. However, the type and consistency of the soil encountered at the pond location indicates that the pond slope of 3(H):1(V) should be stable throughout the service life of the pond.

Water flow should be directed away from any slope crests and routed quickly into the storm drain system. Minimum setbacks of 10 feet from buildings and 3 feet from curbs should be provided from all slope crests. Storm drain and pressurized water lines should not be located at the crest of fill slopes since leaking pipes or overtopping of inlets may cause maintenance problems or slope instability in the future. The designer should consider water tight connections for such piping systems if they must be located in close proximity to the crest of the new slopes.

### Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of vegetation and topsoil, proofrolling, and mitigation of areas delineated by the proofroll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. One density and water content test should be performed for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

## SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

### Design Parameters – Compressive Loads

| Item   | Description  |
|--|--|
| <b>Maximum Net Allowable Bearing Pressure</b> <sup>1, 2</sup>        | 2,500 psf  |
| <b>Required Bearing Stratum</b> <sup>3</sup>                         | Firm native clayey/silty sand or compacted structural fill |
| <b>Minimum Foundation Dimensions</b>                                 | Columns: 24 inches<br>Continuous: 18 inches                |
| <b>Ultimate Coefficient of Sliding Friction</b> <sup>4</sup>         | 0.35   |
| <b>Minimum Embedment below Finished Grade</b> <sup>5</sup>           | 24 inches  |
| <b>Estimated Total Settlement from Structural Loads</b> <sup>2</sup> | <1 inches  |
| <b>Estimated Differential Settlement</b> <sup>2, 6</sup>             | About ½ inch   |

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. Values assume that exterior grades are no steeper than 20% within 10 feet of structure.
2. Values provided are for maximum loads noted in **Project Description**.
3. Loose surficial soils be repaired per the recommendations presented in the **Earthwork** section.
4. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions.
5. As bearing capacity requirement. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
6. Differential settlements are as measured over a span of 50 feet.

### Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

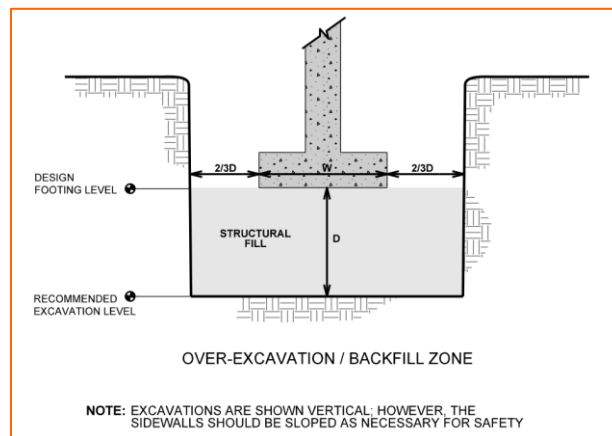
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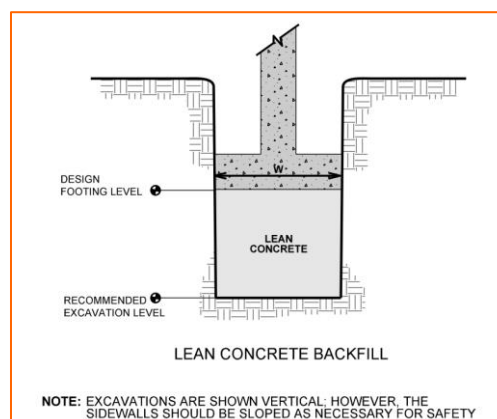
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If very loose or unsuitable bearing soils are encountered at the base of the planned footing excavation, the footing excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or over-excavation for structural fill or stone base placement below footings should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with structural fill placed, as recommended in the **Earthwork** section.



Alternately, the excavation can be filled with lean concrete backfill as illustrated on the sketch below.



## SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC).

Based on the results of the geophysical testing, it is our professional opinion that the Seismic Site Classification is D. The weighted average shear wave velocity in the upper 100 feet was 1,045 fps. Based on the results of our liquefaction analysis, the soil profile is not expected to liquefy under the design PGA.

## FLOOR SLABS

The structural fill in the areas of the buildings should be compacted to the target density prior to floor slab construction. Design parameters for floor slabs assume the requirements for **Earthwork** have been followed. Specific attention should be given to positive drainage away from the structures and positive drainage of the aggregate base beneath the floor slabs.

### Floor Slab Design Parameters

| Item  | Description   |
|---|---|
| Floor Slab Support <sup>1</sup>                     | Minimum 4 inches of free-draining crushed aggregate compacted to at least 95% of ASTM D 698 <sup>2, 3</sup> |
| Estimated Modulus of Subgrade Reaction <sup>2</sup> | 100 pounds per square inch per inch (psi/in) for point loads  |

1. Floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation.
2. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in **Earthwork**, and the floor slab support as noted in this table. It is provided for point loads. For large area loads the modulus of subgrade reaction would be lower.
3. Free-draining granular material should have less than 5% fines (material passing the No. 200 sieve).

A subgrade prepared and tested as recommended in this report should provide adequate support for lightly-loaded floor slabs. Slab construction can begin after the completion of any necessary undercutting or in-place stabilization. We recommend that the floor slabs be designed as “floating” slabs, that is, fully ground supported and structurally independent of any building footings or walls. This is to aid in minimizing the possibility of cracking and displacement of the floor slabs because of differential movements between the slab and the foundation. The slabs should be appropriately reinforced to support the proposed loads.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.



Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a water-proof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

### **Floor Slab Construction Considerations**

We recommend the area underlying the floor slab be rough graded and then thoroughly proofrolled with a loaded tandem axle dump truck prior to final grading and placement of base rock. Finished subgrade, within and for at least 10 feet beyond the floor slab, should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed.

If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed and replaced with structural fill. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

On most project sites, the site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed due to utility excavations, construction traffic, desiccation, rainfall, etc. As a result, the floor slab subgrade may not be suitable for placement of base rock and concrete and corrective action will be required to repair the damaged areas.

All floor slab subgrade areas should be moisture conditioned and properly compacted to the recommendations in this report immediately prior to placement of the base rock and concrete. The Geotechnical Engineer should approve the condition of the floor slab subgrades immediately prior to placement of the floor slab support course, reinforcing steel, and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

### **Under-slab Drainage**

To maintain the control of the groundwater beyond the temporary requirements of the construction process, we recommend that the contractor convert the ditches in the building to french drains. French drains are stone-filled, non-woven drainage fabric-lined ditches with a drainage pipe at their base. We recommend that the drainage pipes used in the ditches be minimum 4-inch



diameter perforated corrugated plastic pipe. The drainage media should be #57 stone or a similar open-graded stone. The fabric should be laid so that it will overlap at least 1 foot at the top of the trench. In areas where the french drains are part of the pavement subgrade, the stone should be compacted into place. Terracon will be pleased to work with the designers to provide a general layout of the french drain system to collect the groundwater and protect the floor slab and pavements.

## PAVEMENTS

Per conversation with Mr. Desouza, the planned pavement will be constructed in two stages. In the first stage, the driveway from Owens Street to Jackson Street with parking spaces on each side will be constructed. In the second stage, the large parking area on the south side of the dome building will be constructed. Pavement designs are provided for the traffic conditions and pavement life conditions as noted in **Project Description** and in the following sections of this report. A critical aspect of pavement performance is site preparation. Pavement designs noted in this section must be applied to the site which has been prepared as recommended in the **Earthwork** section.

### Pavement Design Recommendations

Design of Asphaltic Concrete (AC) pavements are based on the procedures outlined in the National Asphalt Pavement Association (NAPA) Information Series 109 (IS-109). Design of Portland Cement Concrete (PCC) pavements are based upon American Concrete Institute (ACI) 330; Guide for Design and Construction of Concrete Parking Lots. The following traffic information is used for the proposed development.

