



PROJECT MANUAL

FOR

SHELBY COUNTY
PUBLIC SAFETY RADIO
TOWERS PROJECT

April 11, 2024

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LEGAL ADVERTISEMENT**

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STATE OF ALABAMA

COUNTY OF SHELBY

LEGAL NOTICE

NOTICE TO CONTRACTORS

Shelby County will receive sealed bids in the office of Chief Financial Officer, Shelby County Administration Building, 200 West College St. Room 125, Columbiana, AL 35051 for the Shelby County Public Safety Radio Towers Project until Tuesday, May 7, 2024 at 2:00 p.m. and at that time publicly opened.

Plans and specifications will be available at the Shelby County Facilities & General Services Office, 280 McDow Road Columbiana, AL 35051 after 12:00 noon on April 15, 2024.

Fee is \$20.00 which includes the cost of plans and specifications when picked up at the above office. No refunds will be made. Electronic copies of bid documents may be obtained by email at no charge. To obtain electronic copies, send request to rlecroy@shelbyal.com.

A mandatory virtual pre-bid conference will be held via Zoom call at 10:00 a.m. on April 30, 2024. Bidders are responsible for contacting Gina LeCroy at rlecroy@shelbyal.com to attain a link to join the virtual meeting. **Attendance at the Pre-Bid Conference IS REQUIRED for all General Contractor Bidders** intending to submit a Proposal, and is highly recommended for Subcontractors. Bids from General Contractors not attending the Pre-Bid Conference will be rejected.

Please contact Gina LeCroy, at rlecroy@shelbyal.com with any questions regarding this project.

April 14
April 21
April 28

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**ARTICLE 1
DEFINITIONS**

Whenever the following terms, or pronouns in place of them, are used in the Contract Documents, the intent and meaning shall be interpreted as follows:

ENGINEER OR ARCHITECT: The Engineer or Architect is the person or entity lawfully licensed to practice architecture in the State of Alabama, who is under contract with the Owner as the primary design professional for the Project and identified as the Engineer or Architect in the Construction Contract. The term “Engineer or Architect” means the Engineer or Architect or the Engineer or Architect’s authorized representative. If the employment of the Engineer or Architect is terminated, the Owner shall employ a new Engineer or Architect whose status under the Contract Documents shall be that of the former Engineer or Architect

CONTRACT: The Contract is the embodiment of the Contract Documents. The Contract represents the entire and integrated agreement between the Owner and Contractor and supersedes any prior written or oral negotiations, representations or agreements that are not incorporated into the Contract Documents. The Contract may be amended only by a Contract Change Order or a Modification to the Construction Contract. The contractual relationship which the Contract creates between the Owner and the Contractor extends to no other persons or entities.

DEFECTIVE WORK: The term “Defective Work” shall apply to: **(1)** any product, material, system, equipment, or service, or its installation or performance, which does not conform to the requirements of the Contract Documents, **(2)** in-progress or completed Work the workmanship of which does not conform to the quality specified or, if not specified, to the quality produced by skilled workers performing work of a similar nature on similar projects in the state, **(3)** substitutions and deviations not properly submitted and approved or otherwise authorized, **(4)** temporary supports, structures, or construction which will not produce the results required by the Contract Documents, and **(5)** materials or equipment rendered unsuitable for incorporation into the Work due to improper storage or protection.

DRAWINGS: The Drawings are the portions of the Contract Documents showing graphically the design, location, layout, and dimensions of the Work, in the form of plans, elevations, sections, details, schedules, and diagrams.

NOTICE TO PROCEED: A proceed order issued by the Owner or Director, as applicable, fixing the date on which the Contractor shall begin the prosecution of the Work, which is also the date on which the Contract Time shall begin.

OWNER: The Owner is the entity or entities identified as such in the Construction Contract and is referred to throughout the Contract Documents as if singular in number. The term “Owner” means the Owner or the Owner’s authorized representative. The term “Owner” as used herein shall be synonymous with the term “Awarding Authority” as defined and used in Title 39 - Public Works, Code of Alabama, 1975, as amended.

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THE PROJECT: The Project is the total construction of which the Work required by these Contract Documents may be the entirety or only a part with other portions to be constructed by the Owner or separate contractors.

PROJECT MANUAL: The Project Manual is the volume usually assembled for the Work which may include the Advertisement for Bids, Instructions to Bidders, sample forms, General Conditions of the Contract, Supplementary Conditions, and Specifications of the Work.

SPECIFICATIONS: The Specifications are that portion of the Contract Documents which set forth in writing the standards of quality and performance of products, equipment, materials, systems, and services and workmanship required for acceptable performance of the Work.

SUBCONTRACTOR: A Subcontractor is a person or entity who is undertaking the performance of any part of the Work by virtue of a contract with the Contractor. The term "Subcontractor" means a Subcontractor or its authorized representatives.

THE WORK: The Work is the construction and services required by the Contract Documents and includes all labor, materials, supplies, equipment, and other items and services as are necessary to produce the required construction and to fulfill the Contractor's obligations under the Contract. The Work may constitute the entire Project or only a portion of it.

ARTICLE 2

INTENT and INTERPRETATION of the CONTRACT DOCUMENTS

INTENT

It is the intent of the Contract Documents that the Contractor shall properly execute and complete the Work described by the Contract Documents, and unless otherwise provided in the Contract, the Contractor shall provide all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work, in full accordance with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

COMPLEMENTARY DOCUMENTS

The Contract Documents are complementary. If work is required by one Contract Document, the Contractor shall perform the work as if it were required by all of the Contract Documents. However, the Contractor shall be required to perform work only to the extent that is consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

ORDER of PRECEDENCE

Should any discrepancy arise between the various elements of the Contract Documents, Precedence shall be given to them in the following order unless to do so would contravene the apparent Intent of the Contract Documents stated in preceding Paragraph Titled INTENT:

(1) The Construction Contract.

(2) Addenda, with those of later date having precedence over those of earlier date.

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- (3) Supplementary Conditions (or other Conditions which modify the General Conditions of the Contract).
- (4) General Conditions of the Contract.
- (5) The Specifications.
- (6) Details appearing on the Drawings; large scale details shall take precedence over smaller scale details.
- (7) The Drawings; large scale drawings shall take precedence over smaller scale drawings.

INTERPRETATION

(1) The Contract Documents shall be interpreted collectively, each part complementing the others and consistent with the Intent of the Contract Documents stated in preceding Paragraph Titled INTENT. Unless an item shown or described in the Contract Documents is specifically identified to be furnished or installed by the Owner or others or is identified as “Not In Contract” (“N.I.C.”), the Contractor’s obligation relative to that item shall be interpreted to include furnishing, assembling, installing, finishing, and/or connecting the item at the Contractor’s expense to produce a product or system that is complete, appropriately tested, and in operative condition ready for use or subsequent construction or operation of the Owner or separate contractors. The omission of words or phrases for brevity of the Contract Documents, the inadvertent omission of words or phrases, or obvious typographical or written errors shall not defeat such interpretation as long as it is reasonably inferable from the Contract Documents as a whole.

(2) Words or phrases used in the Contract Documents which have well-known technical or construction industry meanings are to be interpreted consistent with such recognized meanings unless otherwise indicated.

(3) Except as noted otherwise, references to standard specifications or publications of associations, bureaus, or organizations shall mean the latest edition of the referenced standard specification or publication as of the date of the Advertisement for Bids.

(4) In the case of inconsistency between Drawings and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect or Engineer’s interpretation.

(5) Generally, portions of the Contract Documents written in longhand take precedence over typed portions, and typed portions take precedence over printed portions.

(6) Any doubt as to the meaning of the Contract Documents or any obscurity as to the wording of them, shall be promptly submitted in writing to the Engineer or Architect for written interpretation, explanation, or clarification.

SEVERABILITY

The partial or complete invalidity of any one or more provision of this Contract shall not affect the validity or continuing force and effect of any other provision.

**ARTICLE 3
CONTRACTOR'S REPRESENTATIONS**

By executing the Construction Contract the Contractor represents to the Owner:

A. The Contractor has visited the site of the Work to become familiar with local conditions under which the Work is to be performed and to evaluate reasonably observable conditions as compared with requirements of the Contract Documents.

B. The Contractor shall use its best skill and attention to perform the Work in an expeditious manner consistent with the Contract Documents.

C. The Contractor is an independent contractor and in performance of the Contract remains and shall act as an independent contractor having no authority to represent or obligate the Owner in any manner unless authorized by the Owner in writing.

**ARTICLE 4
SUPERVISION, SUPERINTENDENT, and EMPLOYEES**

A. SUPERVISION and CONSTRUCTION METHODS

(1) The term "Construction Methods" means the construction means, methods, techniques, sequences, and procedures utilized by the Contractor in performing the Work. The Contractor is solely responsible for supervising and coordinating the performance of the Work, including the selection of Construction Methods, unless the Contract Documents give other specific instructions concerning these matters.

(2) The Contractor is solely and completely responsible for job site safety, including the protection of persons and property.

(3) The Contractor shall be responsible to the Owner for acts and omissions of not only the Contractor and its agents and employees, but all persons and entities, and their agents and employees, who are performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

(4) The Contractor shall be responsible to inspect the in-progress and completed Work to verify its compliance with the Contract Documents and to insure that any element or portion of the Work upon which subsequent Work is to be applied or performed is in proper condition to receive the subsequent Work.

B.SUPERINTENDENT

(1) The Contractor shall employ and maintain a competent level of supervision for the performance of the Work at the Project site, including a superintendent who shall: **(a)** have full authority to receive instructions from the Engineer or Architect or Owner and to act on those instructions and **(b)** be present at the Project site at all times during which Work is being performed.

(2) Before beginning performance of the Work, the Contractor shall notify the Engineer or Architect in writing of the name and qualifications of its proposed superintendent so that the Owner may review the individual's qualifications. If, for reasonable cause, the Owner refuses to approve the individual, or withdraws its approval after once giving it, the Contractor shall name a different superintendent for the Owner's review and approval. Any disapproved superintendent will not perform in that capacity thereafter at the Project site.

C. EMPLOYEES

The Contractor shall permit only fit and skilled persons to perform the Work. The Contractor shall enforce safety procedures, strict discipline, and good order among persons performing the Work. The Contractor will remove from its employment on the Project any person who deliberately or persistently produces non-conforming Work or who fails or refuses to conform to reasonable rules of personal conduct contained in the Contract Documents or implemented by the Owner and delivered to the Contractor in writing during the course of the Work.

ARTICLE 5

REVIEW of CONTRACT DOCUMENTS and FIELD CONDITIONS by CONTRACTOR

A. In order to facilitate assembly and installation of the Work in accordance with the Contract Documents, before starting each portion of the Work, the Contractor shall examine and compare the relevant Contract Documents, and compare them to relevant field measurements made by the Contractor and any conditions at the site affecting that portion of the Work.

B. If the Contractor discovers any errors, omissions, or inconsistencies in the Contract Documents, the Contractor shall promptly report them to the Engineer or Architect as a written request for information that includes a detailed statement identifying the specific Drawings or Specifications that are in need of clarification and the error, omission, or inconsistency discovered in them.

(1) The Contractor shall not be expected to act as a licensed design professional and ascertain whether the Contract Documents comply with applicable laws, statutes, ordinances, building codes, and rules and regulations, but the Contractor shall be obligated to promptly notify the Engineer or Architect of any such noncompliance discovered by or made known to the Contractor. If the Contractor performs Work without fulfilling this notification obligation, the Contractor shall pay the resulting costs and damages that would have been avoided by such notification.

(2) The Contractor shall not be liable to the Owner for errors, omissions, or inconsistencies that may exist in the Contract Documents, or between the Contract Documents and conditions at the site, unless the Contractor knowingly fails to report a discovered error, omission, or inconsistency to the Engineer or Architect, in which case the Contractor shall pay the resulting costs and damages that would have been avoided by such notification.

C. If the Contractor considers the Engineer or Architect's response to a request for information to constitute a change to the Contract Documents involving additional costs and/or time, the Contractor shall follow the procedures prescribed herein.

D. If, with undue frequency, the Contractor requests information that is obtainable through reasonable examination and comparison of the Contract Documents, site conditions, and previous correspondence, interpretations, or clarifications, the Contractor shall be liable to the Owner for reasonable charges from the Engineer or Architect for the additional services required to review, research, and respond to such requests for information.

ARTICLE 6 SUBMITTALS

A. Where required by the Contract Documents, the Contractor shall submit shop drawings, product data, samples and other information (hereinafter referred to as Submittals) to the Engineer or Architect for the purpose of demonstrating the way by which the Contractor proposes to conform to the requirements of the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Engineer or Architect without action.

B. The Contractor shall be responsible to the Owner for the accuracy of its Submittals and the conformity of its submitted information to the requirements of the Contract Documents. Each Submittal shall bear the Contractor's approval, evidencing that the Contractor has reviewed and found the information to be in compliance with the requirements of the Contract Documents. Submittals which are not marked as reviewed and approved by the Contractor may be returned by the Engineer or Architect without action.

C. The Contractor shall prepare and deliver its submittals to the Engineer or Architect sufficiently in advance of construction requirements and in a sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. In coordinating the Submittal process with its construction schedule, the Contractor shall allow sufficient time to permit adequate review by the Architect or Engineer.

D. By approving a Submittal the Contractor represents not only that the element of Work presented in the Submittal complies with the requirements of the Contract Documents, but also that the Contractor has:

- (1)** found the layout and/or dimensions in the Submittal to be comparable with those in the Contract Documents and other relevant Submittals and has made field measurements as necessary to verify their accuracy, and
- (2)** determined that products, materials, systems, equipment and/or procedures presented in the Submittal are compatible with those presented, or being presented, in other relevant Submittals and with the Contractor's intended Construction Methods.

E. The Contractor shall not fabricate or perform any portion of the Work for which the Contract Documents require Submittals until the respective Submittals have been approved by the Architect or Engineer.

F. In the case of a resubmission, the Contractor shall direct specific attention to all revisions in a Submittal. The Architect or Engineers's approval of a resubmission shall not apply to any revisions that were not brought to the Architect or Engineer's attention.

G. If the Contract Documents specify that a Submittal is to be prepared and sealed by a registered engineer or architect or licensed engineer retained by the Contractor, all drawings, calculations, specifications, and certifications of the Submittal shall bear the Alabama seal of registration and signature of the registered/licensed design professional who prepared them or under whose supervision they were prepared. The Owner and the Engineer or Architect shall be entitled to rely upon the adequacy, accuracy and completeness of such a Submittal, provided that all performance and design criteria that such Submittal must satisfy are sufficiently specified in the Contract Documents. The Engineer or Architect will review, approve or take other appropriate action on such a Submittal only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria specified in the Contract Documents.

H. DEVIATIONS

(1) The Engineer or Architect is authorized by the Owner to approve “minor” deviations from the requirements of the Contract Documents. “Minor” deviations are defined as those which are in the interest of the Owner, do not materially alter the quality or performance of the finished Work, and do not affect the cost or time of performance of the Work. Deviations which are not “minor” may be authorized only by the Owner through the Change Order procedures.

(2) Any deviation from the requirements of the Contract Documents contained in a Submittal shall be clearly identified as a “Deviation from Contract Requirements” (or by similar language) within the Submittal and, in a letter transmitting the Submittal to the Architect or Engineer, the Contractor shall direct the Architect or Engineer’s attention to, and request specific approval of, the deviation. Otherwise, the Architect or Engineer’s approval of a Submittal does not constitute approval of deviations from the requirements of the Contract Documents contained in the Submittal.

(3) The Contractor shall bear all costs and expenses of any changes to the Work, changes to work performed by the Owner or separate contractors, or additional services by the Engineer or Architect required to accommodate an approved deviation unless the Contractor has specifically informed the Engineer or Architect in writing of the required changes and a Change Order has been issued authorizing the deviation and accounting for such resulting changes and costs.

I. ARCHITECT OR ENGINEER’S REVIEW and APPROVAL

(1) The Engineer or Architect will review the Contractor’s Submittals for conformance with requirements of, and the design concept expressed in, the Contract Documents and will approve or take other appropriate action upon them. This review is not intended to verify the accuracy and completeness of details such as dimensions and quantities nor to substantiate installation instructions or performance of equipment or systems, all of which remain the responsibility of the Contractor. However, the Engineer or Architect shall advise the Contractor of any errors or omissions which the Engineer or Architect may detect during this review. The Engineer or Architect’s approval of a specific item shall not indicate approval of an assembly of which the item is a component.

(2) The Engineer or Architect will review and respond to all Submittals with reasonable

promptness to avoid delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time to permit adequate review.

(3) No corrections or changes to Submittals indicated by the Engineer or Architect will be considered as authorizations to perform Extra Work. If the Contractor considers such correction or change of a Submittal to require Work which differs from the requirements of the Contract Documents, the Contractor shall promptly notify the Engineer or Architect in writing in accordance with Article, Claims for Extra Cost or Extra Work.

J. CONFORMANCE with SUBMITTALS

The Work shall be constructed in accordance with approved Submittals.

ARTICLE 7 DOCUMENTS and SAMPLES at the SITE

A. “AS ISSUED” SET

The Contractor shall maintain at the Project site, in good order, at least one copy of all Addenda, Change Orders, supplemental drawings, written directives and clarifications, and approved Submittals intact as issued, and an updated construction schedule.

B. “POSTED” SET

The Contractor shall maintain at the Project site, in good order, at least one set of the Drawings and Project Manual into which the Contractor has “posted”(incorporated) all Addenda, Change Orders, supplemental drawings, clarifications, and other information pertinent to the proper performance of the Work. The Contractor shall assure that all sets of the Drawings and Project Manuals being used by the Contractor, Subcontractors, and suppliers are “posted” with the current information to insure that updated Contract Documents are used for performance of the Work.

C. RECORD SET

One set of the Drawings and Project Manual described in Paragraph B shall be the Contractor’s record set in which the Contractor shall record all field changes, corrections, selections, final locations, and other information as will be duplicated on the “As-built” documents. The Contractor shall record such “as-built” information in its record set as it becomes available through progress of the Work. The Contractor’s performance of this requirement shall be subject to confirmation by the Engineer or Architect at any time as a prerequisite to approval of Progress Payments.

D. The documents and samples required by this Article to be maintained at the Project site shall be readily available to the Engineer or Architect, Owner, and their representatives.

ARTICLE 8 “AS-BUILT” DOCUMENTS

A. Unless otherwise provided in the Contract Documents, the Contractor shall an electronic set of “As-built” documents, as described herein, to the Engineer or Architect for submission to the Owner upon completion of the Work. Each set of “As-built” documents shall consist of a copy of

the Drawings and Project Manual, in like-new condition, into which the Contractor has neatly incorporated all Addenda, Change Orders, supplemental drawings, clarifications, field changes, corrections, selections, actual locations of underground utilities, and other information as required herein or specified elsewhere in the Contract Documents.

B. The Contractor shall use the following methods for incorporating information into the “As-built” documents:

1. Drawings

(a) To the greatest extent practicable, information shall be carefully drawn and lettered, in ink, on the Drawings in the form of sketches, details, plans, notes, and dimensions as required to provide a fully dimensioned record of the Work. When required for clarity, sketches, details, or partial plans shall be drawn on supplemental sheets and bound into the Drawings and referenced on the drawing being revised.