- Stage I: 500 cars/light trucks per day
- Stage II: 1000 cars/light trucks per day

Based on our experience of similar soil conditions, we have used a CBR value of 5 for the design. If at any time larger traffic volume is expected, Terracon should be contacted to review the pavement recommendations. Subgrade preparation in the pavement areas should be performed as outlined in the **Earthwork** section of this report.

| Material                 | Layer Thickness (in)               |                         |
|--------------------------|------------------------------------|-------------------------|
|                          | Stage I – Drive and Parking Spaces | Stage II - Parking Area |
| HMA Surface Course       | 2                                  | 2                       |
| Prime Coat (If required) | 0.30 gal/sy                        | 0.30 gal/sy             |
| Base Course              | 8                                  | 8                       |

The above sections represent minimum thicknesses and, as such, periodic maintenance should be anticipated. Pavements subjected to high traffic volumes and heavy trucks require thicker pavement sections.

## **General Design Recommendations**

Aggregate base course should be SCDOT Graded Aggregate Base (SCDOT Section 305). Asphaltic cement concrete should be an approved mix design selected from the current SCDOT Standard Type C (SCDOT Sections 402 and 403). Compaction levels of the asphalt and Macadam Base Course materials should conform to SCDOT requirements.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install below pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
- Place compacted, low permeability backfill against the exterior side of curb and gutter.
- Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

## **Pavement Maintenance**

The pavement sections represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. Therefore, preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g., crack and joint sealing and patching) and global maintenance (e.g., surface sealing). Preventive maintenance is usually the priority when implementing a pavement maintenance program. Additional engineering observation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur and repairs may be required.

## **GENERAL COMMENTS**

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur

## Geotechnical Engineering Report

Barnwell High School Safe Room ■ Barnwell, SC

March 16, 2021 ■ Terracon Project No. 73205002



between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

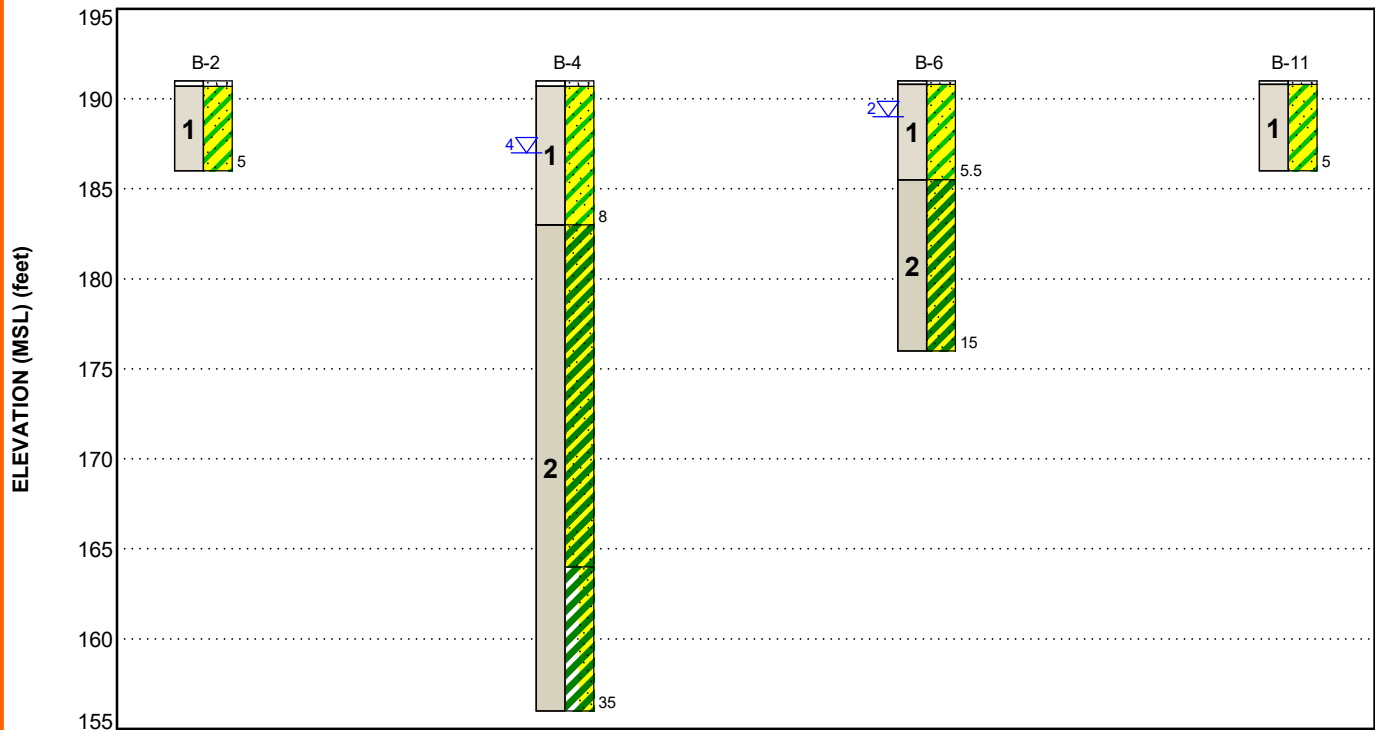
Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

## FIGURES

### Contents:

GeoModel

**BHS - Safe Room ■ Barnwell, SC**  
**Terracon Project No. 73205002**



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

| Model Layer | Layer Name         | General Description                                  |
|-------------|--------------------|--|
| 1           | Silty/Clayey Sands | Loose to medium dense, fine to medium grained, brown |
| 2           | Sandy Fat Clay     | Stiff to very stiff, tan to gray                     |

### LEGEND



- ▽ First Water Observation
- ▽ Second Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

## ATTACHMENTS

## **EXPLORATION AND TESTING PROCEDURES**

### **Field Exploration**

Eleven (11) test borings were drilled at the site between February 17, 2021 and February 22, 2021. The borings were drilled to depths ranging from approximately 5 feet to 50 feet bgs. Approximate locations of the borings are shown on the **Exploration Plan**.

**Boring Layout and Elevations:** Terracon personnel provided the boring layout. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about  $\pm 10$  feet) and approximate elevations were obtained by interpolation from the provided topography. If elevations and a more precise boring layout are desired, we recommend borings be surveyed following completion of fieldwork.

**Subsurface Exploration Procedures:** We advanced the borings with a truck-mounted drill rig using continuous hollow stem flight augers. Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. A standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches.

The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. We observed and recorded groundwater levels during drilling and sampling. Select borings were left open to see whether groundwater would accumulate over night after drilling. Once the groundwater measurements were recorded, the borings were backfilled with auger cuttings after their completion.

An automatic SPT hammer was used to advance the split-barrel sampler in the borings performed on this site. A greater efficiency is typically achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. Published correlations between the SPT values and soil properties are based on the lower efficiency cathead and rope method. This higher efficiency affects the standard penetration resistance blow count (N) value by increasing the penetration per hammer blow over what would be obtained using the cathead and rope method. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations.

These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

## **Shear Wave Velocity Testing**

Terracon utilized the SeisOpt® ReMi™ method to develop the full depth shear wave velocity profile at the site for use in determining the seismic site class. This method employs non-linear optimization technology to derive one-dimensional S-wave velocities from refraction microtremor (ambient noise) recordings using a typical seismograph and standard, low frequency, refraction geophones. We utilized a series of receivers (geophones) set along a straight-line array with a 25±-foot receiver spacing for a total length of about 275 feet along Array 1 shown on **Exploration Plan**. Unfiltered, 30-second records were recorded using the background 'noise' created by the moving traffic and other ambient vibrations. The collected data, the response spectrum in the 5 to 40 Hz range, was processed using the computer software SeisOpt® ReMi™ by Optim, LLC with the results plotted as a conventional shear wave velocity vs. depth profile. The shear wave velocity profile obtained using the SeisOpt® ReMi™ data reduction method is shown in **Exploration Results**.

## **Laboratory Testing**

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D422 Standard Test Method for Particle-Size Analysis of Soils
- ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.



## **SITE LOCATION AND EXPLORATION PLANS**

### **Contents:**

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above.

## SITE LOCATION

BHS - Safe Room ■ Barnwell, SC

March 16, 2021 ■ Terracon Project No. 73205002



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY  
QUADRANGLES INCLUDE: LONG BRANCH, SC (1/1/1989), BLACKVILLE, SC (1/1/1987), SNELLING, SC (1/1/1989) and BARNWELL, SC (1/1/1987).



## EXPLORATION PLAN

BHS - Safe Room ■ Barnwell, SC

March 16, 2021 ■ Terracon Project No. 73205002

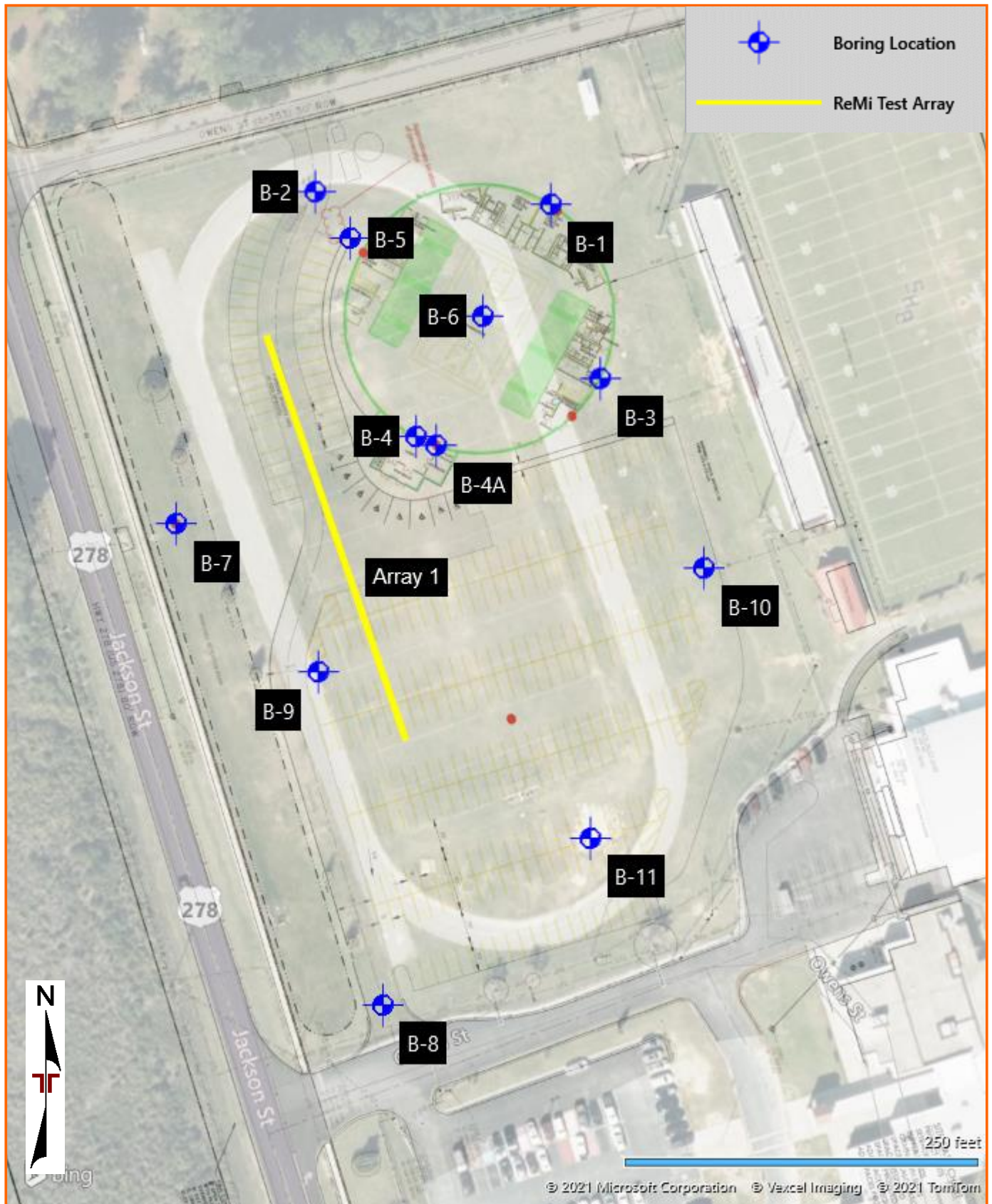


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

## **EXPLORATION RESULTS**

### **Contents:**

Boring Logs (B-1 through B-11)  
Shear-Wave Velocity Profile  
Summary of Laboratory Results  
Atterberg Limits  
Grain Size Distribution Curve  
Moisture Density Relationship

Note: All attachments are one page unless noted above.

# BORING LOG NO. B-1

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2306° Longitude: -81.3601°<br><br>Approximate Surface Elev.: 192 (Ft.) +/-<br>ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-------------------|------------------------------|---------------|
|             |             | DEPTH   |             |                          |             |                    |                   |                              |               |
|             |             | 0.3   |             |                          |             |                    |                   |                              |               |
|             |             | <b>TOPSOIL</b> , (3 inches)   | 1.5+/-      |                          |             |                    |                   |                              |               |
| 1           |             | <b>CLAYEY SAND (SC)</b> , fine to medium grained, brown, medium dense, (Coastal Plain)  |             |                          |             | 3-4-7<br>N=11      | 18.6              |                              | 40            |
|             |             | 5.5   |             |                          |             | 5-5-10<br>N=15     | 19.1              |                              |               |
|             |             | <b>SANDY FAT CLAY (CH)</b> , gray, very stiff   | 186.5+/-    |                          |             | 6-8-10<br>N=18     | 21.8              |                              | 56            |
|             |             |   |             |                          |             | 9-11-15<br>N=26    | 22.3              |                              |               |
|             |             |   |             |                          |             | 7-7-9<br>N=16      | 15.5              |                              |               |
| 2           |             |   |             |                          |             | 7-8-11<br>N=19     |                   |                              |               |
|             |             | 22.0  |             |                          |             | 6-7-9<br>N=16      |                   |                              |               |
|             |             | <b>CLAYEY SAND (SC)</b> , fine to medium grained, gray, medium dense  | 170+/-      |                          |             | 5-7-11<br>N=18     |                   |                              |               |
|             |             |   |             |                          |             | 5-5-8<br>N=13      |                   |                              |               |
|             |             | 35.0  |             |                          |             |                    |                   |                              |               |
|             |             | <b>Boring Terminated at 35 Feet</b>   | 157+/-      |                          |             |                    |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling  
1' (After 5 Days)

Cave-in 5' (After 5 Days)

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21


# BORING LOG NO. B-2

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG   | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2306° Longitude: -81.3606°<br><br>Approximate Surface Elev.: 191 (Ft.) +/-<br>DEPTH<br>ELEVATION (Ft.) | DEPTH (Ft.)        | WATER LEVEL<br>OBSERVATIONS | SAMPLE TYPE | FIELD TEST<br>RESULTS            | WATER<br>CONTENT (%) | ATTERBERG<br>LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|---|--|--------------------|-----------------------------|-------------|----------------------------------|----------------------|---------------------------------|---------------|
| 1           |  | 0.3' <b>TOPSOIL</b> , (3 inches)<br><b>CLAYEY SAND (SC)</b> , fine to medium grained, brown, loose, (Coastal Plain)<br>5.0'  | 0.5 +/-<br>186 +/- |                             |             | 3-2-3<br>N=5<br><br>2-3-4<br>N=7 |                      |                                 |               |
|             |   | <b>Boring Terminated at 5 Feet</b>   |                    |                             |             |                                  |                      |                                 |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling  
No free water observed after 5 Days