(b) Where a revised drawing has been furnished by the Architect or Engineer, the drawing of latest date shall be bound into the Drawings in the place of the superseded drawing.

(c) Where a supplemental drawing has been furnished by the Architect or Engineer, the supplemental drawing shall be bound into the Drawings in an appropriate location and referred to by note added to the drawing being supplemented.

(d) Where the Engineer or Architect has furnished details, partial plans, or lengthy notes of which it would be impractical for the Contractor to redraw or letter on a drawing, such information may be affixed to the appropriate drawing with transparent tape if space is available on the drawing.

(e) Any entry of information made in the Drawings that is the result of an Addendum or Change Order, shall identify the Addendum or Change Order from which it originated.

2. Project Manual

(a) A copy of all Addenda and Change Orders, excluding drawings thereof, shall be bound in the front of the Project Manual.

(b) Where a document, form, or entire specification section is revised, the latest issue shall be bound into the Project Manual in the place of the superseded issue.

(c) Where information within a specification section is revised, the deleted or revised information shall be drawn through in ink and an adjacent note added identifying the Addendum or Change Order containing the revised information.

C. Within ten days after the Date of Substantial Completion of the Work, or the last completed portion of the Work, the Contractor shall submit the “As-built” documents to the Engineer or Architect for approval. If the Engineer or Architect requires that any corrections be made, the documents will be returned in a reasonable time for correction and resubmission.

**ARTICLE 9
PROGRESS SCHEDULE**

A. The Contractor shall within fifteen days after the date of commencement stated in the Notice to Proceed, or such other time as may be provided in the Contract Documents, prepare and submit to the Engineer or Architect for review and approval a practicable construction schedule informing the Engineer or Architect and Owner of the order in which the Contractor plans to carry on the Work within the Contract Time. The Engineer or Architect’s review and approval of

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the Contractor's construction schedule shall be only for compliance with the specified format, Contract Time, and suitability for monitoring progress of the Work and shall not be construed as a representation that the Engineer or Architect has analyzed the schedule to form opinions of sequences or durations of time represented in the schedule.

B. At the end of each month the Contractor shall enter the actual percentage of completion on the construction schedule submit two copies to the Engineer or Architect, and attach one copy to each copy of the monthly Application for Payment. The construction schedule shall be revised to reflect any agreed extensions of the Contract Time or as required by conditions of the Work.

C. The Contractor's construction schedule shall be used by the Contractor, Engineer or Architect, and Owner to determine the adequacy of the Contractor's progress. The Contractor shall be responsible for maintaining progress in accordance with the currently approved construction schedule and shall increase the number of shifts, and/or overtime operations, days of work, and/or the amount of construction plant and equipment as may be necessary to do so. If the Contractor's progress falls materially behind the currently approved construction schedule and, in the opinion of the Engineer or Architect or Owner, the Contractor is not taking sufficient steps to regain schedule, the Engineer or Architect may, with the Owner's concurrence, issue a Contractor a Notice to Cure. In such a Notice to Cure the Engineer or Architect may require the Contractor to submit such supplementary or revised construction schedules as may be deemed necessary to demonstrate the manner in which schedule will be regained.

**ARTICLE 10
EQUIPMENT, MATERIALS, and SUBSTITUTIONS**

A. Every part of the Work shall be executed in a workmanlike manner in accordance with the Contract Documents and approved Submittals. All materials used in the Work shall be furnished in sufficient quantities to facilitate the proper and expeditious execution of the Work and shall be new except such materials as may be expressly provided or allowed in the Contract Documents to be otherwise.

B. Whenever a product, material, system, item of equipment, or service is identified in the Contract Documents by reference to a trade name, manufacturer's name, model number, etc.(hereinafter referred to as "source"), and only one or two sources are listed, or three or more sources are listed and followed by "or approved equal" or similar wording, it is intended to establish a required standard of performance, design, and quality, and the Contractor may submit, for the Engineer or Architect's approval, products, materials, systems, equipment, or services of other sources which the Contractor can prove to the Architect's satisfaction are equal to, or exceed, the standard of performance, design and quality specified, unless the provisions of Paragraph D below apply. Such proposed substitutions are not to be purchased or installed without the Engineer or Architect's written approval of the substitution.

C. If the Contract Documents identify three or more sources for a product, material, system, item of equipment or service to be used and the list of sources is not followed by "or approved equal" or similar wording, the Contractor may make substitution only after evaluation by the Engineer or Architect and execution of an appropriate Contract Change Order.

D. If the Contract Documents identify only one source and expressly provide that it is an

approved sole source for the product, material, system, item of equipment, or service, the Contractor must furnish the identified sole source.

ARTICLE 11

SAFETY and PROTECTION of PERSONS and PROPERTY

A. The Contractor shall be solely and completely responsible for conditions at the Project site, including safety of all persons (including employees) and property. The Contractor shall create, maintain, and supervise conditions and programs to facilitate and promote safe execution of the Work, and shall supervise the Work with the attention and skill required to assure its safe performance. Safety provisions shall conform to OSHA requirements and all other federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. Nothing contained in this Contract shall be construed to mean that the Owner has employed the Engineer or Architect nor has the Engineer or Architect employed its consultants to administer, supervise, inspect, or take action regarding safety programs or conditions at the Project site.

B. The Contractor shall employ Construction Methods, safety precautions, and protective measures that will reasonably prevent damage, injury or loss to:

(1) workers and other persons on the Project site and in adjacent and other areas that may be affected by the Contractor's operations;

(2) the Work and materials and equipment to be incorporated into the Work and stored by the Contractor on or off the Project site; and

(3) other property on, or adjacent to, the Project site, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and other improvements not designated in the Contract Documents to be removed, relocated, or replaced.

C. The Contractor shall be responsible for the prompt remedy of damage and loss to property, including the filing of appropriate insurance claims, caused in whole or in part by the fault or negligence of the Contractor, a Subcontractor, or anyone for whose acts they may be liable.

D. The Contractor shall comply with and give notices required by applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety and protection of persons or property, including without limitation notices to adjoining property owners of excavation or other construction activities that potentially could cause damage or injury to adjoining property or persons thereon.

E. The Contractor shall erect and maintain barriers, danger signs, and any other reasonable safeguards and warnings against hazards as may be required for safety and protection during performance of the Contract and shall notify owners and users of adjacent sites and utilities of conditions that may exist or arise which may jeopardize their safety.

F. If use or storage of explosives or other hazardous materials or equipment or unusual Construction Methods are necessary for execution of the Work, the Contractor shall exercise commensurate care and employ supervisors and workers properly qualified to perform such activity.

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G. The Contractor shall furnish a qualified safety representative at the Project site whose duties shall include the prevention of accidents. The safety representative shall be the Contractor's superintendent, unless the Contractor assigns this duty to another responsible member of its on-site staff and notifies the Owner and Engineer or Architect in writing of such assignment.

H. The Contractor shall not permit a load to be applied, or forces introduced, to any part of the construction or site that may cause damage to the construction or site or endanger safety of the construction, site, or persons on or near the site.

I. The Contractor shall have the right to act as it deems appropriate in emergency situations jeopardizing life or property. The Contractor shall be entitled to equitable adjustment of the Contract Sum or Contract Time for its efforts expended for the sole benefit of the Owner in an Emergency.

J. The duty of the Engineer or Architect and the Engineer or Architect's consultants to visit the Project site to conduct periodic inspections of the Work or for other purposes shall not give rise to a duty to review or approve the adequacy of the Contractor's safety program, safety supervisor, or any safety measure which Contractor takes or fails to take in, on, or near the Project site.

**ARTICLE 12
HAZARDOUS MATERIALS**

A. A Hazardous Material is any substance or material identified as hazardous under any federal, state, or local law or regulation, or any other substance or material which may be considered hazardous or otherwise subject to statutory or regulatory requirements governing its handling, disposal, and/or clean-up. Existing Hazardous Materials are Hazardous Materials discovered at the Project site and not introduced to the Project site by the Contractor, a Subcontractor, or anyone for whose acts they may be liable.

B. If, during the performance of the Work, the Contractor encounters a suspected Existing Hazardous Material, the Contractor shall immediately stop work in the affected area, take measures appropriate to the condition to keep people away from the suspected Existing Hazardous Material, and immediately notify the Engineer or Architect and Owner of the condition in writing.

C. The Owner shall obtain the services of an independent laboratory or professional consultant, appropriately licensed and qualified, to determine whether the suspected material is a Hazardous Material requiring abatement and, if so, to certify after its abatement that it has been rendered harmless. Any abatement of Existing Hazardous Materials will be the responsibility of the Owner. The Owner will advise the Contractor in writing of the persons or entities who will determine the nature of the suspected material and those who will, if necessary, perform the abatement. The Owner will not employ persons or entities to perform these services to whom the Contractor or Engineer or Architect has reasonable objection.

D. After certification by the Owner's independent laboratory or professional consultant that the material is harmless or has been rendered harmless, work in the affected area shall resume upon written agreement between the Owner and Contractor. If the material is found to be an

Existing Hazardous Material and the Contractor incurs additional cost or delay due to the presence and abatement of the material, the Contract Sum and/or Contract Time shall be appropriately adjusted by a Contract Change Order.

E. The Owner shall not be responsible for Hazardous Materials introduced to the Project site by the Contractor, a Subcontractor, or anyone for whose acts they may be liable unless such Hazardous Materials were required by the Contract Documents.

ARTICLE 13 INSPECTION of the WORK

A. GENERAL

(1) The Contractor is solely responsible for the Work's compliance with the Contract Documents; therefore, the Contractor shall be responsible to inspect in-progress and completed Work, and shall verify its compliance with the Contract Documents and that any element or portion of the Work upon which subsequent Work is to be applied or performed is in proper condition to receive the subsequent Work. Neither the presence nor absence of inspections by the Engineer or Architect, Owner, any public authority having jurisdiction, or their representatives shall relieve the Contractor of responsibility to inspect the Work, for responsibility for Construction Methods and safety precautions and programs in connection with the Work, or from any other requirement of the Contract Documents.

(2) The Engineer or Architect, Owner, Director, any public authority having jurisdiction, and their representatives shall have access at all times to the Work for inspection whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and inspection. All materials, workmanship, processes of manufacture, and methods of construction, if not otherwise stipulated in the Contract Documents, shall be subject to inspection, examination, and test at any and all places where such manufacture and/or construction are being carried on. Such inspections will not unreasonably interfere with the Contractor's operations.

(3) The Engineer or Architect will inspect the Work as a representative of the Owner.

(4) The Contractor may be charged by the Owner for any extra cost of inspection incurred by the Owner or Engineer or Architect on account of material and workmanship not being ready at the time of inspection set by the Contractor.

B. TYPES of INSPECTIONS

(1) SCHEDULED INSPECTIONS and CONFERENCES. Scheduled Inspections and Conferences are conducted by the Engineer or Architect, scheduled by the Engineer or Architect in coordination with the Contractor and are attended by the Contractor and applicable Subcontractors, suppliers and manufacturers. Scheduled Inspections and Conferences of this Contract include:

(a) Pre-construction Conference.

(b) Pre-roofing Conference (not applicable if the Contract involves no roofing work)

(c) Above Ceiling Inspection(s): An above ceiling inspection of all spaces in the building is required before the ceiling material is installed. Above ceiling inspections are to be conducted at a time when all above ceiling systems are complete and tested to the greatest extent reasonable pending installation of the ceiling material. System identifications and

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markings are to be complete. All fire-rated construction including fire-stopping of penetrations and specified identification above the ceiling shall be complete. Ceiling framing and suspension systems shall be complete with lights, grilles and diffusers, access panels, fire protection drops for sprinkler heads, etc., installed in their final locations to the greatest extent reasonable. Above ceiling framing to support ceiling mounted equipment shall be complete. The above ceiling construction shall be complete to the extent that after the inspection the ceiling material can be installed without disturbance.

(d) Final Inspection(s): A Final Inspection shall establish that the Work, or a designated portion of the Work, is Substantially Complete and is accepted by the Engineer or Architect, and Owner, as being ready for the Owner's occupancy or use. At the conclusion of this inspection, items requiring correction or completion ("punch list" items) shall be minimal and require only a short period of time for accomplishment to establish Final Acceptance of the Work. If the Work, or designated portion of the Work, includes the installation, or modification, of a fire alarm system or other life safety systems essential to occupancy, such systems shall have been tested and appropriately certified before the Final Inspection.

(e) Year-end Inspection(s): An inspection of the Work, or each separately completed portion thereof, is required near the end of the Contractor's one year warranty period(s). The subsequent delivery of the Engineer or Architect's report of this inspection will serve as confirmation that the Contractor was notified of Defective Work found within the warranty period.

(2) PERIODIC INSPECTIONS. Periodic Inspections are conducted throughout the course of the Work by the Engineer or Architect, the Engineer or Architect's consultants, and their representatives, jointly or independently, with or without advance notice to the Contractor.

(3) SPECIFIED INSPECTIONS and TESTS. Specified Inspections and Tests include inspections, tests, demonstrations, and approvals that are either specified in the Contract Documents or required by laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction, to be performed by the Contractor, one of its Subcontractors, or an independent testing laboratory or firm (whether paid for by the Contractor or Owner).

C. INSPECTIONS by the ENGINEER OR ARCHITECT

(1) The Engineer or Architect is not authorized to revoke, alter, relax, or waive any requirements of the Contract Documents (other than "minor" deviations and "minor" changes) to finally approve or accept any portion of the Work or to issue instructions contrary to the Contract Documents without concurrence of the Owner.

(2) The Engineer or Architect will visit the site at intervals appropriate to the stage of the Contractor's operations and as otherwise necessary to:

(a) become generally familiar with the in-progress and completed Work and the quality of the Work,

(b) determine whether the Work is progressing in general accordance with the Contractor's schedule and is likely to be completed within the Contract Time,

(c) visually compare readily accessible elements of the Work to the requirements of the Contract Documents to determine, in general, if the Contractor's performance of the Work indicates that the Work will conform to the requirements of the Contract Documents when completed,

(d) endeavor to guard the Owner against Defective Work,

(e) review and address with the Contractor any problems in implementing the

requirements of the Contract Documents that the Contractor may have encountered, and

(f) keep the Owner fully informed about the Project.

(3) The Engineer or Architect shall have the authority to reject Defective Work or require its correction, but shall not be required to make exhaustive investigations or examinations of the in-progress or completed portions of the Work to expose the presence of Defective Work. However, it shall be an obligation of the Engineer or Architect to report in writing, to the Owner, and Contractor any Defective Work recognized by the Engineer or Architect.

(4) The Engineer or Architect shall have the authority to require the Contractor to stop work only when, in the Engineer or Architect's reasonable opinion, such stoppage is necessary to avoid Defective Work. The Engineer or Architect shall not be liable to the Contractor or Owner for the consequences of any decisions made by the Engineer or Architect in good faith either to exercise or not to exercise this authority.

(5) "Inspections by the Engineer or Architect" includes appropriate inspections by the Engineer or Architect's consultants as dictated by their respective disciplines of design and the stage of the Contractor's operations.

D. UNCOVERING WORK

(1) If the Contractor covers a portion of the Work before it is examined by the Engineer or Architect and this is contrary to the Engineer or Architect's request or specific requirements in the Contract Documents, then, upon written request of the Engineer or Architect, the Work must be uncovered for the Engineer or Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

(2) Without a prior request or specific requirement that Work be examined by the Engineer or Architect before it is covered, the Engineer or Architect may request that Work be uncovered for examination and the Contractor shall uncover it. If the Work is in accordance with the Contract Documents, the Contract Sum shall be equitably adjusted to compensate the Contractor for the costs of uncovering and replacement. If the Work is not in accordance with the Contract Documents, uncovering, correction, and replacement shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

E. SPECIFIED INSPECTIONS and TESTS

(1) The Contractor shall schedule and coordinate Specified Inspections and Tests to be made at appropriate times so as not to delay the progress of the Work or the work of the Owner or separate contractors. If the Contract Documents require that a Specified Inspection or Test be witnessed or attended by the Engineer or Architect or Engineer or Architect's consultant, the Contractor shall give the Engineer or Architect timely notice of the time and place of the Specified Inspection or Test. If a Specified Inspection or Test reveals that Work is not in compliance with requirements of the Contract Documents, the Contractor shall bear the costs of correction, repeating the Specified Inspection or Test, and any related costs incurred by the Owner, including reasonable charges, if any, by the Engineer or Architect for additional services. Through appropriate Contract Change Order the Owner shall bear costs of tests,

inspections or approvals which become Contract requirements subsequent to the receipt of bids.

(2) If the Engineer or Architect, Owner, or public authority having jurisdiction determines that inspections, tests, demonstrations, or approvals in addition to Specified Inspections and Tests are required, the Contractor shall, upon written instruction from the Engineer or Architect, arrange for their performance by an entity acceptable to the Owner, giving timely notice to the engineer or architect of the time and place of their performance. Related costs shall be borne by the Owner unless the procedures reveal that Work is not in compliance with requirements of the Contract Documents, in which case the Contractor shall bear the costs of correction, repeating the procedures, and any related costs incurred by the Owner, including reasonable charges, if any, by the Engineer or Architect for additional services.

(3) Unless otherwise required by the Contract Documents, required certificates of Specified Inspections and Tests shall be secured by the Contractor and promptly delivered to the Engineer or Architect.

(4) Failure of any materials to pass Specified Inspections and Tests will be sufficient cause for refusal to consider any further samples of the same brand or make of that material for use in the Work.

ARTICLE 14 CORRECTION of DEFECTIVE WORK

A. The Contractor shall, at the Contractor's expense, promptly correct Defective Work rejected by the Engineer or Architect or which otherwise becomes known to the Contractor, removing the rejected or nonconforming materials and construction from the project site.

B. Correction of Defective Work shall be performed in such a timely manner as will avoid delay of completion, use, or occupancy of the Work and the work of the Owner and separate contractors.

C. The Contractor shall bear all expenses related to the correction of Defective Work, including but not limited to: **(1)** additional testing and inspections, including repeating Specified Inspections and Tests, **(2)** reasonable services and expenses of the Engineer or Architect, and **(3)** the expense of making good all work of the Contractor, Owner, or separate contractors destroyed or damaged by the correction of Defective Work.

ARTICLE 15 DEDUCTIONS for UNCORRECTED WORK

If the Owner deems it advisable and in the Owner's interest to accept Defective Work, the Owner may allow part or all of such Work to remain in place, provided an equitable deduction from the Contract Sum, acceptable to the Owner, is offered by the Contractor.

**ARTICLE 16
CHANGES in the WORK**

A. GENERAL

(1) The Owner may at any time direct the Contractor to make changes in the Work which are within the general scope of the Contract, including changes in the Drawings, Specifications, or other portions of the Contract Documents to add, delete, or otherwise revise portions of the Work. The Engineer or Architect is authorized by the Owner to direct “minor” changes in the Work by written order to the Contractor. “Minor” changes in the Work are defined as those which are in the interest of the Owner, do not materially alter the quality or performance of the finished Work, and do not affect the cost or time of performance of the Work. Changes in the Work which are not “minor” may be authorized only by the Owner.