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21

# BORING LOG NO. B-3

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2303° Longitude: -81.3600°<br>Approximate Surface Elev.: 191 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|--------------------------|-------------|--------------------|-------------------|------------------------------|---------------|
|             |             | DEPTH<br>ELEVATION (Ft.)   |             |                          |             |                    |                   |                              |               |
|             |             | 0.3 TOPSOIL, (3 inches) 190.5+/-   |             |                          |             |                    |                   |                              |               |
|             |             | CLAYEY SAND (SC), fine to medium grained, tan, medium dense, (Coastal Plain)   |             |                          |             | 5-5-6<br>N=11      | 18.9              |                              |               |
|             |             |  | 5           |                          |             | 4-12-14<br>N=26    | 16.0              |                              |               |
|             |             |  |             |                          |             | 6-9-12<br>N=21     | 21.6              |                              |               |
|             |             |  | 10          |                          |             | 9-9-14<br>N=23     | 16.3              |                              |               |
|             |             |  | 15          |                          |             | 7-8-11<br>N=19     |                   |                              |               |
|             |             | 17.0 SANDY FAT CLAY (CH), gray, very stiff 174+/-  |             |                          |             | 7-7-12<br>N=19     |                   |                              |               |
|             |             |  | 20          |                          |             | 8-8-7<br>N=15      |                   |                              |               |
|             |             | 22.0 CLAYEY SAND (SC), fine grained, tan, medium dense 169+/-  |             |                          |             | 7-8-9<br>N=17      |                   |                              |               |
|             |             |  | 25          |                          |             | 6-7-7<br>N=14      |                   |                              |               |
|             |             | 32.0 SILTY SAND (SM), fine to medium grained, brown, medium dense 159+/-   |             |                          |             |                    |                   |                              |               |
|             |             | 35.0 Boring Terminated at 35 Feet 156+/-   | 35          |                          |             |                    |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling  
10' (After 5 Days)

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21



# BORING LOG NO. B-4

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG  | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2302° Longitude: -81.3604°<br>Approximate Surface Elev.: 191 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|--|--|-------------|--------------------------|-------------|--------------------|-------------------|------------------------------|---------------|
|             |  | DEPTH<br>ELEVATION (Ft.)   |             |                          |             |                    |                   |                              |               |
|             |  | 0.3 <b>TOPSOIL</b> , (3-1/2 inches)  | 190.5+/-    |                          |             |                    |                   |                              |               |
| 1           |   | <b>CLAYEY SAND (SC)</b> , fine to medium grained, brown, very loose to loose, (Coastal Plain)  |             |                          |             | 1-1-WOH<br>N=1     | 14.4              |                              | 20            |
|             |  |  |             |                          |             | WOH/12"-1<br>N=1   |                   |                              |               |
|             |  |  |             |                          |             | 3-3-4<br>N=7       |                   |                              |               |
|             |  | 8.0  | 183+/-      |                          |             | 5-12-12<br>N=24    |                   |                              |               |
|             |  | <b>SANDY FAT CLAY (CH)</b> , tan, very stiff   |             |                          |             | 6-8-10<br>N=18     |                   |                              |               |
|             |  |  |             |                          |             | 7-9-13<br>N=22     |                   |                              |               |
| 2           |  |  |             |                          |             | 7-7-12<br>N=19     |                   |                              |               |
|             |  |  |             |                          |             | 8-7-11<br>N=18     |                   |                              |               |
|             |  | 27.0   | 164+/-      |                          |             | 9-10-15<br>N=25    |                   |                              |               |
|             |  | <b>FAT CLAY WITH SAND (CH)</b> , gray, very stiff  |             |                          |             |                    |                   |                              |               |
|             |  |  |             |                          |             |                    |                   |                              |               |
|             |  | 35.0   | 156+/-      |                          |             |                    |                   |                              |               |
|             |  | <b>Boring Terminated at 35 Feet</b>  |             |                          |             |                    |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger


See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).


Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

 4' (End of Drilling)  
No free water observed after 5 Days

 Cave-in 4' (After 5 Days)

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21




# BORING LOG NO. B-4A

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG   | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2306° Longitude: -81.3606°<br>Approximate Surface Elev.: 191 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|---|--|-------------|--------------------------|-------------|--------------------|-------------------|------------------------------|---------------|
|             |   | DEPTH<br>ELEVATION (Ft.)   |             |                          |             |                    |                   |                              |               |
| 1           |  | 0.2' <b>TOPSOIL</b> , (2 inches)<br><b>CLAYEY SAND (SC)</b> , fine to medium grained, brown, (Coastal Plain)                         | 191+/-      |                          |             | 2,2,4 DCP          |                   |                              |               |
|             |   |  | 5           |                          |             | 7,6,7 DCP          |                   |                              |               |
|             |   |  |             |                          |             | 7,7,7 DCP          |                   |                              |               |
|             |   |  |             |                          |             | 5,4,4 DCP          |                   |                              |               |
|             |   |  |             |                          |             | 2,2,2 DCP          |                   |                              |               |
|             |   | 7.5' <b>Boring Terminated at 7.5 Feet</b>  | 183.5+/-    |                          |             |                    |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:  
Hand Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-22-2021

Boring Completed: 02-22-2021

Drill Rig: Hand Auger

Driller: C. Costner

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21

# BORING LOG NO. B-5

Page 1 of 2

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2302° Longitude: -81.3604°<br>Approximate Surface Elev.: 191 (Ft.) +/- | DEPTH (Ft.) | ELEVATION (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|-----------------|--------------------------|-------------|--------------------|-------------------|------------------------------|---------------|
|             |             | 0.2' <b>TOPSOIL</b> , (2 inches)   |             | 191+/-          |                          |             |                    |                   |                              |               |
|             |             | <b>SILTY SAND (SM)</b> , fine to medium grained, brown, loose, (Coastal Plain)   |             |                 |                          |             | 2-2-3<br>N=5       |                   |                              |               |
|             |             |  |             |                 |                          |             | 3-3-5<br>N=8       |                   |                              |               |
|             |             | 5.5' <b>CLAYEY SAND (SC)</b> , fine to medium grained, gray, loose to medium dense   |             | 185.5+/-        |                          |             | 3-4-4<br>N=8       |                   |                              |               |
|             |             |  |             |                 |                          |             | 2-5-8<br>N=13      |                   |                              |               |
| 1           |             |  |             |                 |                          |             | 3-4-6<br>N=10      | 16.6              |                              | 30            |
|             |             |  |             |                 |                          |             | 7-7-9<br>N=16      |                   |                              |               |
|             |             | 22.0' <b>SANDY FAT CLAY (CH)</b> , tan, stiff to very stiff  |             | 169+/-          |                          |             | 5-5-6<br>N=11      | 27.8              | 75-26-49                     | 70            |
| 2           |             |  |             |                 |                          |             | 4-8-8<br>N=16      |                   |                              |               |
|             |             | 32.0' <b>CLAYEY SAND (SC)</b> , fine to medium grained, gray, medium dense   |             | 159+/-          |                          |             | 7-7-8<br>N=15      |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

3' (End of Drilling)  
No free water observed after 5 Days

Cave-in 7' (After 5 Days)

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-16-2021

Boring Completed: 02-22-2021

Drill Rig: CME 55

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21






# BORING LOG NO. B-6

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG   | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2304° Longitude: -81.3602°<br><br>Approximate Surface Elev.: 191 (Ft.) +/-<br>DEPTH<br>ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS  | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|---|--|-------------|---|-------------|--------------------|-------------------|------------------------------|---------------|
| 1           |  | 0.2' <b>TOPSOIL</b> , (2 inches)<br><b>CLAYEY SAND (SC)</b> , fine to medium grained, brown, loose, (Coastal Plain)  | 191+/-      |  | X           | 3-4-4<br>N=8       |                   |                              |               |
|             |   |  |             |   | X           | 3-4-5<br>N=9       |                   |                              |               |
|             |   | 5.5  | 185.5+/-    |   | X           | 5-6-6<br>N=12      |                   |                              |               |
|             |   |  |             |   | X           | 5-8-9<br>N=17      |                   |                              |               |
| 2           |  | <b>SANDY FAT CLAY (CH)</b> , gray, stiff to very stiff   |             |   | X           | 8-14-14<br>N=28    |                   |                              |               |
|             |   | 15.0   | 176+/-      |   |             |                    |                   |                              |               |
|             |   | <b>Boring Terminated at 15 Feet</b>  |             |   |             |                    |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger


See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).


Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

 2' (End of Drilling)  
No free water observed after 5 Days

 Cave-in 2' (After 5 Days)

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21

# BORING LOG NO. B-7

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2300° Longitude: -81.3610°<br>Approximate Surface Elev.: 188 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|--------------------------|-------------|--------------------|-------------------|------------------------------|---------------|
|             |             | DEPTH<br>0.2' <u>TOPSOIL</u> , (2 inches) ELEVATION (Ft.) 188+/-   |             |                          |             |                    |                   |                              |               |
|             |             | <u>SANDY FAT CLAY (CH)</u> , brown, soft to very soft, (Coastal Plain)   |             |                          |             | 2-2-2<br>N=4       | 24.2              |                              | 53            |
|             |             |  | 5           |                          |             | WOH/12"-1<br>N=1   | 28.2              |                              |               |
|             |             |  |             |                          |             | 1-2-2<br>N=4       |                   |                              |               |
|             |             | 8.0' <u>CLAYEY SAND (SC)</u> , fine to medium grained, brown, medium dense 180+/-  | 10          |                          |             | 3-5-10<br>N=15     |                   |                              |               |
|             |             |  |             |                          |             | 5-8-11<br>N=19     |                   |                              |               |
|             |             | 15.0' <u>Boring Terminated at 15 Feet</u> 173+/-   | 15          |                          |             |                    |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).


Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling  
No free water observed after 5 Days

 Cave-in 3' (After 5 Days)

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21

## Page 1 of 1

**CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC**

| MODEL LAYER | GRAPHIC LOG     | LOCATION See <a href="#">Exploration Plan</a><br><br>Latitude: 33.2291° Longitude: -81.3605°<br><br>Approximate Surface Elev.: 193 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS | PERCENT FINES |
|-------------|-----------------|--|-------------|--------------------------|-------------|--------------------|-------------------|------------------|---------------|
|             |                 |  |             |                          |             |                    |                   | LL-PL-PI         |               |
| DEPTH       | ELEVATION (Ft.) |  |             |                          |             |                    |                   |                  |               |
| 1           |                 | 0.2  | 193+/-      |                          |             |                    |                   |                  |               |
|             |                 |  |             |                          |             | 5-6-6<br>N=12      | 21.3              |                  |               |
|             |                 |  |             |                          |             | 9-12-12<br>N=24    |                   |                  |               |
|             |                 | 5.0  | 188+/-      | 5                        |             |                    |                   |                  |               |
|             |                 | <b>Boring Terminated at 5 Feet</b>   |             |                          |             |                    |                   |                  |               |

Hammer Type: Automatic

Project No.: 73205002

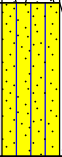



# BORING LOG NO. B-9

Page 1 of 1

PROJECT: BHS - Safe Room

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

SITE: 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG   | LOCATION See <a href="#">Exploration Plan</a><br>Latitude: 33.2297° Longitude: -81.3606°<br><br>Approximate Surface Elev.: 191 (Ft.) +/-<br>DEPTH<br>ELEVATION (Ft.) | DEPTH (Ft.)      | WATER LEVEL OBSERVATIONS  | SAMPLE TYPE  | FIELD TEST RESULTS               | WATER CONTENT (%) | ATTERBERG LIMITS<br>LL-PL-PI | PERCENT FINES |
|-------------|---|--|------------------|---|--|----------------------------------|-------------------|------------------------------|---------------|
| 1           |  | 0.2' <b>TOPSOIL</b> , (2 inches)<br><b>SILTY SAND (SM)</b> , fine to medium grained, dark brown, loose, (Coastal Plain)<br>5.0' <b>Boring Terminated at 5 Feet</b>   | 191+/-<br>186+/- |  | <br> | 2-2-3<br>N=5<br><br>3-4-5<br>N=9 |                   |                              |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).


Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling  
No free water observed after 5 Days

 Cave-in 1' (After 5 Days)

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_ 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/15/21

## Page 1 of 1

**CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC**

**SITE:** 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG | LOCATION  | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-------------------|------------------|---------------|
|             |             | See Exploration Plan  |             |                          |             |                    |                   | LL-PL-PI         |               |
|             |             | Latitude: 33.2299° Longitude: -81.3597°                                       |             |                          |             |                    |                   |                  |               |
|             |             | Approximate Surface Elev.: 192 (Ft.) +/-                                      |             |                          |             |                    |                   |                  |               |
|             |             | DEPTH   |             |                          |             |                    |                   |                  |               |
|             |             | ELEVATION (Ft.)   |             |                          |             |                    |                   |                  |               |
|             |             | 0.2   |             |                          |             |                    |                   |                  |               |
|             |             | TOPSOIL, (2 inches)   |             |                          |             |                    |                   |                  |               |
|             |             | CLAYEY SAND (SC), fine to medium grained, gray, medium dense, (Coastal Plain) |             |                          |             |                    |                   |                  |               |
|             |             | 5.0   |             |                          |             |                    |                   |                  |               |
|             |             | 187+/-  |             |                          |             |                    |                   |                  |               |
|             |             | Boring Terminated at 5 Feet   |             |                          |             |                    |                   |                  |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See **Exploration and Testing Procedures** for a description of field and laboratory procedures used and additional data (If any).

See **Supporting Information** for explanation of symbols and abbreviations.

Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling  
No free water observed after 5 Days

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Drill Rig: CME-45C

Project No.: 73205002

Boring Completed: 02-22-2021


Driller: S. Truesdale



## Page 1 of 1

**CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC**

**SITE:** 474 Jackson Street  
Barnwell, SC

| MODEL LAYER | GRAPHIC LOG   | LOCATION See <a href="#">Exploration Plan</a><br><br>Latitude: 33.2294° Longitude: -81.3600°<br><br>Approximate Surface Elev.: 191 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | WATER CONTENT (%) | ATTERBERG LIMITS | PERCENT FINES |
|-------------|---|--|-------------|--------------------------|-------------|--------------------|-------------------|------------------|---------------|
|             |   |  |             |                          |             |                    |                   | LL-PL-PI         |               |
| DEPTH       | ELEVATION (Ft.)   |  |             |                          |             |                    |                   |                  |               |
| 1           |  | 0.2' TOPSOIL, (2 inches)   | 191+/-      |                          |             |                    |                   |                  |               |
|             |   | CLAYEY SAND (SC), fine to medium grained, gray, loose to medium dense, (Coastal Plain)   |             |                          | X           | 3-4-5<br>N=9       |                   |                  |               |
|             |   | 5.0  | 186+/-      |                          | X           | 7-8-11<br>N=19     |                   |                  |               |
|             |   | Boring Terminated at 5 Feet  | 5           |                          |             |                    |                   |                  |               |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
2-1/4" Continuous Flight Auger

See **Exploration and Testing Procedures** for a description of field and laboratory procedures used and additional data (If any).

See **Supporting Information** for explanation of symbols and abbreviations.

Notes:

Abandonment Method:  
Boring backfilled with auger cuttings upon completion.