(2) If the Owner directs a change in the Work, the change shall be incorporated into the Contract by a Contract Change Order prepared by the Engineer or Architect and signed by the Contractor, Owner, and other signatories to the Construction Contract, stating their agreement upon the change or changes in the Work and the adjustments, if any, in the Contract Sum and the Contract Time.

(3) Subject to compliance with Alabama’s Public Works Law, the Owner may, upon agreement by the Contractor, incorporate previously unawarded bid alternates into the Contract.

(4) In the event of a claim or dispute as to the appropriate adjustment to the Contract Sum or Contract Time due to a directive to make changes in the Work, the Work shall proceed as provided in this article subject to subsequent agreement of the parties or final resolution of the dispute.

(5) Consent of surety will be obtained for all Contract Change Orders involving an increase in the Contract Sum.

(6) Changes in the Work shall be performed under applicable provisions of the Contract Documents and the Contractor shall proceed promptly to perform changes in the Work, unless otherwise directed by the Owner through the Engineer or Architect.

B. DETERMINATION of ADJUSTMENT of the CONTRACT SUM

The adjustment of the Contract Sum resulting from a change in the Work shall be determined by one of the following methods, or a combination thereof, as selected by the Owner:

(1) **Lump Sum.** By mutual agreement to a lump sum based on or negotiated from an itemized cost proposal from the Contractor. Additions to the Contract Sum shall include the Contractor’s direct costs plus a maximum 15% markup for overhead and profit. Where subcontract work is involved the total mark-up for the Contractor and a Subcontractor shall not exceed 25%. No allowance for overhead and profit shall be figured on a change which involves a net credit to the Owner. For the purposes of this method of determining an adjustment of the Contract Sum, “overhead” shall cover the Contractor’s indirect costs of the change, such as the cost of bonds,

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superintendent and other job office personnel, watchman, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.

(2) Unit Price. By application of Unit Prices included in the Contract or subsequently agreed to by the parties. However, if the character or quantity originally contemplated is materially changed so that application of such unit price to quantities of Work proposed will cause substantial inequity to either party, the applicable unit price shall be equitably adjusted.

(3) Force Account. By directing the Contractor to proceed with the change in the Work on a "force account" basis under which the Contractor shall be reimbursed for reasonable expenditures incurred by the Contractor and its Subcontractors in performing added Work and the Owner shall receive reasonable credit for any deleted Work. The Contractor shall keep and present, in such form as the Owner may prescribe, an itemized accounting of the cost of the change together with sufficient supporting data. Unless otherwise stated in the directive, the adjustment of the Contract Sum shall be limited to the following:

- (a)** costs of labor and supervision, including employee benefits, social security, retirement, unemployment and workers' compensation insurance required by law, agreement, or under Contractor's or Subcontractor's standard personnel policy;
- (b)** cost of materials, supplies and equipment, including cost of delivery, whether incorporated or consumed;
- (c)** rental cost of machinery and equipment, not to exceed prevailing local rates if contractor owned;
- (d)** costs of premiums for insurance required by the Contract Documents, permit fees, and sales, use or similar taxes related to the change in the Work;
- (e)** reasonable credits to the Owner for the value of deleted Work, without Contractor or Subcontractor mark-ups; and
- (f)** for additions to the Contract Sum, mark-up of the Contractor's direct costs for overhead and profit not exceeding 15% on Contractor's work nor exceeding 25% for Contractor and Subcontractor on a Subcontractor's work. No allowance for overhead and profit shall be figured on a change which involves a net credit to the Owner. For the purposes of this method of determining an adjustment of the Contract Sum, "overhead" shall cover the Contractor's indirect costs of the change, such as the cost of insurance other than mentioned above, bonds, superintendent and other job office personnel, watchman, use and rental of small tools, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.

C. ADJUSTMENT of the CONTRACT TIME due to CHANGES

(1) Unless otherwise provided in the Contract Documents, the Contract Time shall be equitably adjusted for the performance of a change provided that the Contractor notifies the Engineer or Architect in writing that the change will increase the time required to complete the Work. Such notice shall be provided no later than:

- (a)** with the Contractor's cost proposal stating the number of days of extension requested, or
- (b)** within ten days after the Contractor receives a directive to proceed with a change in advance of submitting a cost proposal, in which case the notice should provide an estimated number of days of extension to be requested, which may be subject to adjustment in the cost proposal.

(2) The Contract Time shall be extended only to the extent that the change affects the time required to complete the entire Work of the Contract, taking into account the concurrent performance of the changed and unchanged Work.

D. CHANGE ORDER PROCEDURES

(1) If the Owner proposes to make a change in the Work, the Engineer or Architect will request that the Contractor provide a cost proposal for making the change to the Work. The request shall be in writing and shall adequately describe the proposed change using drawings, specifications, narrative, or a combination thereof. Within 21 days after receiving such a request, or such other time as may be stated in the request, the Contractor shall prepare and submit to the Engineer or Architect a written proposal, properly itemized and supported by sufficient substantiating data to facilitate evaluation. The stated time within which the Contractor must submit a proposal may be extended if, within that time, the Contractor makes a written request with reasonable justification thereof.

(2) The Contractor may voluntarily offer a change proposal which, in the Contractor's opinion, will reduce the cost of construction, maintenance, or operation or will improve the cost-effective performance of an element of the Project, in which case the Owner, through the Engineer or Architect, will accept, reject, or respond otherwise within 21 days after receipt of the proposal, or such other reasonable time as the Contractor may state in the proposal.

(3) If the Contractor's proposal is acceptable to the Owner, or is negotiated to the mutual agreement of the Contractor and Owner, the Engineer or Architect will prepare an appropriate Contract Change Order for execution. Upon receipt of the fully executed Contract Change Order, the Contractor shall proceed with the change.

(4) In advance of delivery of a fully executed Contract Change Order, the Engineer or Architect may furnish to the Contractor a written authorization to proceed with an agreed change. However, such an authorization shall be effective only if it:

- (a)** identifies the Contractor's accepted or negotiated proposal for the change,
- (b)** states the agreed adjustments, if any, in Contract Sum and Contract Time,
- (c)** states that funds are available to pay for the change, and
- (d)** is signed by the Owner.

(5) If the Contractor and Owner cannot agree on the amount of the adjustment in the Contract Sum for a change, the Owner, through the Engineer or Architect, may order the Contractor to proceed with the change on a Force Account basis, but the net cost to the Owner shall not exceed the amount quoted in the Contractor's proposal. Such order shall state that funds are available to pay for the change.

(6) If the Contractor does not promptly respond to a request for a proposal, or the Owner determines that the change is essential to the final product of the Work and that the change must be effected immediately to avoid delay of the Project, the Owner may:

- (a)** determine with the Contractor a sufficient maximum amount to be authorized for the change and
- (b)** direct the Contractor to proceed with the change on a Force Account basis pending

delivery of the Contractor's proposal, stating the maximum increase in the Contract Sum that is authorized for the change.

(7) Pending agreement of the parties or final resolution of any dispute of the total amount due the Contractor for a change in the Work, amounts not in dispute for such changes in the Work may be included in Applications for Payment accompanied by an interim Change Order indicating the parties' agreement with part of all of such costs or time extension. Once a dispute is resolved, it shall be implemented by preparation and execution of an appropriate Change Order.

ARTICLE 17

CLAIMS for EXTRA COST or EXTRA WORK

A. If the Contractor considers any instructions by the Engineer or Architect, Owner, or public authority having jurisdiction to be contrary to the requirements of the Contract Documents and will involve extra work and/or cost under the Contract, the Contractor shall give the Engineer or Architect written notice thereof within ten days after receipt of such instructions, and in any event before proceeding to execute such work. As used in this Article, "instructions" shall include written or oral clarifications, directions, instructions, interpretations, or determinations.

B. The Contractor's notification pursuant to Paragraph 17A shall state: (1) the date, circumstances, and source of the instructions, (2) that the Contractor considers the instructions to constitute a change to the Contract Documents and why, and (3) an estimate of extra cost and time that may be involved to the extent an estimate may be reasonably made at that time.

C. Except for claims relating to an emergency endangering life or property, no claim for extra cost or extra work shall be considered in the absence of prior notice required under Paragraph 17.A.

D. Within ten days of receipt of a notice pursuant to Paragraph 17.A, the Engineer or Architect will respond in writing to the Contractor, stating one of the following:

(1) The cited instruction is rescinded.

(2) The cited instruction is a change in the Work and in which manner the Contractor is to proceed with procedures for Changes in the Work.

(3) The cited instruction is reconfirmed, is not considered by the Engineer or Architect to be a change in the Contract Documents, and the Contractor is to proceed with Work as instructed.

E. If the Engineer or Architect's response to the Contractor is as in Paragraph 17.D(3), the Contractor shall proceed with the Work as instructed. If the Contractor continues to consider the instructions to constitute a change in the Contract Documents, the Contractor shall, within ten days after receiving the Engineer or Architect's response, notify the Engineer or Architect in writing that the Contractor intends to submit a claim pursuant to, Resolution of Claims and Disputes

**ARTICLE 18
DIFFERING SITE CONDITIONS**

A. DEFINITION

“Differing Site Conditions” are:

(1) subsurface or otherwise concealed physical conditions at the Project site which differ materially from those indicated in the Contract Documents, or

(2) unknown physical conditions at the Project site which are of an unusual nature, differing materially from conditions ordinarily encountered and generally recognized as inherent in construction activities of the character required by the Contract Documents.

B. PROCEDURES

If Differing Site Conditions are encountered, then the party discovering the condition shall promptly notify the other party before the condition is disturbed and in no event later than ten days after discovering the condition. Upon such notice and verification that a Differing Site Condition exists, the Engineer or Architect will, with reasonable promptness and with the Owner's concurrence, make changes in the Drawings and/or Specifications as are deemed necessary to conform to the Differing Site Condition. Any increase or decrease in the Contract Sum or Contract Time that is warranted by the changes will be made as provided under Changes in the Work. If the Engineer or Architect determines a Differing Site Condition has not been encountered, the Engineer or Architect shall notify the Owner and Contractor in writing, stating the reason for that determination.

**ARTICLE 19
CLAIMS for DAMAGES**

If either party to the Contract 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, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time after the discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

**ARTICLE 20
DELAYS**

A. A delay beyond the Contractor's control at any time in the commencement or progress of Work by an act or omission of the Owner, Engineer or Architect, or any separate contractor or by labor disputes, unusual delay in deliveries, unavoidable casualties, fires, abnormal floods, tornadoes, or other cataclysmic events of nature, may entitle the Contractor to an extension of the Contract Time provided, however, that the Contractor shall, within ten days after the delay first occurs, give written notice to the Engineer or Architect of the cause of the delay and its probable effect on progress of the entire Work.

B. Adverse weather conditions that are more severe than anticipated for the locality of the Work during any given month may entitle the Contractor to an extension of Contract Time provided, however;

(1) the weather conditions had an adverse effect on construction scheduled to be performed during the period in which the adverse weather occurred, which in reasonable sequence would have an effect on completion of the entire Work,

(2) the Contractor shall, within twenty-one days after the end of the month in which the delay occurs, give the Engineer or Architect written notice of the delay that occurred during that month and its probable effect on progress of the Work, and

(3) within a reasonable time after giving notice of the delay, the Contractor provides the Engineer or Architect with sufficient data to document that the weather conditions experienced were unusually severe for the locality of the Work during the month in question. Unless otherwise provided in the Contract Documents, data documenting unusually severe weather conditions shall compare actual weather conditions to the average weather conditions for the month in question during the previous five years as recorded by the National Oceanic and Atmospheric Administration (NOAA) or similar record-keeping entities.

C. Adjustments, if any, of the Contract Time pursuant to this Article shall be incorporated into the Contract by a Contract Change Order prepared by the Engineer or Architect and signed by the Contractor, Owner, and other signatories to the Construction Contract or, at closeout of the Contract, by mutual written agreement between the Contractor and Owner. The adjustment of the Contract Time shall not exceed the extent to which the delay extends the time required to complete the entire Work of the Contract.

D. The Contractor shall not be entitled to any adjustment of the Contract Sum for damage due to delays claimed pursuant to this Article.

ARTICLE 21 OWNER'S RIGHT to CORRECT DEFECTIVE WORK

If the Contractor fails or refuses to correct Defective Work in a timely manner that will avoid delay of completion, use, or occupancy of the Work or work by the Owner or separate contractors, the Engineer or Architect may give the Contractor written Notice to Cure the Defective Work within a reasonable, stated time. If within ten days after receipt of the Notice to Cure the Contractor has not proceeded and satisfactorily continued to cure the Defective Work or provided the Engineer or Architect with written verification that satisfactory positive action is in process to cure the Defective Work, the Owner may, without prejudice to any other remedy available to the Owner, correct the Defective Work and deduct the actual cost of the correction from payment then or thereafter due to the Contractor.

ARTICLE 22 PROGRESS PAYMENTS

A. FREQUENCY of PROGRESS PAYMENTS

Unless otherwise provided in the Contract Documents, the Owner will make payments to the Contractor as the Work progresses based on monthly estimates prepared and certified by the Contractor, approved and certified by the Engineer or Architect, and approved by the Owner and other authorities whose approval is required.

B. SCHEDULE of VALUES

Within ten days after receiving the Notice to Proceed the Contractor shall submit to the Engineer or Architect a Schedule of Values, which is a breakdown of the Contract Sum showing the value of the various parts of the Work for billing purposes. The Schedule of Values shall be prepared on 8 1/2" x 11" paper in a format that is acceptable to the Engineer or Architect and Owner and shall divide the Contract Sum into as many parts ("line items") as the Engineer or Architect and Owner determine necessary to permit evaluation and to show amounts attributable to Subcontractors. The Contractor's overhead and profit are to be proportionately distributed throughout the line items of the Schedule of Values. Upon approval, the Schedule of Values shall be used as a basis for monthly Applications for Payment, unless it is later found to be in error. Approved change order amounts shall be added to or incorporated into the Schedule of Values as mutually agreed by the Contractor and Architect.

C. APPLICATIONS for PAYMENTS

(1) Based on the approved Schedule of Values, each monthly Application for Payment shall show the Contractor's estimate of the value of Work performed in each line item as of the end of the billing period. The Contractor's cost of materials and equipment not yet incorporated into the Work, but delivered and suitably stored on the site, may be considered in monthly Applications for Payment.

(2) The Contractor's estimate of the value of Work performed and stored materials must represent such reasonableness as to warrant certification by the Engineer or Architect to the Owner in accordance with Article 23. Each monthly Application for Payment shall be supported by such data as will substantiate the Contractor's right to payment, including without limitation copies of requisitions from subcontractors and material suppliers.

(3) If no other date is stated in the Contract Documents or agreed upon by the parties, each monthly Application for Payment shall be submitted to the Engineer or Architect on or about the first day of each month and payment shall be issued to the Contractor within thirty days after an Application for Payment is Certified pursuant to Article 23 and delivered to the Owner.

D. MATERIALS STORED OFF SITE

Unless otherwise provided in the Contract Documents, the Contractor's cost of materials and equipment to be incorporated into the Work, which are stored off the site, may also be considered in monthly Applications for Payment under the following conditions:

(1) the contractor has received written approval from the Engineer or Architect and Owner to store the materials or equipment off site in advance of delivering the materials to the off site location;

(2) a Certificate of Insurance is furnished to the Engineer or Architect evidencing that a special insurance policy, or rider to an existing policy, has been obtained by the Contractor providing all-risk property insurance coverage, specifically naming the materials or equipment stored, and naming the Owner as an additionally insured party;

(3) the Engineer or Architect is provided with a detailed inventory of the stored materials

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or equipment and the materials or equipment are clearly marked in correlation to the inventory to facilitate inspection and verification of the presence of the materials or equipment by the Engineer or Architect or Owner;

(4) the materials or equipment are properly and safely stored in a bonded warehouse, or a facility otherwise approved in advance by the Engineer or Architect and Owner; and

(5) 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.

E. RETAINAGE

(1) "Retainage" is defined as the money earned and, therefore, belonging to the Contractor (subject to final settlement of the Contract) which has been retained by the Owner conditioned on final completion and acceptance of all Work required by the Contract Documents. Retainage shall not be relied upon by Contractor (or Surety) to cover or off-set unearned monies attributable to uncompleted or uncorrected Work.

(2) In making progress payments the Owner shall retain five percent of the estimated value of Work performed and the value of the materials stored for the Work; but after retainage has been held upon fifty percent of the Contract Sum, no additional retainage will be withheld.

F. CONTRACTOR'S CERTIFICATION

(1) Each Application for Payment shall bear the Contractor's notarized certification that, to the best of the Contractor's knowledge, information, and belief, the Work covered by the Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payments were issued and payments received from the Owner and that the current payment shown in the Application for Payment has not yet been received.

(2) By making this certification the Contractor represents to the Engineer or Architect and Owner that, upon receipt of previous progress payments from the Owner, the Contractor has promptly paid each Subcontractor, in accordance with the terms of its agreement with the Subcontractor, the amount due the Subcontractor from the amount included in the progress payment on account of the Subcontractor's Work and stored materials. The Engineer or Architect and Owner may advise Subcontractors and suppliers regarding percentages of completion or amounts requested and/or approved in an Application for Payment on account of the Subcontractor's Work and stored materials.

G. PAYMENT ESTABLISHES OWNERSHIP

All material and Work covered by progress payments shall become the sole property of the Owner, but the Contractor shall not be relieved from the sole responsibility for the care and protection of material and Work upon which payments have been made and for the restoration of any damaged material and Work.

ARTICLE 23

CERTIFICATION and APPROVALS for PAYMENT

A. The Engineer or Architect's review, approval, and certification of Applications for Payment shall be based on the Engineer or Architect's general knowledge of the Work obtained through site visits and the information provided by the Contractor with the Application. The Engineer or Architect shall not be required to perform exhaustive examinations, evaluations, or estimates of the cost of completed or uncompleted Work or stored materials to verify the accuracy of amounts requested by the Contractor, but the Engineer or Architect shall have the authority to adjust the Contractor's estimate when, in the Engineer or Architect's reasonable opinion, such estimates are overstated or understated.

B. Within seven days after receiving the Contractor's monthly Application for Payment, or such other time as may be stated in the Contract Documents, the Engineer or Architect will take one of the following actions:

(1) The Engineer or Architect will approve and certify the Application as submitted and forward it as a Certification for Payment for approval by the Owner (and other approving authorities, if any) and payment.

(2) If the Engineer or Architect takes exception to any amounts claimed by the Contractor and the Contractor and Engineer or Architect cannot agree on revised amounts, the Engineer or Architect will promptly issue a Certificate for Payment for the amount for which the Engineer or Architect is able to certify to the Owner, transmitting a copy of same to the Contractor.

(3) To the extent the Engineer or Architect determines may be necessary to protect the Owner from loss on account of any of the causes stated in Article 24, the Engineer or Architect may subtract from the Contractor's estimates and will issue a Certificate for Payment to the Owner, with a copy to the Contractor, for such amount as the Engineer or Architect determines is properly due and notify the Contractor and Owner in writing of the Engineer or Architect's reasons for withholding payment in whole or in part.

C. Neither the Engineer or Architect's issuance of a Certificate for Payment nor the Owner's resulting progress payment shall be a representation to the Contractor that the Work in progress or completed at that time is accepted or deemed to be in conformance with the Contract Documents.

D. The Engineer or Architect shall not be required to determine that the Contractor has promptly or fully paid Subcontractors and suppliers or how or for what purpose the Contractor has used monies paid under the Construction Contract. However, the Engineer or Architect may, upon request and if practical, inform any Subcontractor or supplier of the amount, or percentage of completion, approved or paid to the Contractor on account of the materials supplied or the Work performed by the Subcontractor.

**ARTICLE 24
PAYMENTS WITHHELD**

A. The Engineer or Architect may nullify or revise a previously issued Certificate for Payment prior to Owner's payment thereunder to the extent as may be necessary in the Engineer or Architect's opinion to protect the Owner from loss on account of any of the following causes not discovered or fully accounted for at the time of the certification or approval of the Application for Payment:

- (1) Defective Work;
- (2) filed, or reasonable evidence indicating probable filing of, claims arising out of the Contract by other parties against the Contractor;
- (3) the Contractor's failure to pay for labor, materials or equipment or to pay Subcontractors;
- (4) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- (5) damage suffered by the Owner or another contractor caused by the Contractor, a Subcontractor, or anyone for whose acts they may be liable;
- (6) reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance is insufficient to cover applicable liquidated damages; or
- (7) the Contractor's persistent failure to conform to the requirements of the Contract Documents.

B. If the Owner deems it necessary to withhold payment pursuant to preceding Paragraph A, the Owner will notify the Contractor and Engineer or Architect in writing of the amount to be withheld and the reason for same.

C. The Engineer or Architect shall not be required to withhold payment for completed or partially completed Work for which compliance with the Contract Documents remains to be determined by Specified Inspections or Final Inspections to be performed in their proper sequence. However, if Work for which payment has been approved, certified, or made under an Application for Payment is subsequently determined to be Defective Work, the Engineer or Architect shall determine an appropriate amount that will protect the Owner's interest against the Defective Work.

(1) If payment has not been made against the Application for Payment first including the Defective Work, the Engineer or Architect will notify the Owner and Contractor of the amount to be withheld from the payment until the Defective Work is brought into compliance with the Contract Documents.

(2) If payment has been made against the Application for Payment first including the Defective Work, the Engineer or Architect will withhold the appropriate amount from the next Application for Payment submitted after the determination of noncompliance, such amount to then be withheld until the Defective Work is brought into compliance with the Contract Documents.

D. The amount withheld will be paid with the next Application for Payment certified and approved after the condition for which the Owner has withheld payment is removed or otherwise resolved to the Owner's satisfaction.

E. The Owner shall have the right to withhold from payments due the Contractor under this Contract an amount equal to any amount which the Contractor owes the Owner under another contract.

ARTICLE 25 SUBSTANTIAL COMPLETION

A. Substantial Completion is the stage in the progress of the Work when the Work or designated portion of the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use without disruption or interference by the Contractor in completing or correcting any remaining unfinished Work ("punch list" items). Substantial Completion of the Work, or a designated portion of the Work, is not achieved until so agreed in a Certificate of Substantial Completion signed by the Contractor, Engineer or Architect, and Owner.

B. The Contractor shall notify the Engineer or Architect in writing when it considers the Work, or a portion of the Work which the Owner has agreed to accept separately, to be substantially complete and ready for a Final Inspection. In this notification the Contractor shall identify any items remaining to be completed or corrected for Final Acceptance prior to final payment.

C. Substantial Completion is achieved and a Final Inspection is appropriate only when a minimal number of punch list items exists and only a short period of time will be required to correct or complete them. Upon receipt of the Contractor's notice for a Final Inspection, the Engineer or Architect will advise the Contractor in writing of any conditions of the Work which the Engineer or Architect or Owner is aware do not constitute Substantial Completion, otherwise, a Final Inspection will proceed within a reasonable time after the Contractor's notice is given. However, the Engineer or Architect will not be required to prepare lengthy listings of punch list items; therefore, if the Final Inspection discloses that Substantial Completion has not been achieved, the Engineer or Architect may discontinue or suspend the inspection until the Contractor does achieve Substantial Completion.

D. CERTIFICATE of SUBSTANTIAL COMPLETION

(1) When the Work or a designated portion of the Work is substantially complete, the Engineer or Architect will prepare and sign a Certificate of Substantial Completion to be signed in order by the Contractor, and Owner.

(2) When signed by all parties, the Certificate of Substantial Completion shall establish the Date of Substantial Completion which is the date upon which:

(a) the Work, or designated portion of the Work, is accepted by the Engineer or Architect, and Owner as being ready for occupancy,

(b) the Contractor's one-year and special warranties for the Work covered by the Certificate commence, unless stated otherwise in the Certificate (the one-year warranty for punch list items completed or corrected after the period allowed in the Certificate shall commence on the date of their Final Acceptance) , and

(c) Owner becomes responsible for building security, maintenance, utility services, and insurance, unless stated otherwise in the Certificate.

(3) The Certificate of Substantial Completion shall set the time within which the Contractor shall finish all items on the “punch list” accompanying the Certificate. The completion of punch list items shall be a condition precedent to Final Payment.

(4) If the Work or designated portion covered by a Certificate of Substantial Completion includes roofing work, the General Contractor’s (5-year) Roofing Guarantee, ABC Form C-9, must be executed by the Contractor and attached to the Certificate of Substantial Completion. If the Contract Documents specify any other roofing warranties to be provided by the roofing manufacturer, Subcontractor, or Contractor, they must also be attached to the Certificate of Substantial Completion.

E. The Date of Substantial Completion of the Work, as set in the Certificate of Substantial Completion of the Work or of the last completed portion of the Work, establishes the extent to which the Contractor is liable for Liquidated Damages, if any; however, should the Contractor fail to complete all punch list items within thirty days, or such other time as may be stated in the respective Certificate of Substantial Completion, the Contractor shall bear any expenses, including additional Architectural services and expenses, incurred by the Owner as a result of such failure to complete punch list items in a timely manner.

ARTICLE 26

OCCUPANCY or USE PRIOR to COMPLETION

A. UPON SUBSTANTIAL COMPLETION

Prior to completion of the entire Work, the Owner may occupy or begin utilizing any designated portion of the Work on the agreed Date of Substantial Completion of that portion of the Work.

B. BEFORE SUBSTANTIAL COMPLETION

(1) The Owner shall not occupy or utilize any portion of the Work before Substantial Completion of that portion has been achieved.

(2) The Owner may deliver furniture and equipment and store, or install it in place ready for occupancy and use, in any designated portion of the Work before it is substantially completed under the following conditions:

(a) The Owner’s storage or installation of furniture and equipment will not unreasonably disrupt or interfere with the Contractor’s completion of the designated portion of the Work.

(b) The Contractor consents to the Owner’s planned action (such consent shall not be unreasonably withheld).

(c) The Owner shall be responsible for insurance coverage of the Owner’s furniture and equipment, and the Contractor’s liability shall not be increased.

(d) The Contractor, Engineer or Architect, and Owner will jointly inspect and record the condition of the Work in the area before the Owner delivers and stores or installs furniture and equipment; the Owner will equitably compensate the Contractor for making any repairs to the Work that may subsequently be required due to the Owner’s delivery and storage or installation of furniture and equipment.

(e) The Owner’s delivery and storage or installation of furniture and equipment shall not be deemed an acceptance of any Work not completed in accordance with the requirements of the Contract Documents.

**ARTICLE 27
FINAL PAYMENT**

A. PREREQUISITES to FINAL PAYMENT

The following conditions are prerequisites to Final Payment becoming due the Contractor:

- (1) Full execution of a Certificate of Substantial Completion for the Work, or each designated portion of the Work
- (2) Final Acceptance of the Work.
- (3) The Contractor's completion, to the satisfaction of the Engineer or Architect and Owner, of all documentary requirements of the Contract Documents; such as delivery of "as-built" documents, operating and maintenance manuals, warranties, etc.
- (4) Delivery to the Owner of a final Application for Payment, prepared by the Contractor and approved and certified by the Engineer or Architect.
- (5) Completion of an Advertisement for Completion pursuant to Paragraph C below.
- (6) Delivery by the Contractor to the Owner through the Engineer or Architect of a Release of Claims and such other documents as may be required by Owner, satisfactory in form to the Owner pursuant to Paragraph D below.
- (7) Consent of Surety, if any, to Final Payment to Contractor.
- (8) Delivery by the Contractor to the Engineer or Architect and Owner of other documents, if any, required by the Contract Documents as prerequisites to Final Payment.

B. FINAL ACCEPTANCE of the WORK

"Final Acceptance of the Work" shall be achieved when all "punch list" items recorded with the Certificate(s) of Substantial Completion are accounted for by their completion or correction by the Contractor and acceptance by the Engineer or Architect, and Owner

C. ADVERTISEMENT for COMPLETION

(1) If the Contract Sum is less than \$50,000: The Owner, immediately after being notified by the Engineer or Architect that all other requirements of the Contract have been completed, shall give public notice of completion of the Contract by having an Advertisement for Completion published one time in a newspaper of general circulation, published in the county in which the Owner is located and shall post notice of completion of the Contract on the Owner's bulletin board for one week, and shall require the Contractor to certify under oath that all bills have been paid in full. Final payment may be

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made at any time after the notice has been posted for one entire week.

(2) If the Contract Sum is more than \$50,000: The Contractor, immediately after being notified by the Engineer or Architect that all other requirements of the Contract have been completed, shall give public notice of completion of the Contract by having an Advertisement for Completion, similar to the sample contained in the Project Manual, published for a period of four successive weeks in some newspaper of general circulation published within the city or county where the Work was performed. Proof of publication of the Advertisement for Completion, in duplicate, shall be made by the Contractor to the Engineer or Architect by affidavit of the publisher and a printed copy of the Advertisement for Completion published, in duplicate. If no newspaper is published in the county where the work was done, the notice may be given by posting at the Court House for thirty days and proof of same made by Probate Judge or Sheriff and the Contractor. Final payment shall not be due until thirty days after this public notice is completed.

D. RELEASE of CLAIMS

The Release of Claims and other documents referenced in Paragraph A(6) above are as follows:

(1) A release executed by Contractor of all claims and claims of lien against the Owner arising under and by virtue of the Contract, other than such claims of the Contractor, if any, as may have been previously made in writing and as may be specifically excepted by the Contractor from the operation of the release in stated amounts to be set forth therein

(2) An affidavit under oath, if required, stating that so far as the Contractor has knowledge or information, there are no claims or claims of lien which have been or will be filed by any Subcontractor, Supplier or other party for labor or material for which a claim or claim of lien could be filed.

(3) A release, if required, of all claims and claims of lien made by any Subcontractor, Supplier or other party against the Owner or unpaid Contract funds held by the Owner arising under or related to the Work on the Project; provided, however, that if any Subcontractor, Supplier or others refuse to furnish a release of such claims or claims of lien, the Contractor may furnish a bond executed by Contractor and its Surety to the Owner to provide an unconditional obligation to defend, indemnify and hold harmless the Owner against any loss, cost or expense, including attorney's fees, arising out of or as a result of such claims, or claims of lien, in which event Owner may make Final Payment notwithstanding such claims or claims of lien. If Contractor and Surety fail to fulfill their obligations to Owner under the bond, the Owner shall be entitled to recover damages as a result of such failure, including all costs and reasonable attorney's fees incurred to recover such damages.

E. EFFECT of FINAL PAYMENT

(1) The making of Final Payment shall constitute a waiver of Claims by the Owner except those arising from:

- (a) liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- (b) failure of the Work to comply with the requirements of the Contract Documents;
- (c) terms of warranties or indemnities required by the Contract Documents, or
- (d) latent defects.

(2) Acceptance of Final Payment by the Contractor shall constitute a waiver of claims by Contractor except those previously made in writing, identified by Contractor as unsettled at the time of final Application for Payment, and specifically excepted from the release provided for in Paragraph D(1), above.

ARTICLE 28 CONTRACTOR'S WARRANTY

A. GENERAL WARRANTY

The Contractor warrants to the Owner and Engineer or Architect that all materials and equipment furnished under the Contract will be of good quality and new, except such materials as may be expressly provided or allowed in the Contract Documents to be otherwise, and that none of the Work will be Defective Work.

B. ONE-YEAR WARRANTY

(1) If, within one year after the date of Substantial Completion of the Work or each designated portion of the Work (or otherwise as agreed upon in a mutually-executed Certificate of Substantial Completion), any of the Work is found to be Defective Work, the Contractor shall promptly upon receipt of written notice from the Owner or Engineer or Architect, and without expense to either, replace or correct the Defective Work to conform to the requirements of the Contract Documents, and repair all damage to the site, the building and its contents which is the result of Defective Work or its replacement or correction.

(2) The one-year warranty for punch list items shall begin on the Date of Substantial Completion if they are completed or corrected within the time period allowed in the Certificate of Substantial Completion in which they are recorded. The one-year warranty for punch list items that are not completed or corrected within the time period allowed in the Certificate of Substantial Completion, and other Work performed after Substantial Completion, shall begin on the date of Final Acceptance of the Work. The Contractor's correction of Work pursuant to this warranty does not extend the period of the warranty. The Contractor's one-year warranty does not apply to defects or damages due to improper or insufficient maintenance, improper operation, or wear and tear during normal usage.

(3) Upon recognizing a condition of Defective Work, the Owner shall promptly notify the Contractor of the condition. If the condition is causing damage to the building, its contents, equipment, or site, the Owner shall take reasonable actions to mitigate the damage or its continuation, if practical. If the Contractor fails to proceed promptly to

comply with the terms of the warranty, or to provide the Owner with satisfactory written verification that positive action is in process, the Owner may have the Defective Work replaced or corrected and the Contractor and the Contractor's Surety shall be liable for all expense incurred.

(4) Year-end Inspection(s): An inspection of the Work, or each separately completed portion thereof, is required near the end of the Contractor's one-year warranty period(s). The subsequent delivery of the Engineer or Architect's report of a Year-end Inspection will serve as confirmation that the Contractor was notified of Defective Work found within the warranty period.

(5) The Contractor's warranty of one year is in addition to, and not a limitation of, any other remedy stated herein or available to the Owner under applicable law.

C. GENERAL CONTRACTOR'S ROOFING GUARANTEE

(1) In addition to any other roof related warranties or guarantees that may be specified in the Contract Documents, the roof and associated work shall be guaranteed by the General Contractor against leaks and defects of materials and workmanship for a period of five (5) years, starting on the Date of Substantial Completion of the Project as stated in the Certificate of Substantial Completion. This guarantee for punch list items shall begin on the Date of Substantial Completion if they are completed or corrected within the time period allowed in the Certificate of Substantial Completion in which they are recorded. The guarantee for punch list items that are not completed or corrected within the time period allowed in the Certificate of Substantial Completion shall begin on the date of Final Acceptance of the Work.

(2) The "General Contractor's Roofing Guarantee" (ABC Form C-9), included in the Project Manual, shall be executed in triplicate, signed by the appropriate party and submitted to the Engineer or Architect for submission with the Certificate of Substantial Completion to the Owner.

(3) This guarantee does not include costs which might be incurred by the General Contractor in making visits to the site requested by the Owner regarding roof problems that are due to lack of proper maintenance (keeping roof drains and/or gutters clear of debris that cause a stoppage of drainage which results in water ponding, overflowing of flashing, etc.), or damages caused by vandalism or misuse of roof areas. Should the contractor be required to return to the job to correct problems of this nature that are determined not to be related to faulty workmanship and materials in the installation of the roof, payment for actions taken by the Contractor in response to such request will be the responsibility of the Owner. A detailed written report shall be made by the General Contractor on each of these 'Service Calls' with copies to the Engineer or Architect, and Owner

D. SPECIAL WARRANTIES

(1) The Contractor shall deliver to the Owner through the Engineer or Architect all special or extended warranties required by the Contract Documents from the Contractor,

Subcontractors, and suppliers.

(2) The Contractor and the Contractor's Surety shall be liable to the Owner for such special warranties during the Contractor's one-year warranty; thereafter, the Contractor's obligations relative to such special warranties shall be to provide reasonable assistance to the Owner in their enforcement.

E. ASSUMPTION of GUARANTEES of OTHERS

If the Contractor disturbs, alters, or damages any work guaranteed under a separate contract, thereby voiding the guarantee of that work, the Contractor shall restore the work to a condition satisfactory to the Owner and shall also guarantee it to the same extent that it was guaranteed under the separate contract.

ARTICLE 29

CONTRACTOR'S and SUBCONTRACTORS' INSURANCE

A. GENERAL

(1) RESPONSIBILITY. The Contractor shall be responsible to the Owner from the time of the signing of the Construction Contract or from the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind resulting from any negligent act or omission or breach, failure or other default regarding the work by the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of who may be the owner of the property.

(2) INSURANCE PROVIDERS. Each of the insurance coverages required below shall be issued by an insurer licensed by the Insurance Commissioner to transact the business of insurance in the State of Alabama for the applicable line of insurance, and such insurer (or, for qualified selfinsureds or group self-insureds, a specific excess insurer providing statutory limits) must have a Best Policyholders Rating of "A-" or better and a financial size rating of Class V or larger.

(3) NOTIFICATION ENDORSEMENT. Each policy shall be endorsed to provide that the insurance company agrees that the policy shall not be canceled, changed, allowed to lapse or allowed to expire for any reason until thirty days after the Owner has received written notice by certified mail as evidenced by return receipt or until such time as other insurance coverage providing protection equal to protection called for in the Contract Documents shall have been received, accepted and acknowledged by the Owner. Such notice shall be valid only as to the Project as shall have been designated by Project Name and Number in said notice.

(4) INSURANCE CERTIFICATES. The Contractor shall procure the insurance coverages identified below, or as otherwise required in the Contract Documents, at the Contractor's own expense, and to evidence that such insurance coverages are in effect, the Contractor shall furnish the Owner an insurance certificate(s) acceptable to the Owner and listing the Owner as the certificate holder. The insurance certificate(s) must be delivered to the Owner with the Construction Contract and Bonds for final approval and execution of the Construction Contract.

The insurance certificate must provide the following:

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- (a) Name and address of authorized agent of the insurance company
- (b) Name and address of insured
- (c) Name of insurance company or companies
- (d) Description of policies
- (e) Policy Number(s)
- (f) Policy Period(s)
- (g) Limits of liability
- (h) Name and address of Owner as certificate holder
- (i) Project Name and Number, if any
- (j) Signature of authorized agent of the insurance company
- (k) Telephone number of authorized agent of the insurance company
- (l) Mandatory thirty day notice of cancellation / non-renewal / change

B. INSURANCE COVERAGES

Unless otherwise provided in the Contract Documents, the Contractor shall purchase the types of insurance coverages with liability limits not less than as follows:

(1) WORKERS' COMPENSATION and EMPLOYER'S LIABILITY INSURANCE

- (a) Workers' Compensation coverage shall be provided in accordance with the statutory coverage required in Alabama. A group insurer must submit a certificate of authority from the Alabama Department of Industrial Relations approving the group insurance plan. A selfinsurer must submit a certificate from the Alabama Department of Industrial Relations stating the Contractor qualifies to pay its own workers' compensation claims.
- (b) Employer's Liability Insurance limits shall be at least:
 - .1 Bodily Injury by Accident - \$1,000,000 each accident
 - .2 Bodily Injury by Disease - \$1,000,000 each employee

(2) COMMERCIAL GENERAL LIABILITY INSURANCE

- (a) Commercial General Liability Insurance, written on an ISO Occurrence Form (current edition as of the date of Advertisement for Bids) or equivalent, shall include, but need not be limited to, coverage for bodily injury and property damage arising from premises and operations liability, products and completed operations liability, blasting and explosion, collapse of structures, underground damage, personal injury liability and contractual liability. The Commercial General Liability Insurance shall provide at minimum the following limits:

Coverage	Limit
.1 General Aggregate	\$ 2,000,000.00 per Project
.2 Products, Completed Operations Aggregate	\$ 2,000,000.00 per Project
.3 Personal and Advertising Injury	\$ 1,000,000.00 per Occurrence
.4 Each Occurrence	\$ 1,000,000.00

- (b) Additional Requirements for Commercial General Liability Insurance:
 - .1 The policy shall name the Owner, Engineer or Architect, and their agents, consultants and employees as additional insureds, state that this coverage shall be primary insurance for the additional insureds; and contain no exclusions of the additional insureds relative to job accidents.