## WATER LEVEL OBSERVATIONS

No free water observed at end of drilling  
No free water observed after 5 Days

**Terracon**  
521 Clemson Rd  
Columbia, SC

Boring Started: 02-17-2021

Boring Completed: 02-22-2021

Drill Rig: CME-45C

Driller: S. Truesdale

Project No.: 73205002

## REMI ARRAY PROFILE

BHS Safe Room ■ Barnwell, SC

March 16, 2021 ■ Terracon Project No. 73205002

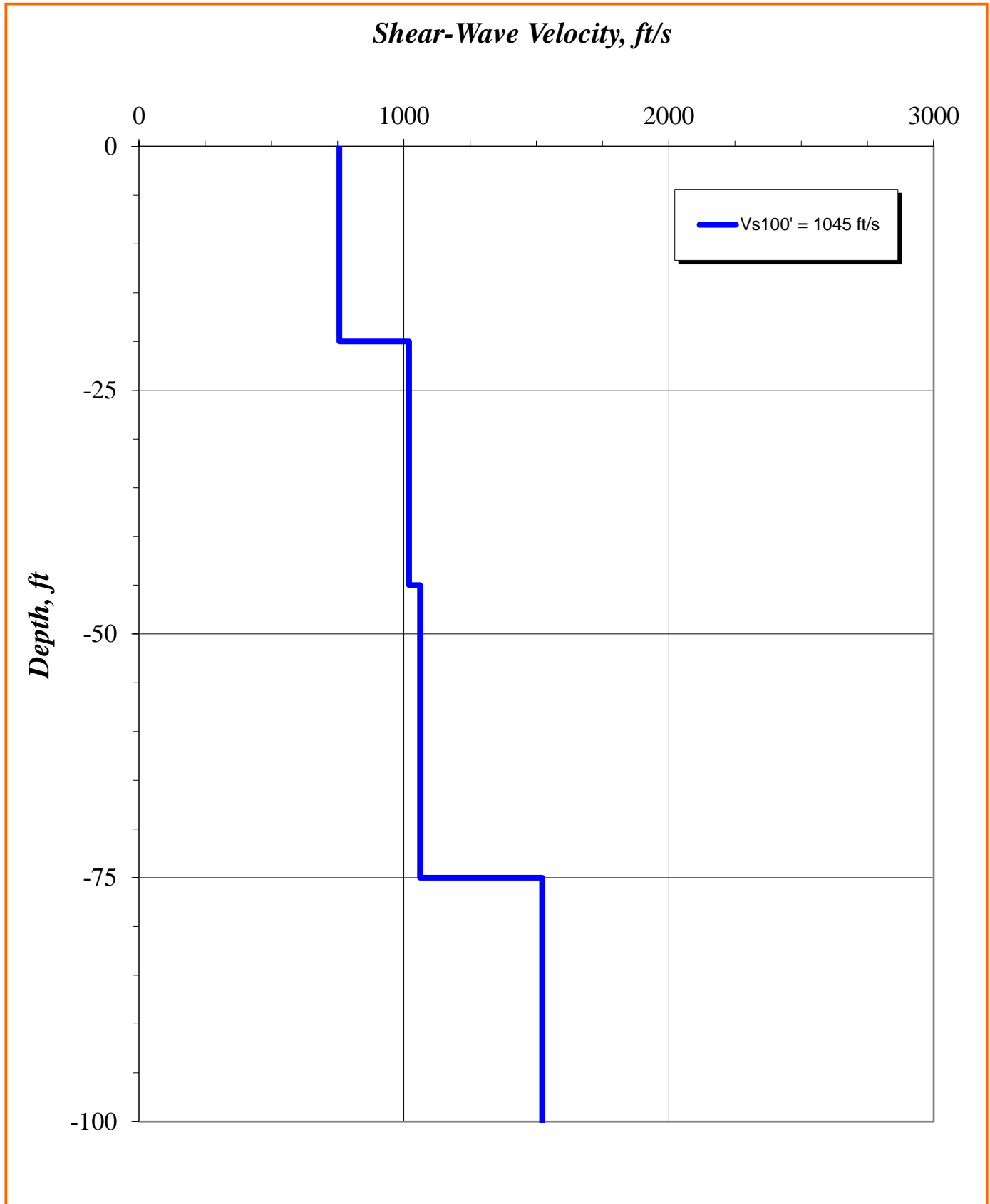


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS  
NOT INTENDED FOR CONSTRUCTION PURPOSES

## Sheet 1 of 1

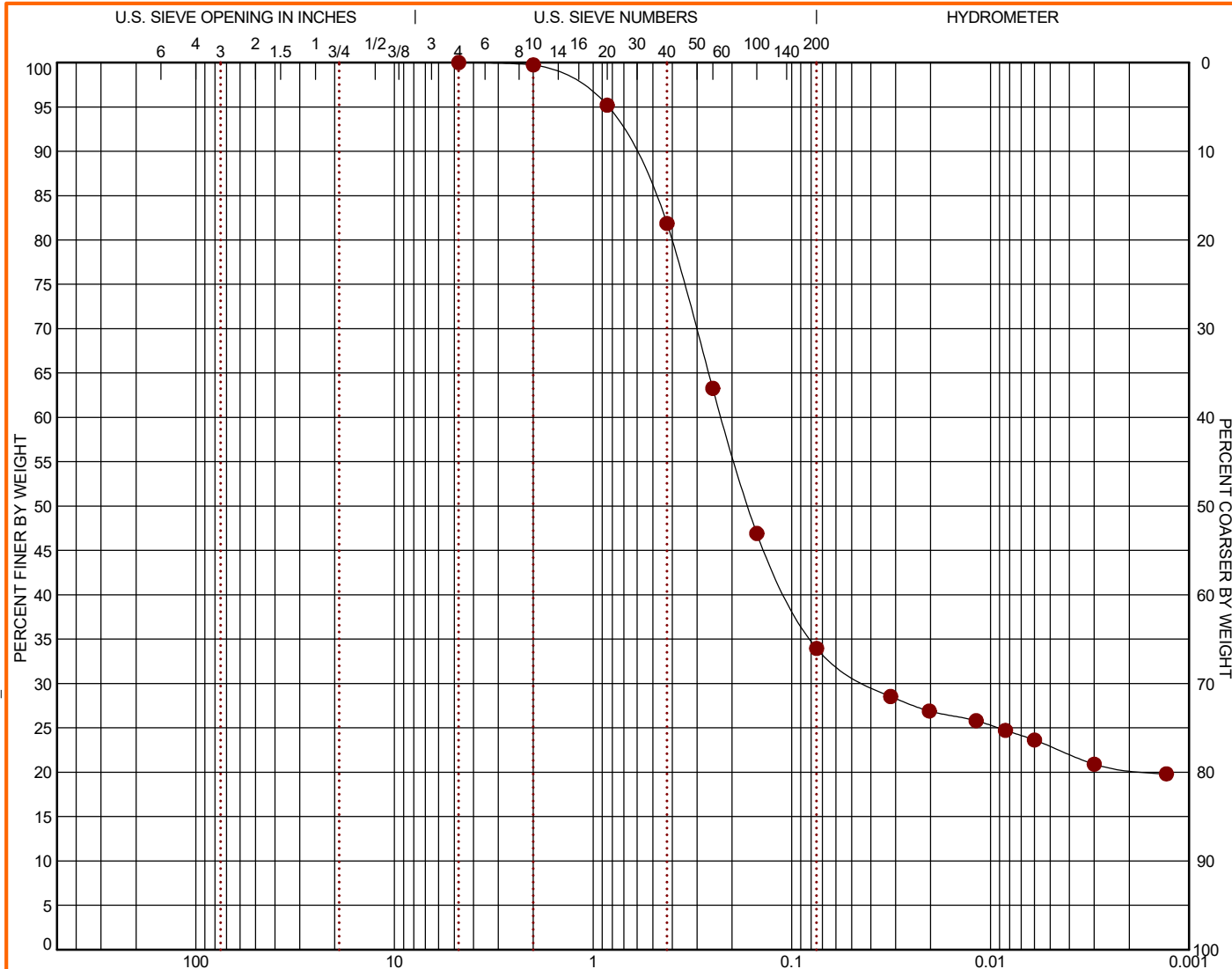
CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART LAB SUMMARY PORTRAIT 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/10/21

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 73205002 BHS - SAFE ROOM.GPJ TERRACON DATATEMPLATE.GDT 3/10/21



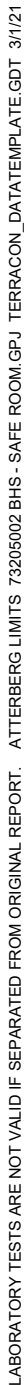
| COBBLES | GRAVEL |      | SAND   |        |      | SILT OR CLAY |
|---------|--------|------|--------|--------|------|--------------|
|         | coarse | fine | coarse | medium | fine |              |

| BORING ID    | DEPTH | % COBBLES | % GRAVEL | % SAND | % SILT | % FINES | % CLAY | USCS |
|--------------|-------|-----------|----------|--------|--------|---------|--------|------|
| B-8 B-9 B-10 | 0 - 3 | 0.0       | 0.0      | 66.0   | 11.0   |         | 22.9   |      |
|              |       |           |          |        |        |         |        |      |
|              |       |           |          |        |        |         |        |      |

| GRAIN SIZE      |       |  |  | SOIL DESCRIPTION |  |  |  |
|-----------------|-------|--|--|------------------|--|--|--|
|                 |       |  |  |                  |  |  |  |
| D <sub>60</sub> | 0.226 |  |  |                  |  |  |  |
| D <sub>30</sub> | 0.04  |  |  |                  |  |  |  |
| D <sub>10</sub> |       |  |  |                  |  |  |  |
| COEFFICIENTS    |       |  |  | REMARKS          |  |  |  |
|                 |       |  |  |                  |  |  |  |
| C <sub>c</sub>  |       |  |  |                  |  |  |  |
| C <sub>u</sub>  |       |  |  |                  |  |  |  |

|  |  |  |
|--|--|--|
| PROJECT: BHS - Safe Room                 | <p>521 Clemson Rd<br/>Columbia, SC</p> | PROJECT NUMBER: 73205002                               |
| SITE: 474 Jackson Street<br>Barnwell, SC |  | CLIENT: Thomas & Hutton Engineering Co<br>Columbia, SC |

## ASTM D4318

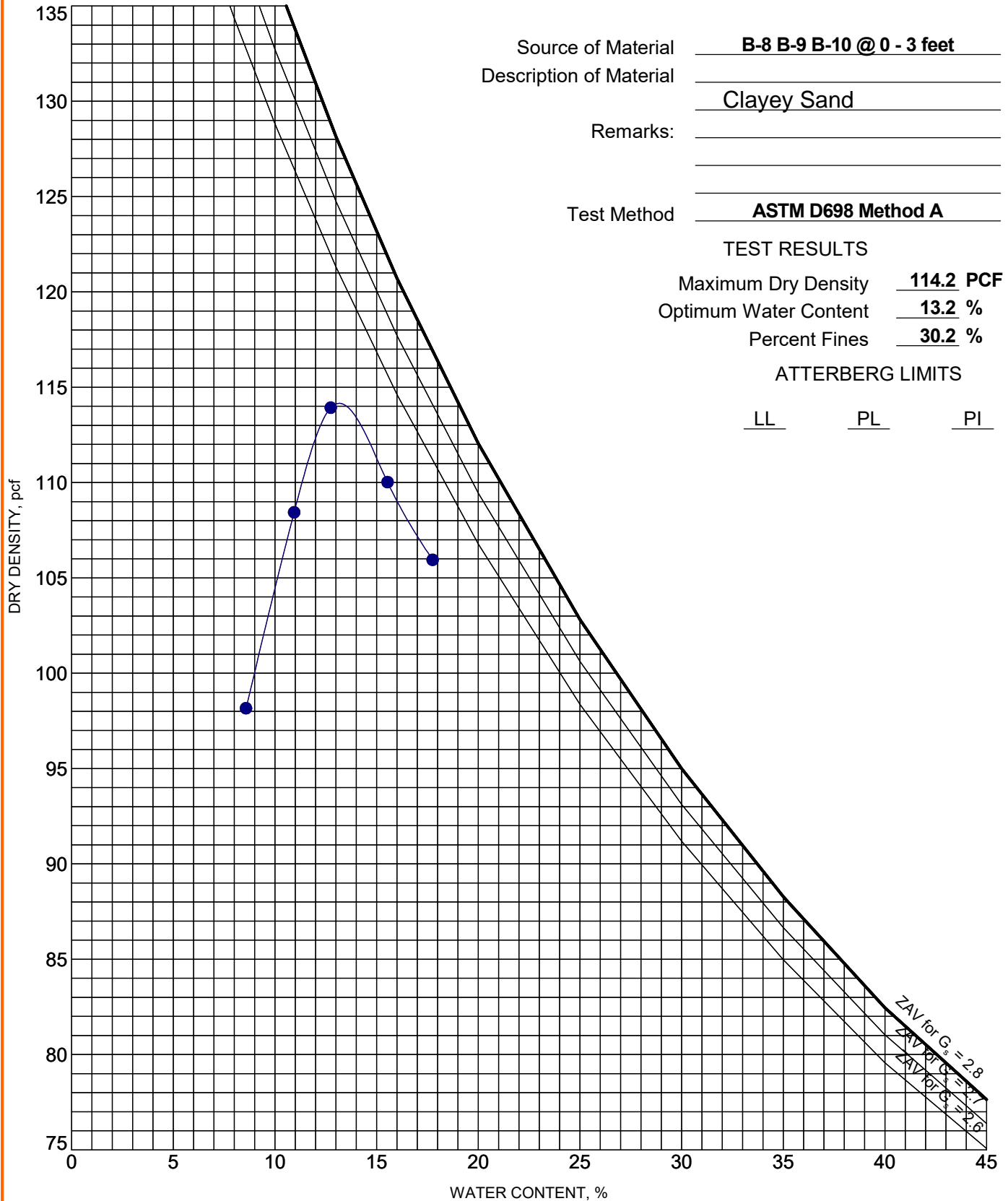


CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

# MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V2 73205002 BHS - SAFE ROOM.GPJ TERRACON\_DATATEMPLATE.GDT 3/1/21



PROJECT: BHS - Safe Room

SITE: 474 Jackson Street  
Barnwell, SC

**Terracon**  
521 Clemson Rd  
Columbia, SC

PROJECT NUMBER: 73205002

CLIENT: Thomas & Hutton Engineering Co  
Columbia, SC

## **SUPPORTING INFORMATION**

### **Contents:**

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.

| Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>A</sup> |  |   |   |        | Soil Classification                |                                    |
|--|--|---|---|--------|------------------------------------|------------------------------------|
|  |  |   |   |        | Group Symbol                       | Group Name <sup>B</sup>            |
| Coarse-Grained Soils:<br>More than 50% retained on No. 200 sieve                         | Gravels:<br>More than 50% of coarse fraction retained on No. 4 sieve | Clean Gravels:<br>Less than 5% fines <sup>C</sup>       | Cu ≥ 4 and 1 ≤ Cc ≤ 3 <sup>E</sup>          | GW     | Well-graded gravel <sup>F</sup>    |                                    |
|  |  |   | Cu < 4 and/or [Cc<1 or Cc>3.0] <sup>E</sup> | GP     | Poorly graded gravel <sup>F</sup>  |                                    |
|  |  | Gravels with Fines:<br>More than 12% fines <sup>C</sup> | Fines classify as ML or MH                  | GM     | Silty gravel <sup>F, G, H</sup>    |                                    |
|  |  |   | Fines classify as CL or CH                  | GC     | Clayey gravel <sup>F, G, H</sup>   |                                    |
|  | Sands:<br>50% or more of coarse fraction passes No. 4 sieve          | Clean Sands:<br>Less than 5% fines <sup>D</sup>         | Cu ≥ 6 and 1 ≤ Cc ≤ 3 <sup>E</sup>          | SW     | Well-graded sand <sup>I</sup>      |                                    |
|  |  |   | Cu < 6 and/or [Cc<1 or Cc>3.0] <sup>E</sup> | SP     | Poorly graded sand <sup>I</sup>    |                                    |
|  |  | Sands with Fines:<br>More than 12% fines <sup>D</sup>   | Fines classify as ML or MH                  | SM     | Silty sand <sup>G, H, I</sup>      |                                    |
|  |  |   | Fines classify as CL or CH                  | SC     | Clayey sand <sup>G, H, I</sup>     |                                    |
| Fine-Grained Soils:<br>50% or more passes the No. 200 sieve                              | Silts and Clays:<br>Liquid limit less than 50                        | Inorganic:  | PI > 7 and plots on or above “A”            | CL     | Lean clay <sup>K, L, M</sup>       |                                    |
|  |  |   | PI < 4 or plots below “A” line <sup>J</sup> | ML     | Silt <sup>K, L, M</sup>            |                                    |
|  |  | Organic:  | Liquid limit - oven dried                   | < 0.75 | OL                                 | Organic clay <sup>K, L, M, N</sup> |
|  |  |   | Liquid limit - not dried                    |        | Organic silt <sup>K, L, M, O</sup> |                                    |
|  | Silts and Clays:<br>Liquid limit 50 or more                          | Inorganic:  | PI plots on or above “A” line               | CH     | Fat clay <sup>K, L, M</sup>        |                                    |
|  |  |   | PI plots below “A” line                     | MH     | Elastic Silt <sup>K, L, M</sup>    |                                    |
|  |  | Organic:  | Liquid limit - oven dried                   | < 0.75 | OH                                 | Organic clay <sup>K, L, M, P</sup> |
|  |  |   | Liquid limit - not dried                    |        | Organic silt <sup>K, L, M, Q</sup> |                                    |
| Highly organic soils:  | Primarily organic matter, dark in color, and organic odor            |   |   | PT     | Peat                               |                                    |