.2 The policy must include separate per project aggregate limits.

(3) COMMERCIAL BUSINESS AUTOMOBILE LIABILITY INSURANCE

(a) Commercial Business Automobile Liability Insurance which shall include coverage for bodily injury and property damage arising from the operation of any owned, non-owned or hired automobile. The Commercial Business Automobile Liability Insurance Policy shall provide not less than \$1,000,000 Combined Single Limits for each occurrence.

(b) The policy shall name the Owner, Engineer or Architect, and their agents, consultants, and employees as additional insureds.

(4) COMMERCIAL UMBRELLA LIABILITY INSURANCE

(a) Commercial Umbrella Liability Insurance to provide excess coverage above the Commercial General Liability, Commercial Business Automobile Liability and the Workers' Compensation and Employer's Liability to satisfy the minimum limits set forth herein.

(b) Minimum Combined Primary Commercial General Liability and Commercial/Excess Umbrella Limits of:

.1 \$ 5,000,000 per Occurrence

.2 \$ 5,000,000 Aggregate

(c) Additional Requirements for Commercial Umbrella Liability Insurance:

.1 The policy shall name the Owner, Engineer or Architect, and their agents, consultants, and employees as additional insureds.

.2 The policy must be on an "occurrence" basis.

(5) BUILDER'S RISK INSURANCE

(a) The Builder's Risk Policy shall be made payable to the Owner and Contractor, as their interests may appear. The policy amount shall be equal to 100% of the Contract Sum, written on a Causes of Loss - Special Form (current edition as of the date of Advertisement for Bids), or its equivalent. All deductibles shall be the sole responsibility of the Contractor.

(b) The policy shall be endorsed as follows:

"The following may occur without diminishing, changing, altering or otherwise affecting the coverage and protection afforded the insured under this policy:

(i) Furniture and equipment may be delivered to the insured premises and installed in place ready for use; or

(ii) Partial or complete occupancy by Owner; or

(iii) Performance of work in connection with construction operations insured by the Owner, by agents or lessees or other contractors of the Owner, or by contractors of the lessee of the Owner."

C. SUBCONTRACTORS' INSURANCE

(1) WORKERS' COMPENSATION and EMPLOYER'S LIABILITY INSURANCE. The Contractor shall require each Subcontractor to obtain and maintain Workers' Compensation and Employer's Liability Insurance coverages as described in preceding Paragraph B, or to be covered by the Contractor's Workers' Compensation and

Employer's Liability Insurance while performing Work under the Contract.

(2) LIABILITY INSURANCE. The Contractor shall require each Subcontractor to obtain and maintain adequate General Liability, Automobile Liability, and Umbrella Liability Insurance coverages similar to those described in preceding Paragraph B. Such coverage shall be in effect at all times that a Subcontractor is performing Work under the Contract.

(3) ENFORCEMENT RESPONSIBILITY. The Contractor shall have responsibility to enforce its Subcontractors' compliance with these or similar insurance requirements; however, the Contractor shall, upon request, provide the Engineer or Architect or Owner acceptable evidence of insurance for any Subcontractor.

D. TERMINATION of OBLIGATION to INSURE

Unless otherwise expressly provided in the Contract Documents, the obligation to insure as provided herein shall continue as follows:

(1) BUILDER'S RISK INSURANCE. The obligation to insure under Subparagraph B (5) shall remain in effect until the Date of Substantial Completion as shall be established in the Certificate of Substantial Completion. In the event that multiple Certificates of Substantial Completion covering designated portions of the Work are issued, Builder's Risk coverage shall remain in effect until the Date of Substantial Completion as shall be established in the last issued Certificate of Substantial Completion.

(2) PRODUCTS and COMPLETED OPERATIONS. The obligation to carry Products and Completed Operations coverage specified under Subparagraph B(2) shall remain in effect for two years after the Date(s) of Substantial Completion.

(3) ALL OTHER INSURANCE. The obligation to carry other insurance coverages specified under Subparagraphs B(1) through B(4) and Paragraph C shall remain in effect after the Date(s) of Substantial Completion until such time as all Work required by the Contract Documents is completed. Equal or similar insurance coverages shall remain in effect if, after completion of the Work, the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, returns to the Project to perform warranty or maintenance work pursuant to the terms of the Contract Documents.

E. 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 Engineer or Architect, Engineer or Architect's consultants, separate contractors performing construction or operations related to the Project, 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 builder's risk insurance or other property insurance applicable to the Work or to other property located within or adjacent to the Project, except such rights as they may have to proceeds of such insurance held by the

Owner or Contractor as fiduciary. The Owner or Contractor, as appropriate, shall require of the Engineer or Architect, Engineer or Architect's consultants, separate contractors, if any, and the subcontractor, sub-subcontractors, suppliers, 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 the 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. The waivers provided for in this paragraph shall survive final acceptance and continue to apply to insured losses to the Work or other property on or adjacent to the Project.

**ARTICLE 30
PERFORMANCE and PAYMENT BONDS**

A. GENERAL

Upon signing and returning the Construction Contract to the Owner for final approval and execution, the Contractor shall, at the Contractor's expense, furnish to the Owner a Performance Bond and a Payment Bond, each in a penal sum equal to 100% of the Contract Sum. Each bond shall be on the form contained in the Project Manual, shall be executed by a surety company (Surety) acceptable to the Owner and duly authorized and qualified to make such bonds in the State of Alabama in the required amounts, shall be countersigned by an authorized, Alabama resident agent of the Surety who is qualified to execute such instruments, and shall have attached thereto a power of attorney of the signing official. The provisions of this Article are not applicable to this Contract if the Contract Sum is less than \$50,000, unless bonds are required for this Contract in the Supplemental General Conditions.

B. PERFORMANCE BOND

Through the Performance Bond, the Surety's obligation to the Owner shall be to assure the prompt and faithful performance of the Contract and Contract Change Orders. The Penal Sum shall remain equal to the Contract Sum as the Contract Sum is adjusted by Contract Change Orders. In case of default on the part of the Contractor, the Surety shall take charge of and complete the Work in accordance with the terms of the Performance Bond. Any reasonable expenses incurred by the Owner as a result of default on the part of the Contractor, including architectural, engineering, administrative, and legal services, shall be recoverable under the Performance Bond.

C. PAYMENT BOND

Through the Payment Bond the Surety's obligation to the Owner shall be to guarantee that the contractor and its Subcontractors shall promptly make payment to all persons supplying labor, materials, or supplies for, or in, the prosecution of the Work, including the payment of reasonable attorneys fees incurred by successful claimants or plaintiffs in civil actions on the Bond. Any person or entity indicating that they have a claim of nonpayment under the Bond shall, upon written request, be promptly furnished a certified copy of the Bond and Construction Contract by the Contractor, Engineer or Architect, Owner or whomever is recipient of the request.

D. CHANGE ORDERS

The Penal Sum shall remain equal to the Contract Sum as the Contract Sum is adjusted by Contract Change Orders. All Contract Change Orders involving an increase in the

Contract Sum will require consent of Surety by endorsement of the Contract Change Order form. The Surety waives notification of any Contract Change Orders involving only extension of the Contract Time.

E. EXPIRATION

The obligations of the Contractor's performance bond surety shall be coextensive with the contractor's performance obligations under the Contract Documents; provided.

**ARTICLE 31
ASSIGNMENT**

The Contractor shall not assign the Contract or sublet it as a whole nor assign any moneys due or to become due to the Contractor thereunder without the previous written consent of the Owner (and of the Surety, in the case of a bonded Construction Contract). As prescribed by the Public Works Law, the Contract shall in no event be assigned to an unsuccessful bidder for the Contract whose bid was rejected because the bidder was not a responsible or responsive bidder.

**ARTICLE 32
CONSTRUCTION by OWNER or SEPARATE CONTRACTORS**

A. OWNER'S RESERVATION of RIGHT

(1) The Owner reserves the right to self-perform, or to award separate contracts for, other portions of the Project and other Project related construction and operations on the site. The contractual conditions of such separate contracts shall be substantially similar to those of this Contract, including insurance requirements and the provisions of this Article

(2) When separate contracts are awarded, the term "Contractor" in the separate Contract Documents shall mean the Contractor who executes the respective Construction Contract.

B. COORDINATION

Unless otherwise provided in the Contract Documents, the Owner shall be responsible for coordinating the activities of the Owner's forces and separate contractors with the Work of the Contractor. The Contractor shall cooperate with the Owner and separate contractors, shall participate in reviewing and comparing their construction schedules relative to that of the Contractor when directed to do so, and shall make and adhere to any revisions to the construction schedule resulting from a joint review and mutual agreement.

C. CONDITIONS APPLICABLE to WORK PERFORMED by OWNER

Unless otherwise provided in the Contract Documents, when the Owner self-performs construction or operations related to the Project, the Owner shall be subject to the same obligations to Contractor as Contractor would have to a separate contractor under the provision of this Article 32.

D. MUTUAL RESPONSIBILITY

(1) The Contractor shall reasonably accommodate the required introduction and storage of materials and equipment and performance of activities by the Owner and separate contractors and shall connect and coordinate the Contractor's Work with theirs as required by the Contract Documents.

(2) By proceeding with an element or portion of the Work that is applied to or performed on construction by the Owner or a separate contractor, or which relies upon their

operations, the Contractor accepts the condition of such construction or operations as being suitable for the Contractor's Work, except for conditions that are not reasonably discoverable by the Contractor. If the Contractor discovers any condition in such construction or operations that is not suitable for the proper performance of the Work, the Contractor shall not proceed, but shall instead promptly notify the Engineer or Architect in writing of the condition discovered.

(3) The Contractor shall reimburse the Owner for any costs incurred by a separate contractor and payable by the Owner because of acts or omissions of the Contractor. Likewise, the Owner shall be responsible to the Contractor for any costs incurred by the Contractor because of the acts or omissions of a separate contractor.

(4) The Contractor shall not cut or otherwise alter construction by the Owner or a separate contractor without the written consent of the Owner and separate contractor; such consent shall not be unreasonably withheld. Likewise, the Contractor shall not unreasonably withhold its consent allowing the Owner or a separate contractor to cut or otherwise alter the Work.

(5) The Contractor shall promptly remedy any damage caused by the Contractor to the construction or property of the Owner or separate contractors.

ARTICLE 33 SUBCONTRACTS

A. AWARD of SUBCONTRACTS and OTHER CONTRACTS for PORTIONS of the WORK

(1) Unless otherwise provided in the Contract Documents, when delivering the executed Construction Contract, bonds, and evidence of insurance to the Engineer or Architect, the Contractor shall also submit a listing of Subcontractors proposed for each principal portion of the Work and fabricators or suppliers proposed for furnishing materials or equipment fabricated to the design of the Contract Documents. This listing shall be in addition to any naming of Subcontractors, fabricators, or suppliers that may have been required in the bid process. The Engineer or Architect will promptly reply to the Contractor in writing stating whether or not the Owner, after due investigation, has reasonable objection to any Subcontractor, fabricator, or supplier proposed by the Contractor. The issuance of the Notice to Proceed in the absence of such objection by the Owner shall constitute notice that no reasonable objection to them is made.

(2) The Contractor shall not contract with a proposed Subcontractor, fabricator, or supplier to whom the Owner has made reasonable and timely objection. Except in accordance with prequalification procedures as may be contained in the Contract Documents, through specified qualifications, or on the grounds of reasonable objection, the Owner may not restrict the Contractor's selection of Subcontractors, fabricators, or suppliers.

(3) Upon the Owner's reasonable objection to a proposed Subcontractor, fabricator, or supplier, the Contractor shall promptly propose another to whom the Owner has no reasonable objection. If the proposed Subcontractor, fabricator, or supplier to whom the Owner made reasonable objection was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be equitably adjusted by Contract Change Order for any resulting difference if the Contractor has acted promptly and responsively in this procedure.

(4) The Contractor shall not change previously selected Subcontractors, fabricators, or

suppliers without notifying the Engineer or Architect and Owner in writing of proposed substitute Subcontractors, fabricators, or suppliers. If the Owner does not make a reasonable objection to a proposed substitute within three working days, the substitute shall be deemed approved.

B. SUBCONTRACTUAL RELATIONS

(1) The Contractor agrees to bind every Subcontractor and material supplier (and require every Subcontractor to so bind its subcontractors and material suppliers) to all the provisions of the Contract Documents as they apply to the Subcontractor's and material supplier's portion of the Work.

(2) Nothing contained in the Contract Documents shall be construed as creating any contractual relationship between any Subcontractor and the Owner, nor to create a duty of the Engineer or Architect, or Owner, to resolve disputes between or among the Contractor or its Subcontractors and suppliers or any other duty to such Subcontractors or suppliers.

**ARTICLE 34
ENGINEER OR ARCHITECT'S STATUS**

A. The Engineer or Architect is an independent contractor performing, with respect to this Contract, pursuant to an agreement executed between the Owner and the Engineer or Architect. The Engineer or Architect has prepared the Drawings and Specifications and assembled the Contract Document and is, therefore, charged with their interpretation and clarification as described in the Contract Documents. As a representative of the Owner, the Engineer or Architect will endeavor to guard the Owner against variances from the requirements of the Contract Documents by the Contractor. On behalf of the Owner, the Engineer or Architect will administer the Contract as described in the Contract Documents during construction and the Contractor's one-year warranty.

B. So as to maintain continuity in administration of the Contract and performance of the Work, and to facilitate complete documentation of the project record, all communications between the Contractor and Owner regarding matters of or related to the Contract shall be directed through the Engineer or Architect, unless direct communication is otherwise required to provide a legal notification. Unless otherwise authorized by the Engineer or Architect, communications by and with the Engineer or Architect's consultants shall be through the Engineer or Architect. Unless otherwise authorized by the Contractor, communications by and with Subcontractors and material suppliers shall be through the Contractor.

C. ENGINEER OR ARCHITECT'S AUTHORITY

Subject to other provisions of the Contract Documents, the following summarizes some of the authority vested in the Engineer or Architect by the Owner with respect to the Construction Contract and as further described or conditioned in other Articles of these General Conditions of the Contract.

(1) The Engineer or Architect is authorized to:

- (a) approve "minor" deviations as defined in Article 9, Submittals,
- (b) make "minor" changes in the Work as defined in Article 19, Changes in the Work,
- (c) reject or require the correction of Defective Work,
- (d) require the Contractor to stop the performance of Defective Work,
- (e) adjust an Application for Payment by the Contractor pursuant to Article 30,

Certification and Approval of payments, and
(f) issue Notices to Cure.

(2) The Engineer or Architect is not authorized to:

- (a) revoke, alter, relax, or waive any requirements of the Contract Documents (other than “minor” deviations and changes) without concurrence of the Owner,
- (b) finally approve or accept any portion of the Work without concurrence of the Owner,
- (c) issue instructions contrary to the Contract Documents,
- (d) issue Notice of Termination or otherwise terminate the Contract, or
- (e) require the Contractor to stop the Work except only to avoid the performance of Defective Work.

D. LIMITATIONS of RESPONSIBILITIES

- (1) The Engineer or Architect shall not be responsible to Contractors or to others for supervising or coordinating the performance of the Work or for the Construction Methods or safety of the Work, unless the Contract Documents give other specific instructions concerning these matters.
- (2) The Engineer or Architect will not be responsible to the Contractor (nor the Owner) for the Contractor’s failure to perform the Work in accordance with the requirements of the Contract Documents or for acts or omissions of the Contractor, a Subcontractor, or anyone for whose acts they may be liable. However, the Engineer or Architect will report to the Owner and Contractor any Defective Work recognized by the Engineer or Architect.
- (3) The Engineer or Architect will endeavor to secure faithful performance by Owner and Contractor, and the Engineer or Architect will not show partiality to either or be liable to either for results of interpretations or decisions rendered in good faith.

E. ENGINEER OR ARCHITECT’S DECISIONS

Decisions by the Engineer or Architect shall be in writing. The Engineer or Architect’s decisions on matters relating to aesthetic effect will be final and binding if consistent with the intent expressed in the Contract Documents. The Engineer or Architect’s decisions regarding disputes arising between the Contractor and Owner shall be advisory.

**ARTICLE 35
CASH ALLOWANCES**

A. All allowances stated in the Contract Documents shall be included in the Contract Sum. Items covered by allowances shall be supplied by the Contractor as directed by the Engineer or Architect or Owner and the Contractor shall afford the Owner the economy of obtaining competitive pricing from responsible bidders for allowance items unless other purchasing procedures are specified in the Contract Documents.

B. Unless otherwise provided in the Contract Documents:

- (1) allowances shall cover the cost to the Contractor of materials and equipment delivered to the Project site and all applicable taxes, less applicable trade discounts;
- (2) the Contractor’s costs for unloading, storing, protecting, and handling at the site, labor, installation, overhead, profit and other expenses related to materials or equipment covered by an allowance shall be included in the Contract Sum but not in the allowances;
- (3) if required, the Contract Sum shall be adjusted by Change Order to reflect the actual

costs of an allowance.

C. Any selections of materials or equipment required of the Engineer or Architect or Owner under an allowance shall be made in sufficient time to avoid delay of the Work.

ARTICLE 36

PERMITS, LAWS, and REGULATIONS

A. PERMITS, FEES AND NOTICES

(1) Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work which are customarily secured after award of the Construction Contract and which are in effect on the date of receipt of bids.

(2) The Contractor shall comply with and give notices required by all laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

B. TAXES

Unless stated otherwise in the Contract Documents, materials incorporated into the Work are exempt from sales and use tax pursuant to Section 40-9-33, Code of Alabama, 1975 as amended. The Contractor and its subcontractors shall be responsible for complying with rules and regulations of the Sales, Use, & Business Tax Division of the Alabama Department of Revenue regarding certificates and other qualifications necessary to claim such exemption when making qualifying purchases from vendors. The Contractor shall pay all applicable taxes that are not covered by the exemption of Section 40-9-33 and which are imposed as of the date of receipt of bids, including those imposed as of the date of receipt of bids but scheduled to go into effect after that date.

C. COMPENSATION for INCREASES

The Contractor shall be compensated for additional costs incurred because of increases in tax rates imposed after the date of receipt of bids.

ARTICLE 37

ROYALTIES, PATENTS, and COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend, indemnify and hold harmless the Owner, Engineer or Architect, Engineer or Engineer or Architect's consultants and their agents, employees, and consultants from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of, related to, or resulting from all suits or claims for infringement of any patent rights or copyrights arising out of the inclusion of any patented or copyrighted materials, methods, or systems selected by the Contractor and used during the execution of or incorporated into the Work. This indemnification does not apply to any suits or claims of infringement of any patent rights or copyrights arising out of any patented or copyrighted materials, methods, or systems specified in the Contract Documents. However, if the Contractor has information that a specified material, method, or system is or may constitute an infringement of a patent or copyright, the Contractor shall be responsible for any resulting loss unless such information is promptly furnished to the Engineer or Architect.

**ARTICLE 38
USE of the SITE**

A. The Contractor shall confine its operations at the Project site to areas permitted by the Owner and by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials, equipment, employees' vehicles, or debris. The Contractor's operations at the site shall be restricted to the sole purpose of constructing the Work, use of the site as a staging, assembly, or storage area for other business which the Contractor may undertake shall not be permitted.

B. Unless otherwise provided in the Contract Documents, temporary facilities, such as storage sheds, shops, and offices may be erected on the Project site with the approval of the Engineer or Architect and Owner. Such temporary buildings and/or utilities shall remain the property of the Contractor, and be removed at the Contractor's expense upon completion of the Work, unless the Owner authorizes their abandonment without removal.

**ARTICLE 39
CUTTING and PATCHING**

A. The Contractor shall be responsible for all cutting, fitting, or patching that may be required to execute the Work to the results indicated in the Contract Documents or to make its parts fit together properly.

B. Any cutting, patching, or excavation by the Contractor shall be supervised and performed in a manner that will not endanger persons nor damage or endanger the Work or any fully or partially completed construction of the Owner or separate contractors.

**ARTICLE 40
IN-PROGRESS and FINAL CLEANUP**

A. IN-PROGRESS CLEAN-UP

(1) The Contractor shall at all times during the progress of the Work keep the premises and surrounding area free from rubbish, scrap materials and debris resulting from the Work. Trash and combustible materials shall not be allowed to accumulate inside buildings or elsewhere on the premises. At no time shall any rubbish be thrown from window openings. Burning of trash and debris on site is not permitted.

(2) The Contractor shall make provisions to minimize and confine dust and debris resulting from construction activities.

B. FINAL CLEAN-UP

(1) Before Substantial Completion or Final Acceptance is achieved, the Contractor shall have removed from the Owner's property all construction equipment, tools, and machinery; temporary structures and/or utilities including the foundations thereof (except such as the Owner permits in writing to remain); rubbish, debris, and waste materials; and all surplus materials, leaving the site clean and true to line and grade, and the Work in a safe and clean condition, ready for use and operation.

(2) In addition to the above, and unless otherwise provided in the Contract Documents, the Contractor shall be responsible for the following special cleaning for all trades as the Work is completed:

(a) Cleaning of all painted, enameled, stained, or baked enamel work: Removal of all marks, stains, finger prints and splatters from such surfaces.

(b) Cleaning of all glass: Cleaning and removing of all stickers, labels, stains, and paint from all glass, and the washing and polishing of same on interior and exterior.

(c) Cleaning or polishing of all hardware: Cleaning and polishing of all hardware.

(d) Cleaning all tile, floor finish of all kinds: Removal of all splatters, stains, paint, dirt, and dust, the washing and polishing of all floors as recommended by the manufacturer or required by the Engineer or Architect.

(e) Cleaning of all manufactured articles, materials, fixtures, appliances, and equipment: Removal of all stickers, rust stains, labels, and temporary covers, and cleaning and conditioning of all manufactured articles, material, fixtures, appliances, and electrical, heating, and air conditioning equipment as recommended or directed by the manufacturers, unless otherwise required by the Architect or Engineer; blowing out or flushing out of all foreign matter from all equipment, piping, tanks, pumps, fans, motors, devices, switches, panels, fixtures, boilers, sanitizing potable water systems; and freeing identification plates on all equipment of excess paint and the polishing thereof.

C. OWNER'S RIGHT to CLEAN-UP

If the Contractor fails to comply with these clean-up requirements and then fails to comply with a written directive by the Engineer or Architect to clean-up the premises within a specified time, the Engineer or Architect or Owner may implement appropriate clean-up measures and the cost thereof shall be deducted from any amounts due or to become due the Contractor

ARTICLE 41

LIQUIDATED DAMAGES

A. Time is the essence of the Contract. Any delay in the completion of the Work required by the Contract Documents may cause inconvenience to the public and loss and damage to the Owner including but not limited to interest and additional administrative, architectural, inspection and supervision charges. By executing the Construction Contract, the Contractor agrees that the Contract Time is sufficient for the achievement of Substantial Completion.

B. The Contract Documents may provide in the Construction Contract or elsewhere for a certain dollar amount for which the Contractor and its Surety (if any) will be liable to the Owner as liquidated damages for each calendar day after expiration of the Contract Time that the Contractor fails to achieve Substantial Completion of the Work. If such daily liquidated damages are provided for, Owner and Contractor, and its Surety, agree that such amount is reasonable and agree to be bound thereby.

C. The amount of liquidated damages due under either paragraph B or C, above, may be deducted by the Owner from the moneys otherwise due the Contractor in the Final Payment, not as a penalty, but as liquidated damages sustained, or the amount may be recovered from Contractor or its Surety. If part of the Work is substantially completed within the Contract Time and part is not, the stated charge for liquidated damages shall be equitably prorated to that portion of the Work that the Contractor fails to substantially complete within the Contract Time. It is mutually understood and agreed between the parties hereto that such amount is reasonable as liquidated damages.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
SUPPLEMENTARY CONDITIONS**

SECTION 00-0050 – Page 1 of 2

1.1 SUMMARY

- A. Related Documents:
 - 1. Document 00 7200 - General Conditions.
 - 2. Division 01 - General Requirements.

1.2 GENERAL

- A. The following supplements modify, delete from, or add to the General Conditions referenced above.
- B. Where provisions of the General Conditions are modified, unaltered provisions remain in effect.

1.3 SUPPLEMENTS

1.4 ADDITIONAL REQUIREMENTS

A. Preliminary Drawings and Specifications – Prior to beginning construction, Contractor shall mark all preliminary drawings as VOID and insure no preliminary drawings will be used during construction. Contractor shall further direct his subcontractors, vendors, and trades to do likewise. At execution of the construction contract, the Contractor and his subcontractors shall certify that all contracts reflect the provisions of the current and official drawing revision that will be used to obtain permits and licenses from the Authorities Having Jurisdiction (AHJ)

B. Drawings and Specifications for Permitting – Contractor will be furnished computer .pdf files for bidding, building permits, and construction transmitted by email. These drawings and specifications will be labeled *Drawings and Project Manual For Construction* and will contain the Engineer or Architect's Alabama registration seal. The Contractor is authorized to make sufficient copies as is required by the AHJ for submittals and procuring all required permits. The Project Manual may also be referred to as "Project Specifications"

C. Revised Drawings and Specifications - In the event that drawings are revised due to subsequent changes by the Owner or comments by the AHJ, the Contractor will be furnished amended documents by emailed .pdf files, either by individual sheet, or groups of sheets, or full set. Contractor is responsible for distribution and receipt of amended sheets to all subcontractors, vendors, and trades.

D. Drawings and Specifications for Construction– Contractor will maintain the official printed permit set of drawings and specifications for use as the master construction set. These drawings will be labeled *Drawings and Project Manual For Construction* and will contain the Engineer or Architect's Alabama registration seal, and the AHJ certification stamp. The Contractor alone is authorized to make an unlimited number of copies for his and his subcontractors' use, at the Contractor's expense. Such authorization shall expire at the completion

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
SUPPLEMENTARY CONDITIONS**

SECTION 00-0050 – Page 2 of 2

of construction, and all drawings that can be accounted for, except final record sets, shall be destroyed or returned to Engineer or Architect.

E. Additional Insured Provisions – Contractor's General, Automobile, and Umbrella Liability Insurance Policies shall name the Owner, the Engineer or Architect, and their agents, consultants, and employees as Additional Insureds, stating that this coverage shall be the primary insurance for the Additional Insureds, and contain no exclusions of the Additional Insureds relative to job accidents. Engineer or Architect must be furnished Certificates of Insurance listing Engineer or Architect and consultants as Additional Insured. This requirement is in accord with General Conditions of the Contract 00 0040, Article 29.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
INVITATION TO BID**

SECTION 00-0200 – Page 1 of 2

INVITATION TO BID

Project: Shelby County Public Safety Radio Towers Project

Owner: Shelby County Commission

Sealed bids for the **SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT** will be received by the Shelby County Commission in the Chief Financial Officer's Office located at 200 West College Street, Room 125, Columbiana, AL 35051 until 2:00 p.m. on May 7, 2024 and at the time will be opened, and publicly read.

The owner requires the Project to be complete within **ninety (90)** calendar days from date indicated on the notice to proceed. (See detail on construction time periods in Section 00-1020.)

All interested bidders may obtain copies of the Construction Documents upon receipt of a \$20.00 non-refundable payment. Checks should be made payable to the Shelby County Commission. Interested bidders may obtain Bid Documents from the Shelby County Department of Facilities & General Services office located at 280 McDow Road, Columbiana, Alabama 35051. Electronic copies of bid documents may be obtained at no cost by sending a request to rlecroy@shelbyal.com. Contact Gina LeCroy at 205-670-6461 or at rlecroy@shelbyal.com regarding any questions.

A mandatory virtual pre-bid conference will be held via Zoom call at 10:00 a.m. on April 30, 2024. Bidders are responsible for contacting Gina LeCroy at rlecroy@shelbyal.com to attain a link to join the virtual meeting. **Attendance at the Pre-Bid Conference IS REQUIRED for all General Contractor Bidders** intending to submit a Proposal, and is highly recommended for Subcontractors. Bids from General Contractors not attending the Pre-Bid Conference will be rejected. Shelby County reserves the right to waive this requirement if it is determined to be in the best interest of the County.

Bidders will be required to provide Bid security in the form of a Bid Bond or cashier's check in the amount of a sum no less than five (5) percent of the Bid Price.

Refer to other bidding requirements described in Document 00201 – Instructions to Bidders

Submit your Bid on the Bid Form provided.

Your Bid will be required to be submitted under a condition of irrevocability for a period of sixty (60) days after submission.

The attention of bidders is called to the provisions of State Law Governing General Contractors, as set forth in Sections 34-8-1 to 34-8-24, inclusive, Code of Alabama of 1975, as amended; and the provisions of said law shall govern bidders insofar as it is applicable.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
INVITATION TO BID**

SECTION 00-0200 – Page 2 of 2

The above-mentioned provisions of the Code make it illegal for the Owner to consider a bid from anyone who is not properly licensed under such code provisions. The Owner, therefore will not consider any bid unless the bidder produces evidence that he is licensed. Neither will the Owner enter into a Contract with a foreign corporation which is not qualified under State Law to do business in the State of Alabama.

The attention of non-resident bidders is called to the provisions of Alabama Law, Section 39-3-5, Code of Alabama 1975, as amended, relating to preference to be given to resident contractors in Alabama over non-resident contractors in the award of contracts in the same manner and to the same extent as provided by the laws of the state of domicile of the non-resident contractor, and to the requirements that the bid documents tendered by any non-resident contractor must be accompanied by "a written opinion of an attorney-at-law licensed to practice law in such non-resident contractor's state of domicile as to the preference, if any or none, granted by the law of the state to its own business entities whose principal places of business are in that state in the letting of any or all public contracts."

REQUIREMENTS FOR BIDDERS

Bidding contractor will be required to provide evidence of E-Verify documentation and Section 84 business license.

IMMIGRATION LAW

By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

OPEN TRADE

By signing this contract, vendor agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

Please provide your bid response in triplicate, one original and two copies. Envelope must be sealed with Contractor Name, Contractor's License Number, Project Name, Bid Date and Time listed in the bottom left hand corner.

The Owner reserves the right to accept or reject any or all Bids.

Chad Scroggins
County Manager

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT INSTRUCTIONS TO BIDDERS

SECTION 00-0201 – Page 1 of 6

1.1 SECURITY DOCUMENTS

Bidders may obtain Bid Documents from the Shelby County Facilities & General Services office located at 280 McDow Road, AL 35051 (telephone 205/670-6461). Electronic copies of bid documents may be obtained at no cost by sending a request to rlcroy@shelbyal.com.

1.2 BID FORM

- A. In order to receive consideration, make all bids in strict accordance with the following:
 - 1. Make bids upon the forms provided therefore, properly executed and with all items filled out.
 - 2. Do not change the wording of the Bid Form, and do not alter the Bid Form.
 - 3. Unauthorized conditions, limitations, or provisions attached to the proposal shall be cause for rejection of the proposal.
 - 4. Telegraphic bid or telegraphic modification of bid will not be considered.
 - 5. Bids received after the time specified for receiving them will not be considered.
 - 6. Late bids will be returned to the sender unopened.
 - 7. Each bid shall be addressed to the Owner, and shall be delivered to the Owner at the address given in the Invitation to Bid on or before the day and hour set for receiving bids.
 - 8. Each bid shall be enclosed in a sealed envelope bearing the title of the Work, the name of the Bidder and address, Bidder's license number, classification of license, limits of classification, expiration date, and the date and hour of the bid opening.
 - 9. It is the sole responsibility of the bidder to see that his bid is received on time.

Bidders are cautioned that, in order to be considered responsive, a complete bid for the project, including unit prices and any specified allowances, must be submitted. A bid for less or with exceptions or clarifications will not be considered responsive.

1.3 BONDS

- A. BID BONDS
 - 1. A Certified Check or Bid Bond for the lesser of five percent (5%) of the proposed Contract Amount or \$10,000 made payable to Shelby County Commission must accompany each bid as evidence of good faith.
 - 2. All Bid Bonds shall be on the standard form provided.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
INSTRUCTIONS TO BIDDERS**

SECTION 00-0201 – Page 2 of 6

3. The Successful Bidder's bond will be retained until he has signed the Contract and furnished the required Labor and Materials Payment and Performance Bond.
4. The Owner reserves the right to retain the bond of the two next lowest Bidders until the lowest Bidder enters into contract or until 60 days after the Bid Opening, whichever is shorter.
5. All other Bid Bonds will be returned as soon as practicable, and in accordance with Alabama State Law.
6. If any bidder refuses to enter into a Contract, the Owner will retain his Bid Bond as liquidated damages, but not as a penalty.

B. OTHER BONDS

1. Prior to signing the Contract, the Owner will require the successful bidder to secure and post a Performance Bond in the amount of 100 percent of the Contract Sum, Labor and Materials Payment Bond in the amount of 50 percent of the Contract Sum.
2. All such bonds shall be issued by Surety acceptable to the Owner. Include the costs of all such bonds in the proposed Contract Sum.

1.4 PRIOR TO BID

A. Examination of Drawings, Project Manual and Site of Work:

1. **Before submitting a Bid, each Bidder shall carefully examine the Drawings, read the Bid Documents, and visit the site of the Work. Bidders will need to coordinate with Owner to get access to the site.**
2. Each Bidder shall fully inform himself prior to bidding as to all existing conditions and limitations under which the Work is to be performed, and he shall include in his Bid a sum to cover all costs of all items necessary to perform the Work as set forth in the proposed Bid Documents.
3. Allowance will not be made to any Bidder because of lack of such examination or knowledge of the existing conditions.
4. The submission of a Bid will be construed as conclusive evidence that the Bidder has made such examination.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
INSTRUCTIONS TO BIDDERS**

SECTION 00-0201 – Page 3 of 6

B. Interpretation of Bid Documents Prior to Bidding

1. If any person contemplating submitting a Bid for construction of the Work is in doubt as to the true meaning of any part of the proposed Bid Documents, or finds discrepancies in or omissions from any part of the proposed Bid Documents, he may submit to the Owner a written request by email to rlcroy@shelbyal.com for interpretation thereof not later than three days before Bids are specified to be received.
 - a. The person submitting the request shall be responsible for its prompt delivery.
 - b. Interpretation or correction of proposed Bid Documents will be made only by Addendum and will be mailed, faxed, or delivered to each bidder of record. Each Addendum will have a location for acknowledgement of receipt and understanding of its contents. **Bids will not be considered complete if a signature of an officer of the bidding party does not appear thereon.**
 - c. The Owner will not be responsible for any other explanations or interpretations of the proposed Bid Documents.

1.5 BIDS

A. Withdrawal of Bids

1. Any Bidder may withdraw his Bid, either personally or by written request, if received by the Owner at any time prior to scheduled time for opening bids.
2. Bidder cannot withdraw his Bid for a period of 60 days after the date set for receiving thereof.
3. Each Bid shall be subject to acceptance by the Owner during this period.

B. Award or Rejection of Bids

1. **The Contract, if awarded will be awarded to the responsive low Bidder who proposes the lowest Contract Sum on the basis of the Base Bid plus any approved alternates**, subject to the Owner's right to reject any or all Bids and waive informality and irregularity in the Bids and in the bidding.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
INSTRUCTIONS TO BIDDERS**

SECTION 00-0201 – Page 4 of 6

C. Proof of Competency of Bidder

1. At the time of bid, bidder must furnish a list of previous projects successfully completed. The list provided must include specific contacts and telephone numbers for each project. All projects must meet the requirements listed in Section 00 00200.
2. Any Bidder may be required to furnish additional evidence satisfactory to the Owner that he and his proposed Subcontractors have sufficient experience in the types of work called for to assure completion of the Contract in a satisfactory manner and that their current project workload will not limit their capability.

1.6 EXECUTION OF AGREEMENT

- A. Public Works Contract.
- B. The Bidder to whom the Contract is awarded by the Owner shall, within 10 days after Notice of Award and receipt of Agreement forms from the Owner, sign and deliver to the Owner all required copies of the Contract.
- C. The Bidder to whom the Contract is awarded by the Owner shall receive five (5) sets of Construction documents. Any sets needed beyond the initial five sets may be purchased from the Owner.
- D. At or prior to the delivery of the signed Agreement, the Contractor shall deliver to the Owner the Labor and Materials Payment Bond, the Performance Bond, and the policies of insurance or Insurance Certificates as required by the Bid Documents.
- E. All bonds and policies of insurance must be approved by the Owner before the successful Bidder can proceed with the Work.
- F. Failure or refusal to furnish bonds or insurance policies or certificates in a form satisfactory to the Owner and in a timely manner, shall subject the Bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
INSTRUCTIONS TO BIDDERS**

SECTION 00-0201 – Page 5 of 6

CONTRACT TIMES

- G. Contractor agrees that the work will be substantially complete within **90** calendar days from the date indicated on the Notice to Proceed.
- H. If the Contractor is delayed, hindered or impeded at any time in the progress of the Work for any reason or by any alleged act or neglect of the Owner, or the Engineer or Architect, or by any employee of any of them or by a separate Contractor employed by the Owner, or by changes ordered in the scope of the Work, or by other causes beyond the Contractor's control, then the Contract Time may be extended by Change Order for such reasonable time as is agreed to by the Owner. However, to the fullest extent permitted by law, and notwithstanding any other provisions in the Contract Documents, and whether contemplated or not, and whether or not arising by active interference by the Owner and his agents and employees shall not be liable for any damages for delay whether for direct or indirect costs, extended home office overhead, idle or inefficient labor or equipment, cost escalations, or monetary claims of any nature arising from or attributable to delay by any cause whatsoever. The Contractor's sole and exclusive right and remedy for delay by any cause whatsoever is an extension of the Contract Time but no increase in the Contract Sum.
- I. No delay, interference, hindrance or disruption, from whatever source or cause, in the progress of the Contractor's Work shall be a basis for an extension of time unless the delay, interference, hindrance or disruption is (1) without the fault and not the responsibility of the Contractor, its subcontractors and suppliers and (2) directly affects the overall completion of the Work as reflected on the critical path of the updated Construction Schedule.
- J. The Contractor expressly agrees that the Owner shall have the benefit of any float in the construction schedule and delay to construction activities which do not affect the overall completion of the Work does not entitle the Contractor to any extension in the Contract Time.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
INSTRUCTIONS TO BIDDERS**

SECTION 00-0201 – Page 6 of 6

K. Time Extension for Unusually Severe Weather:

This provision specifies the procedure for determination of time extensions for unusually severe weather. In order for the Owner to award a time extension under this clause, the following conditions must be satisfied.

1. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
2. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

1.7 LIQUIDATED DAMAGES

Should the Contractor fail to substantially complete the work within the specified time, an assessment of \$500 per day shall be applied as damages and not as a penalty.

1.8 COORDINATION

It is the responsibility of the Contractor to schedule and coordinate any required testing and inspections.

End of Section

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
BID REQUIREMENTS**

SECTION 00-0202 – Page 1 of 2

BID REQUIREMENTS

INSURANCE REQUIREMENTS:

The Contractor shall provide certification of required coverage to the Owner within 48 hours of bid opening. Certification shall provide Owner with **10 days Notice of Cancellation**. Required insurance shall not be written for less than the following limits, or greater if required by law. Additional named insured shall be the Shelby County Commission, its officers, agents, and employees, successors or assigns.

Contractor's Liability Insurance:

1. **Worker's Compensation**
 - a. State.....Statutory
 - b. Applicable Federal.....Statutory
 - c. Employer's Liability\$500,000
 - d. Benefits required by Union laboras applicable
 - e. Voluntary Compensation.....\$100,000
 - f. Broad Form all States Endorsement

2. **Comprehensive General Liability** (including Premises - Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage; Contractual Liability; Personal Injury; all as combined single limits):
 - a. Bodily Injury/Property Damage, each occurrence.....\$1,000,000
 - b. Products/Completed Operations annual aggregate.....\$1,000,000

Products and Completed Operations Insurance shall be maintained for 3 years after the work has been completed; Property Damage liability insurance will provide X, C, or U coverage as applicable; Fellow employee Suits to be included.

3. **Comprehensive Automobile Liability** (owner, non-owned, hired): Combined single limits for bodily injury and property damage:
 - a. Bodily Injury/Property Damage, each occurrence.....\$1,000,000

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
BID REQUIREMENTS**

SECTION 00-0202 – Page 2 of 2

Indemnity:

The Contractor shall assume all liability for and shall indemnify and save harmless the Shelby County Commission, its officers, agents, and employees, and their successors and assigns, and their consultants and employees from all damages and liability for injury to any person or persons, and injury to or destruction of property, including the loss of use thereof, by reason of an accident or occurrence arising from operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them, occurring on or about the premises or the ways and means immediately adjacent, during the term of the Contract, or any extension thereof, and shall also assume the liability for injury and/or damages to adjacent or neighboring property by reason of work done under this Contract.

The insurance shall extend to and include all of the Contractor's operations, regardless of whether they may be in connection with work that is temporary, permanent, or classified as "extra work".

NOTICE OF COMPLETION:

The CONTRACTOR immediately after the completion of the contract shall give notice in writing to the COUNTY. The COUNTY, upon completion and acceptance by COUNTY of the work, shall give notice of completion of the PROJECT by advertising and publishing on the COUNTY website. The publication and advertisement shall be posted for three consecutive weeks. Final settlement shall not be made upon the contract until the expiration of 30 days after the completion of the notice.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROPOSAL FORM AND SAMPLE BID BOND**

SECTION 00-0300 – Page 1 of 3

Bids shall be submitted in triplicate.

DATE: _____

TO: Mr. Chad Scroggins
Shelby County Commission
200 West College Street
Columbiana, AL 35051

Bidding Contractor

1. Pursuant to and in compliance with the Invitation to Bid and the proposed Contract Documents relating to the construction of:

Shelby County Public Safety Radio Towers Project
Shelby County

Including Addenda _____

The undersigned, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents and with local conditions affecting the performance and costs of the Work at the place where the Work is to be completed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the Work within the time stated and in strict accordance with the proposed Contract Documents, including furnishing any and all labor and materials, and to do all work required to construct and complete said Work in accordance with the Contract Documents, for the following sum of money:

Provide design, materials and installation and as described in Section 00-1010.

Montevallo (Dogwood Site)	\$
Southeast Shelby Site (Shelby Site)	\$
Thompson (Thompson Site)	\$

Total Base Bid Amount - \$ _____

Total Base Bid Amount (text) - \$ _____

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROPOSAL FORM AND SAMPLE BID BOND**

SECTION 00-0300 – Page 2 of 3

2. I understand that Shelby County reserves the right to reject this Bid, but that this Bid shall remain open and not be withdrawn for a period of sixty (60) days from the date prescribed for its receiving.
3. There will not be a pre-bid meeting for this project. Any questions or clarifications regarding the bid should be submitted in writing and answers will be provided.
4. The Bidder, if awarded the contract, hereby agrees to commence work under this contract on or before a date to be specified in a written Notice to Proceed from the Owner and to fully complete work as specified in the required timeframe.
5. If written notice of the acceptance of this Bid is mailed or delivered to the undersigned within sixty (60) days after the date set for the receiving of this Bid, or at any other time thereafter before it is withdrawn, the undersigned shall execute and deliver the Contract Documents to the Owner in accordance with this Bid as accepted, and will also furnish and deliver to the Owner the proof of insurance coverage, within ten (10) days after personal delivery or any deposit in the mails of the notification of acceptance of this Bid.
6. Notice of Acceptance or request for additional information may be addressed to the undersigned at the address set forth in Item 7 below.
7. The names of all persons interested in foregoing Bid as principals are:

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, give legal name of corporation, state where incorporated, and names of president and secretary; if a partnership, give name of firm and names of all individual co-partners composing the firm; if Bidder or interested person is an individual, give first and last names in full.)

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROPOSAL FORM AND SAMPLE BID BOND**

SECTION 00-0300 – Page 3 of 3

NOTE: If Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

The Bidder acknowledges by his signature that he agrees to requirements contained in the Invitation to Bid and the Instructions to Bidders, and that should he fail to execute a Contract with the Owner, should the Owner award said Contract to him, that the Owner may rightfully collect the sum of the Bid Bond. The required Bid Bond is attached to this Bid.

NAME OF FIRM: _____

ADDRESS: _____

ALABAMA GENERAL CONTRACTOR'S LICENSE #: _____

SIGNED: _____

PRINT NAME: _____

TITLE: _____

Note: If a corporation, Bid must be signed by person authorized by corporation by-laws to bind it to a contract.

The entirety of this project shall be bid as a **“LUMP SUM BID”**. The Bidder agrees to perform all necessary work described in the **CONTRACT DOCUMENTS** for the project, constituted by the **LUMP SUM BID**.

FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That the contractor, as Principal, and _____
(Name of Surety)

_____, as Surety, are held and firmly bound
unto _____
(Address)

the **SHELBY COUNTY COMMISSION** as Obligee in the full and just sum of five percent (5%) of amount bid (Maximum amount - \$10,000.00), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal is herewith submitting its proposal for

PROJECT NAME: _____

The condition of this obligation is such that:

If the aforesaid Principal shall be awarded the contract and said Principal will, within the time required, enter into a formal contract and give a good and sufficient bond to secure the performance of the terms and conditions of the contract, then this obligation will be void; otherwise, the Principal and the Surety will pay unto the Obligee the difference in money between the amount of the contract as awarded and the amount of the proposal of the next lowest acceptable bidder, but not to exceed the total amount of the proposal guaranty. If no other bids are received, the full amount of the proposal guaranty shall be retained and/or recovered as liquidated damages for such default.

Witness our hands and seals this _____ day of _____,
20____.

SIGNATURE OF INDIVIDUAL BIDDER: (USE ONLY WHERE BIDDER IS AN INDIVIDUAL)

_____, Doing Business As, _____
(Name of Individual) (Business Name)

Business Mailing Address: _____

NAME OF PARTNERSHIP, JOINT VENTURE OR CORPORATION:

(Name of Partnership, Joint Venture or Corporation*) – (If Two Corporations**)

Business Mailing
Address: _____ BY: _____ (L.S.)

(Signature and Position or Title of
Officer Authorized to Sign Bids and
Contracts for the Firm)

Business Mailing
Address: _____ BY: _____ (L.S.)

(Signature and Position or Title of
Officer Authorized to Sign Bids and
Contracts for the Firm)

Business Mailing
Address: _____ BY: _____ (L.S.)

(Signature and Position or Title of
Officer Authorized to Sign Bids and
Contracts for the Firm)

* (Corporate Seal) Name of State under the laws of which the
Attest: Corporation was chartered:

(Secretary)

** (Corporate Seal) Name of State under the laws of which the
Attest: Corporation was chartered:

(Secretary)

(Name of Surety)

BY: _____
(Attorney-in-Fact)

**PROPOSAL WILL NOT BE ACCEPTED UNLESS THIS FORM FOR BID BOND IS USED,
AND BIDS WILL NOT BE CONSIDERED UNLESS THIS FORM IS SIGNED BY PRINCIPAL
AND SURETY OR A CERTIFIED CHECK IN THE PROPER AMOUNT IS FURNISHED.
CASHIER'S CHECK IS NOT ACCEPTABLE.**

PLEASE LEAVE ATTACHED IN YOUR BIDDING FORM

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT SUMMARY**

SECTION 00-1010 – Page 1 of 8

Overview

Shelby County Alabama is issuing this bid in order to construct three (3) additional communication towers into its existing network of P25 public safety communication towers in the County. This bid project consists of the engineering and construction of three (3) communication towers located in Shelby County Alabama, which includes the furnishing and installation of the communications towers, civil work, and compounds per design documents and specifications. All work shall comply with applicable Alabama and Shelby County Building Codes and ANSI/TIA/EIA Standards. As a minimum, the tower and foundation shall be designed to meet the requirements of ANSI/TIA/EIA-222-H. Shelby County will provide a Geotechnical Report for each of the proposed sites.

SITE 1 – SOUTHEAST SHELBY (Shelby Site)
(33° 5'14.40"N, 86°33'21.12"W)

Radio Communications Tower – Provide and install a 300' guyed tower. The tower and foundation must be properly designed and engineered to current standards and support current and future antenna structure needs. The tower must be designed to support two (2) 20' 700/800MHz antennas with one at the 290' centerline and one at the 270' centerline, one (1) 18' UHF antenna at 290' centerline, two (2) microwave dishes with radomes, one (1) 4' dish at 250' centerline and one (1) 6' dish at 250' centerline, and future cellular carriers at the 200' level and the 225' level. All grounding must be to R56 Specifications. The current shelter, generator, propane tank, microwave dishes, and associated equipment are located at a leased site and must be moved to the proposed site. The vendor is responsible for all fees and permit costs associated with the tower installation, site construction, and electrical work.

- Provide tower foundation design and calculations to support the tower and proposed loading.
- Construct and Install foundation, grounding, and guy anchors for 300' guyed communications tower.
- The tower must have a climbing ladder with safety climb, lightning rod, waveguide ladder, and be hot dipped galvanized.
- Supply and install FAA-approved LED tower lighting system per FAA specification AC70/7460 with remote I/O.
- Provide and install two (2) 700/800 MHz Corporate Collinear 10.5dBd (CC807-11-P) or customer-approved equivalent, standoff mounts, and appropriate line kits.
- Provide and install one (1) UHF Corporate Collinear 6dBd 450-512MHz (CC450-06-P) or customer-approved equivalent, standoff mount, and appropriate line kits.
- Move and reinstall one (1) Bird Transmit TTA, Unistrut, and appropriate line kits.
- Move and reinstall Andrew PAR6-PXA-A microwave dish and install pipe mount and appropriate line kits.
- Move and reinstall the ValuLine VHLP4-11W microwave dish and install pipe mount and appropriate line kits.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT SUMMARY**

SECTION 00-1010 – Page 2 of 8

- The contractor is responsible for providing all necessary mounting brackets, hardline, waveguide, grounding kits, and connectors required.
- The Contractor will be responsible for providing a report for line sweeps and antenna tests and shall help identify and repair problems with the coax or antenna if the initial test fails.
- The Contractor will be responsible for dish alignment and optimization.
- The Contractor will be responsible for the appropriate tower and compound warning signs.

Radio Communications Compound – The communication compound should be turn-key. The contractor is expected to perform all site preparation, foundation-related construction, tower construction, grounding requirements, electrical, and finishing.

- 11'-8" x 16'-6" Equipment Shelter Foundation
- 10'-0" x 5'-0" Generator Foundation
- 4'-0" x 10'-0" Fuel Tank Foundation
- Cable Bridge and related waveguide
- Provide and install electrical feed panel and H-Frame with a minimum of three (3) gang meter panel.
- Provide and install electrical conduit and wiring for a 200-amp service to the shelter.
- Move and install customer-owned 25Kw generator.
- Provide and install electrical conduit, wiring, and communication lines for a 25Kw standby generator.
- Move and install customer-owned 500-gallon propane tank.
- Provide and install appropriate plumbing and communication lines for a 500-gallon propane tank.
- Provide and install 60'-0" x 60'-0" x 8'-0" compound fencing with a 12'-0" drive-thru gate with appropriate grounding.
- Provide and install 8'-0" tall fencing with a walk-thru gate for guy anchors with appropriate grounding. Fencing must be installed so there is a minimum of 15'-0" clearance from the ground to the guy wires to allow equipment to clear.
- Fencing shall be vinyl coated – must be galvanized 9 gauge wire
Bottom tension wire is required.
 - 1 5/8" top rail schedule 40 pipe galvanized
 - 2" line post schedule 40 pipe galvanized
 - 3" terminal post and gate post schedule 40 pipe galvanized
 - 1 5/8" schedule 40 pipe for all gate frames galvanized
 - Three strands of galvanized barbed wire at the top
 - All post to be concreted in place 24" deep minimum in a 9" diameter concrete minimum
- Provide and install weed mat and gravel for the compound.
- Provide and install all necessary grounding/grounding Halo and drops per R56 Specifications.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT SUMMARY**

SECTION 00-1010 – Page 3 of 8

Decommission Leased Site – The customer-owned shelter, generator, propane tank, microwave dishes, and TTA's are located at **18103 HWY 145 Shelby, AL 35143 (33°04'26.06"N, 86°34'26.15"W)** will be moved to the new Southeast Shelby Site. All remaining hardlines, waveguide, mounts, cable bridges, foundations, etc. should be removed from the HWY 145 site, and the compound refinished as needed.

SITE 2 – MONTEVALLO (Dogwood Site)
33° 9'52.83"N, 86°53'11.81"W

Radio Communications Tower – Provide and install a 300' guyed tower. The tower and foundation must be properly designed and engineered to current standards and support current and future antenna structure needs. The tower must be designed to support two (2) 20' 700/800MHz antennas with one at the 290' centerline and one at 270' centerline, one (1) 20' VHF antenna at 260' centerline, two (2) microwave dishes with radomes, one (1) 4' dish at 250' centerline and one (1) 6' dish at 250' centerline, and future cellular carriers at the 200' level and the 225' level. All grounding must be to R56 Specifications. The current shelter, generator, propane tank, microwave dishes, and associated equipment are located at a leased site and must be moved to the proposed site. The vendor is responsible for all fees and permit costs associated with the tower installation, site construction, and electrical work.

- Provide tower foundation design and calculations to support the tower and proposed loading.
- Construct and Install foundation, grounding, and guy anchors for 300' guyed communications tower.
- The Tower must have a climbing ladder with safety climb, lightning rod, waveguide ladder, and be hot dipped galvanized.
- Supply and install FAA-approved LED tower lighting system per FAA specification AC70/7460 with remote I/O.
- Provide and install two (2) 700/800 MHz Corporate Collinear 10.5dBd (CC807-11-P) or customer-approved equivalent, standoff mounts, and appropriate line kits.
- Provide and install one (1) Andrew DB224-B or customer-approved equivalent, standoff mount, and appropriate line kits.
- Move and reinstall one (1) Bird Transmit TTA, Unistrut, and appropriate line kits.
- Move and reinstall Andrew PAR6-PXA-A microwave dish and install pipe mount and appropriate line kits.
- Move and reinstall ValuLine VHLP4-11W microwave dish and install the mount and appropriate line kits.
- The contractor is responsible for providing all necessary mounting brackets, hardline, waveguide, grounding kits, and connectors required.
- The Contractor will be responsible for providing a report for line sweeps and antenna tests and shall help identify and repair problems with the coax or antenna if the initial test fails.
- The Contractor will be responsible for dish alignment and optimization.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT SUMMARY**

SECTION 00-1010 – Page 4 of 8

- The Contractor will be responsible for the appropriate tower and compound warning signs.

Radio Communications Compound – The communication compound should be turn-key. The contractor is expected to perform all site preparation, foundation-related construction, tower construction, grounding requirements, electrical, and finishing.

- 11'-8" x 16'-6" Equipment Shelter Foundation
- 10'-0" x 5'-0" Generator Foundation
- 4'-0" x 10'-0" Fuel Tank Foundation
- Cable Bridge and related waveguide
- Provide and install electrical feed panel and H-Frame with a minimum of three (3) gang meter panel.
- Move and install customer-owned 11'-6" x 16'-6" x 10'-0" VFP one room concrete shelter.
- Provide and install electrical conduit and wiring for a 200-amp service to the shelter.
- Move and install customer-owned 25Kw generator.
- Provide and install electrical conduit, wiring, and communication lines for a 25Kw standby generator.
- Move and install customer-owned 500-gallon propane tank.
- Provide and install appropriate plumbing and communication lines for a 500-gallon propane tank.
- Provide and install 60'-0" x 60'-0" x 8'-0" compound fencing with a 12'-0" drive-thru gate with appropriate grounding.
- Provide and install 8'-0" tall fencing with a walk-thru gate for guy anchors with appropriate grounding. Fencing must be installed so there is a minimum of 15'-0" clearance from the ground to the guy wires to allow equipment to clear.
- Fencing shall be vinyl coated – must be galvanized 9 gauge wire
Bottom tension wire is required.
1 5/8" top rail schedule 40 pipe galvanized
2" line post schedule 40 pipe galvanized
3" terminal post and gate post schedule 40 pipe galvanized
1 5/8" schedule 40 pipe for all gate frames galvanized
Three strands of galvanized barbed wire at the top
All post to be concreted in place 24" deep minimum in a 9" diameter concrete minimum
- Provide and install weed mat and gravel for the compound.
- Provide and install all necessary grounding/grounding Halo and drops per R56 Specifications.