<sup>A</sup> Based on the material passing the 3-inch (75-mm) sieve.

<sup>B</sup> If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup> Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

<sup>D</sup> Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

<sup>F</sup> If soil contains  $\geq 15\%$  sand, add "with sand" to group name.

<sup>G</sup> If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

<sup>H</sup> If fines are organic, add "with organic fines" to group name.

<sup>I</sup> If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.

<sup>J</sup> If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

<sup>K</sup> If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

<sup>L</sup> If soil contains  $\geq 30\%$  plus No. 200 predominantly sand, add "sandy" to group name.

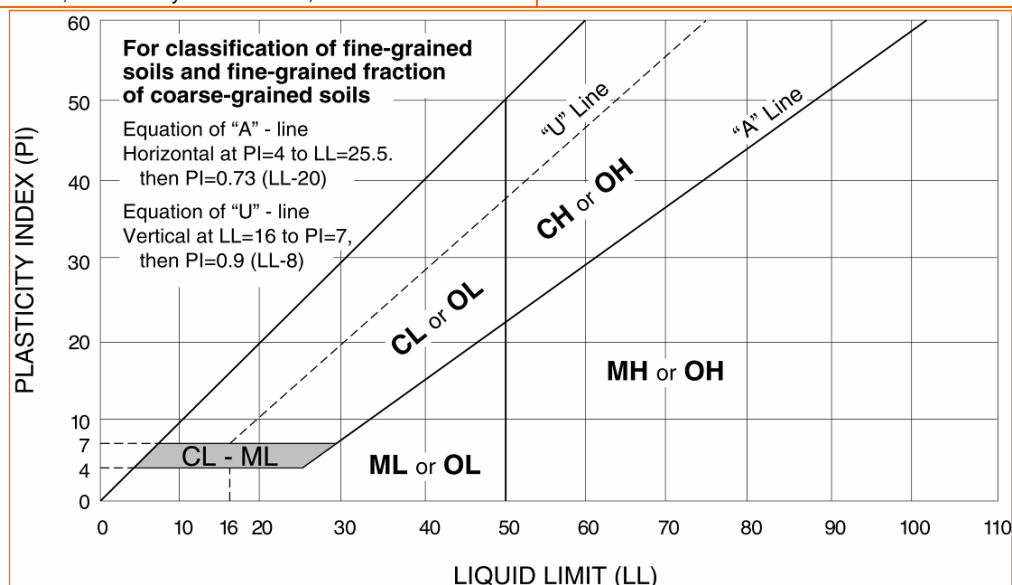
<sup>M</sup> If soil contains  $\geq 30\%$  plus No. 200, predominantly gravel, add "gravelly" to group name.

<sup>N</sup> PI  $\geq 4$  and plots on or above "A" line.

<sup>O</sup> PI < 4 or plots below "A" line.

<sup>P</sup> PI plots on or above "A" line.






<sup>Q</sup> PI plots below "A" line.





# GENERAL NOTES

## DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

| SAMPLING  | WATER LEVEL   | FIELD TESTS  |
|---|---|--|
|  Grab Sample  Split Spoon |  Water Initially Encountered<br> Water Level After a Specified Period of Time<br> Water Level After a Specified Period of Time<br><p>Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.</p> | <b>N</b> Standard Penetration Test Resistance (Blows/Ft.)<br><b>(HP)</b> Hand Penetrometer<br><b>(T)</b> Torvane<br><b>(DCP)</b> Dynamic Cone Penetrometer<br><b>UC</b> Unconfined Compressive Strength<br><b>(PID)</b> Photo-Ionization Detector<br><b>(OVA)</b> Organic Vapor Analyzer |

| DESCRIPTIVE SOIL CLASSIFICATION   |
|---|
| <p>Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.</p> |
| LOCATION AND ELEVATION NOTES  |
| <p>Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.</p>   |

| STRENGTH TERMS  |   |   |   |   |
|---|---|---|---|---|
| RELATIVE DENSITY OF COARSE-GRAINED SOILS<br>(More than 50% retained on No. 200 sieve.)<br>Density determined by Standard Penetration Resistance |   | CONSISTENCY OF FINE-GRAINED SOILS<br>(50% or more passing the No. 200 sieve.)<br>Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance |   |   |
| Descriptive Term (Density)  | Standard Penetration or N-Value Blows/Ft. | Descriptive Term (Consistency)  | Unconfined Compressive Strength Qu, (tsf) | Standard Penetration or N-Value Blows/Ft. |
| Very Loose  | 0 - 3                                     | Very Soft   | less than 0.25                            | 0 - 1                                     |
| Loose   | 4 - 9                                     | Soft  | 0.25 to 0.50                              | 2 - 4                                     |
| Medium Dense  | 10 - 29                                   | Medium Stiff  | 0.50 to 1.00                              | 4 - 8                                     |
| Dense   | 30 - 50                                   | Stiff   | 1.00 to 2.00                              | 8 - 15                                    |
| Very Dense  | > 50                                      | Very Stiff  | 2.00 to 4.00                              | 15 - 30                                   |
|   |   | Hard  | > 4.00                                    | > 30                                      |

| RELATIVE PROPORTIONS OF SAND AND GRAVEL   |                                      | RELATIVE PROPORTIONS OF FINES             |                       |
|---|--------------------------------------|---|-----------------------|
| Descriptive Term(s) of other constituents | Percent of Dry Weight                | Descriptive Term(s) of other constituents | Percent of Dry Weight |
| Trace                                     | <15                                  | Trace                                     | <5                    |
| With                                      | 15-29                                | With                                      | 5-12                  |
| Modifier                                  | >30                                  | Modifier                                  | >12                   |
| GRAIN SIZE TERMINOLOGY                    |                                      | PLASTICITY DESCRIPTION                    |                       |
| Major Component of Sample                 | Particle Size                        | Term                                      | Plasticity Index      |
| Boulders                                  | Over 12 in. (300 mm)                 | Non-plastic                               | 0                     |
| Cobbles                                   | 12 in. to 3 in. (300mm to 75mm)      | Low                                       | 1 - 10                |
| Gravel                                    | 3 in. to #4 sieve (75mm to 4.75 mm)  | Medium                                    | 11 - 30               |
| Sand                                      | #4 to #200 sieve (4.75mm to 0.075mm) | High                                      | > 30                  |
| Silt or Clay                              | Passing #200 sieve (0.075mm)         |   |                       |