Decommission Leased Site – The customer-owned shelter, generator, propane tank, microwave dishes, and TTA's are located at **112 Glory Rd Montevallo, AL 35115 (33°8'16.83"N, 86°51'33.56"W)** and will be moved to the new Montevallo Site. All remaining hardlines, waveguide, mounts, cable bridges, foundations, etc. should be removed from the Glory Rd site, and the compound refinished as needed.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT SUMMARY**

SECTION 00-1010 – Page 5 of 8

SITE 3 – THOMPSON (Thompson site)
(33°13'7.55"N, 86°50'58.91"W)

Radio Communications Tower – Provide and install a 250' self-supporting tower. The tower and foundation must be properly designed and engineered to current standards and support current and future antenna structure needs. The tower must be designed to support two (2) 20' 700/800MHz antennas with one at the 240' centerline and one at the 220' centerline, two (2) microwave dishes with radomes, one (1) 4' dish at 205' centerline and one (1) 6' dish at 205' centerline, and future cellular carriers at the 200' level and the 190' level. All grounding must be to R56 Specifications. The vendor is responsible for all fees and permit costs associated with the tower installation, site construction, and electrical work.

- Provide tower foundation design and calculations to support the tower and proposed loading.
- Construct and install the foundation and grounding of a 250' self-supporting communications tower.
- The Tower must have a climbing ladder with safety climb, lightning rod, waveguide ladder, and be hot dipped galvanized.
- Supply and install FAA-approved LED tower lighting system per FAA specification AC70/7460 with remote I/O.
- Install two (2) customer-provided 700/800MHz Corporate Collinear 10.5dBd antennas (CC807-11-P), standoff mounts, and appropriate line kits.
- Provide and install two (2) standoff mounts for customer-provided antennas.
- Install one (1) customer-provided TX/RX Systems – 440 Non-Diversity TTA System (DS033452-6), connectors, and appropriate line kits.
- Provide and Install Unistrut for customer-provided TTA.
- Install two (2) customer-provided Dishes and connectors, appropriate line kits.
- Provide and Install pipe mounts for customer-provided dishes.
- The Contractor is responsible for providing all necessary mounting brackets and grounding kits.
- The Contractor will be responsible for providing a report for line sweeps and antenna tests and shall help identify and repair problems with the coax or antenna if the initial test fails.
- The Contractor will be responsible for dish alignment and optimization.
- The Contractor will be responsible for the appropriate tower and compound warning signs.

Radio Communications Compound – The communication compound should be turn-key. The contractor is expected to perform all site preparation, foundation-related construction, tower construction, grounding requirements, electrical, and finishing.

- 11'-8" x 16'-6" Equipment Shelter Foundation
- 10'-0" x 5'-0" Generator Foundation
- 4'-0" x 10'-0" Fuel Tank Foundation

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT SUMMARY**

SECTION 00-1010 – Page 6 of 8

- Cable Bridge and related waveguide
- Provide and install electrical feed panel and H-Frame with a minimum of three (3) gang meter panel.
- Provide and install electrical conduit and wiring for a 200-amp service to the shelter.
- Install customer-supplied 25Kw generator.
- Provide and install electrical conduit, wiring, and communication lines for a 25Kw standby generator.
- Provide and install 500-gallon propane tank (not rented tank).
- Provide and install appropriate plumbing and communication lines for a 500-gallon propane tank.
- Provide and install 60'-0" x 60'-0" x 8'-0" compound fencing with a 12'-0" drive-thru gate with appropriate grounding.
- Fencing shall be vinyl coated – must be fused and bonded with 9 gauge core with finished wire size 8 gauge minimum
Bottom tension wire is required.
1 5/8" top rail schedule 40 pipe black powder coated
2" line post schedule 40 pipe black powder coated
3" terminal post and gate post schedule 40 pipe black powder coated
1 5/8" schedule 40 pipe for all gate frames black powder coated
All post to be concreted in place 24" deep minimum in a 9" diameter concrete minimum
- Provide and install weed mat and gravel for the compound.
- Provide and install all necessary grounding/grounding Halo and drops per R56 Specifications.

Radio Communications Shelter – Provide and install radio communications shelter equal to VFP Exposed aggregate concrete shelters or customer-approved equivalent.

- Shelter size shall be approximately 11' x 16' x 10' single room
- Construction shall be concrete with the following:
 - 200 PSF distributed floor load on the foundation
 - 100 PSF distributed roof load
 - 150 MPH wind load
 - UL752 LEVEL 4 Ballistic rating (excluding door)
 - Interior walls sheathed with **WHITE** FRP board
 - R11 wall R-value
 - R19 ceiling R-value
 - Industrial-grade vinyl tile floor covering
 - One (1) 42" wide x 84" high insulated steel exterior door with tamper-proof hinges and hydraulic door closer
- Power Distribution
 - Two (2) MOV only lighting arrestors
 - One (1) 60 Amp, 120/240 VAC enclosed circuit breaker for lightning arrestor maintenance

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT SUMMARY**

SECTION 00-1010 – Page 7 of 8

- One (1) 200 Amp, 10,000 AIC, 120/240 VAC single phase, 60Hz, 30 space main breaker, snap-in utility power distribution panel, in a NEMA 1 surface mount enclosure
- One (1) 200 Amp, 10,000 AIC 120/240 VAC single phase, 60Hz, 30 space main breaker, snap-in technical power distribution panel, in a NEMA 1 surface mount enclosure with circuit breakers
- One (1) 200 Amp, 240 VAC, fused, single pole, NEMA 1 single throw safety switch
- One (1) 125 Amp, 120/240 VAC enclosed circuit breaker to serve as a disconnecting means for the UPS
- Six (6) 20 Amp specification grade duplex receptacles
- One (1) 20 Amp specification grade exterior ground fault duplex receptacle
- Seventeen (17) 20 Amp twist-lock receptacles with mating male plug ends
- Lighting
 - Five (5) surface-mounted LED light fixtures
 - One (1) LED exterior door light with photocell control and switch override
 - One (1) emergency/exit light
 -
- HVAC
 - Two (2) nominal 24,000 Btu/hr (2 Ton) wall-mount air conditioning units
 - Lead/lag controls on each air conditioning unit
 - Active dehumidification controls that modulate heat and air operations to control high humidity
- Alarms
 - One (1) line voltage smoke detector
 - One (1) intrusion alarm switch with form “C” contacts (1 Amps at 28 Vdc)
 - One (1) high temperature alarm
 - One (1) low temperature alarm
 - Two (2) air conditioner failure alarms
 - One (1) utility power failure alarm
 - Two (2) humidistat alarms – adjustable to 20% to 80%
- Grounding
 - Provision for the connection of grounding electrode conductor at the shelter service equipment
 - One (1) interior ground bus system
 - Two (2) isolated copper ground plates
- Accessories
 - One (1) eight port/waveguide entry panel with 4” sleeves and protective blank covers
 - Twenty-eight feet (28’) of 18” wide cable ladder/tray
 - One (1) 66 punch-down alarm block

All wiring will be installed in surface-mounted conduit or wireways if specified and will be in full compliance with ANSI/NFPA-70.

Appendix

A – Site 1 geotechnical study

B – Site 2 geotechnical study

C – Site 3 geotechnical study

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT NOTES**

SECTION 00-1020 – Page 1 of 2

1. The successful bidder, upon notification by the Owner, shall have ten (10) days to execute a contract pertaining to the scope of work as identified within this bid proposal package. Failure to do so shall result in forfeiture of the bidder's bond subject to stipulations as provided herein.
2. After the contract is signed and executed by both parties, the Owner shall issue a "Notice to Proceed" to the successful bidder.
3. Upon failure of the Contractor to complete the contract work within the specified time in Section 00-1010, the Contractor shall be assessed liquidated damages of the amount specified in Section 00-0201. Construction can begin on site any time after the date on the Notice to Proceed and must be substantially complete no later than time indicated on construction documents.
4. The contractor shall locate all utilities prior to commencing construction. Prior to the start of construction, the contractor shall field verify the locations of all pipes, power lines, and utilities to check for conflicts with the construction project. The Contractor shall notify the Owner immediately if a conflict is found prior to commencement of construction. It shall be the responsibility of the Contractor to determine the exact location of all existing utilities, whether shown on the plans or not. In the event of a conflict it shall be the responsibility of the contractor to cooperate with the applicable utility company.
5. It is the responsibility of the contractor to verify all quantities and site conditions prior to bidding. The Contractor shall notify the Owner prior to bidding of any discrepancies in the plans.
6. The Contractor shall be responsible for obtaining all construction permits, (building permit and NPDES permit if required).
7. If required, any erosion control devices required will be the responsibility of the contractor and shall be installed and maintained by the contractor per the project plans and per ADEM BMP specifications.
8. The existing access drive will remain open during construction.
9. The Contractor will be responsible for any and all aspects of job safety. The Owner will not supervise or inspect any safety feature.
10. It shall be the duty and the responsibility of the Contractor to give notification to the Owner 24 hours prior to commencement of any construction activity. Failure to notify as required may be grounds for non-acceptance.
11. Proof of Competency of Bidder – At the time of bid, bidder must furnish a list of previous similar projects successfully completed. The list provided must include specific contacts and telephone numbers for each project. Upon request prior to award of bid the Owner may request any bidder to furnish additional evidence satisfactory to the Owner that he and his proposed Subcontractors have sufficient experience in the types of work called for to assure completion of the Contract in a satisfactory manner and that their current project workload will not limit their capability. Successful Bidder shall submit a list of subcontractors to be employed on the project.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT NOTES**

SECTION 00-1020 – Page 2 of 2

12. Prior to installation or request for associated field inspections, shop drawings shall be submitted for review and approval, designed in accordance with the project plans and specifications.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
COST REPORTING AND PAYMENTS**

SECTION 00-1025 – Page 1 of 2

Part 1 – General

1.1 SECTION INCLUDES

- A. Procedural requirements for processing the following:
 - 1. Schedule of Values
 - 2. Cash flow projections for the project
 - 3. Lump Sum and Unit prices (if any)
 - 4. Payment applications
 - 5. Payments at substantial completion
 - 6. Payment at final completion
 - 7. Identification of substitutions and alternatives in payment requests
 - 8. Accounting of Change Order amounts and allowances, and similar cost and pay-out related requirements

1.2 LUMP SUM PRICE SCHEDULE

- A. General:
 - a. It is recognized that this project is a lump sum bid as listed in the Bid Form, and that the Owner - Contractor Agreement records acceptance or rejection of the bid price, either as bid or as otherwise agreed upon by the date of the Agreement.
 - b. It is recognized that the utilization of the lump sum price contain total costs as defined therein, and include each entity's total cost to include margins for overhead and profit.

1.3 PAYMENT REQUESTS

- A. General:
 - a. Except as otherwise indicated in the Contract Documents, comply with the procedures and requirements of the General Conditions, including the submittal of supporting documentation and waivers or releases of lien.
 - b. Refer to the Supplementary Conditions for requirements concerning "retainage" by Owner on payment.
 - c. Except as otherwise indicated, sequence of progress payments shall be made on a regular basis, and each must be consistent with previous applications and payments.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
COST REPORTING AND PAYMENTS**

SECTION 00-1025 – Page 2 of 2

B. Payment Application Times:

The period of construction work covered by each payment request is the period indicated in the General Conditions.

C. Final Payment Application:

- a. The administrative actions and submittals which must precede or coincide with submittal of the final payment application can be summarized as follows but not necessarily limited to these:
 - i. Completion of project closeout requirements
 - ii. Completion of items specified for payment application at time of substantial completion (regardless of whether such application was made).
 - iii. Written assurance, satisfactory to Owner, that unsettled claims will be settled and that work not actually completed and accepted will be completed without undue delay.
 - iv. Transmittal of required project construction records to Owner.
 - v. Proof, satisfactory to Owner, that taxes, fees and similar obligations of the Contractor have been paid.
 - vi. Removal of temporary facilities, services, surplus materials, rubbish and similar provisions.
 - vii. Final payment for the work to be performed under this project shall be in accordance with the advertisement of completion requirements as set forth in the State of Alabama Public Works Bid Law.

Part 2 – Products

Not Used

Part 3 –Execution

Not Used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
MEASUREMENT AND PAYMENT**

SECTION 00-1026 – Page 1 of 1

Part 1 – General

1.1 SECTION INCLUDES

- A. The entirety of the Project shall be bid lump sum price. The Bidder agrees to perform all necessary work described in the Contract Documents. Alterations to the Construction Contract will be based on the lump sum price established in the Base Bid Schedule, and the Bidder will receive no additional compensation for items covered under this scope. All materials and services provided for construction on this project shall meet or exceed the requirement of the project specifications outlined herein.
- B. Even though an item of work is included in the technical specifications, if it is not both covered herein and specifically itemized in the Bid Form, payment for it shall not be separately made. Such work shall be considered a necessary part of or incidental to its related work and shall be subsidiary obligation to the items of work being performed.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CHANGE ORDER PROCEDURES**

SECTION 00-1028 – Page 1 of 3

Part 1 – General

1.1 SECTION INCLUDES

- A. Procedural requirements for considering and processing Change Orders.
- B. Related Requirements:
 - a) Agreement: The amounts of established unit prices
 - b) Conditions of the Contract:
 - 1. Methods of determining cost or credit to Owner resulting from changes in Work made on a time and material basis.
 - 2. Contractor's claims for additional costs
 - c) Section 01025: Cost Reporting and Payments

1.2 PRELIMINARY PROCEDURES

- A. Owner or Engineer may initiate a potential change by submitting a Proposal Request to Contractor. Request will include the following:
 - a) Detailed description of the change, products, and location of the change in the Project.
 - b) Supplementary or revised drawings and specifications.
 - c) The Projected time span for making the change, and a specific statement as to whether overtime work is, or is not, authorized.
 - d) A specific period of time during which the requested price will be considered valid.
 - e) Such request is for information only, and is not an instruction to execute the changes, nor is it a mandate to stop work in progress.
- B. Provide full written data required to evaluate changes.
 - a) Maintain detailed records of work performed on a time-and-material/force account basis.
 - b) Provide full documentation to Owner upon request.
- C. Designate in writing the member of Contractor's organization:
 - a) Who is authorized to accept changes in the work
 - b) Who is responsible for informing others in the Contractor's organization of the authorization of changes in the work.
- D. Owner will designate in writing the person who is authorized to execute Change Orders.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CHANGE ORDER PROCEDURES**

SECTION 00-1028 – Page 2 of 3

1.3 CONSTRUCTION CHANGE DIRECTIVES

- A. In absence of total agreement on the terms of a Change Order, the Owner may prepare and issue a Construction Change Directive directing a change in the work, for subsequent inclusion in a Change order.
 - a) Construction Change Directive will describe changes in the Work, and describe the method of determining any change in the Contract Sum or Contract Time, or both
 - b) The Owner will sign construction Change Directive
- B. Upon receipt of a Construction Change Directive, Contractor shall do the following:
 - a) Promptly proceed with the change in the work involved
 - b) Promptly advise the Owner 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.
- C. A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them.
 - a) Such agreement shall be effective immediately and shall be recorded as a Change Order
 - b) If Contractor does not respond promptly or if he disagrees with the Construction Change Directive, he shall comply with General Conditions.
- D. A Construction Change Directive shall be processed in compliance with requirements of the General Conditions.

1.4 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal, and for each unit price that has not previously been established, with sufficient substantiating data to allow Owner to evaluate the quotation.
- B. On request provide additional data to support time and cost computations:
 - a. Labor required
 - b. Equipment required:
 - i. Recommended source of purchase and unit cost
 - ii. Quantities required
 - c. Taxes, insurance and bonds
 - d. Credit for work deleted from Contract, similarly documented
 - e. Overhead and profit, for subcontractor and General Contractor separately
 - f. Justification for any change in Contract Time

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CHANGE ORDER PROCEDURES**

SECTION 00-1028 – Page 3 of 3

- C. Support each claim for additional costs, and for work done on a time-and – material/force account basis, with documentation as required for a lump sum proposal, plus the following additional information:
 - a. Name of the Owner's authorized agent who ordered the Work, and date of the order
 - b. Dates and hours work was performed, and by whom
 - c. Time record, summary of hours worked, and hourly rates paid
 - d. Receipts and invoices for:
 - e. Equipment used, listing dates and times of use
 - f. Products used, listing of quantities
 - g. Subcontracts
 - h. Overhead and Profit, taxes, insurance
- D. Document requests for substitutions for Products as specified elsewhere in Division One

1.5 PREPARATION OF CHANGE ORDERS

- A. Contractor will prepare each Change Order.
- B. Change Order will describe change in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.6 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time. Revise sub-schedules to show changes for other items of Work affected by the changes.
- C. Upon completion of Work under a Change Order, enter pertinent changes in Record Documents.

PART 2 -- PRODUCTS
Not Used

PART 3 – EXECUTION
Not Used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT MEETINGS**

SECTION 00-1200 – Page 1 of 2

Part 1 – General

1.1 PRE-CONSTRUCTION MEETING

- A. Schedule meeting within the early stages of Construction as determined by the owner.
- B. Suggested Agenda: Contractor shall prepare written material, distribute lists, and discuss the following:
 - a. Identification of major Subcontractors and Suppliers
 - b. Projected construction schedule (To be supplied in bar chart format by the Contractor prior to beginning work)
 - c. Critical work sequencing
 - d. Major Equipment deliveries and priorities
 - e. Project coordination, including designation of responsible persons
 - f. Procedures for, and processing of:
 - i. Field decisions
 - ii. Proposal requests
 - iii. Submittals
 - iv. Change orders
 - v. Applications for payments
 - g. Adequacy of distribution of Contract Documents
 - h. Procedures for maintaining Record Documents
 - i. Use of premises
 - i. Work and storage areas
 - ii. Owner's requirements
 - j. Construction facilities, construction aids, and controls
 - k. Temporary utilities
 - l. Safety and first aid procedures
 - m. Security procedures
 - n. Housekeeping procedures
 - o. Working days/hours
 - p. Erosion control and stormwater management

1.2 PROGRESS MEETINGS

- A. Schedule progress meetings as determined by the owner when they are necessary.
- B. Suggested Agenda:
 - a. Review and approval of minutes of previous meeting
 - b. Review of work progress since previous meeting
 - c. Field observations, problems, conflicts.
 - d. Problems which impede construction schedule

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT MEETINGS**

SECTION 00-1200 – Page 2 of 2

- e. Corrective measures and procedures required to regain projected schedule
- f. Revisions to construction schedule
- g. Plan progress and schedule for succeeding work period
- h. Coordination of schedules
- i. Review submittal schedules; expedite as required
- j. Review proposed changes for:
 - i. Effect on construction schedule and on completion date
 - ii. Effect on other contracts of the Project
- k. Other Business

Part 2 – Products

Not Used

Part 3 – Execution

Not Used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONSTRUCTION SCHEDULES**

SECTION 00-1310 – Page 1 of 2

Part 1 – General

1.1 SECTION INCLUDES

Procedures for preparation, submission and review of “Horizontal Bar Type” Progress or Construction Schedules for the entire project, and bi-weekly updating.

1.2 FORM OF SCHEDULES

Prepare Construction Schedules in the form of a horizontal bar chart prior to commencing the work. Work shall not commence until the Contractor submits the project schedule for review.

1.3 CONTENT OF SCHEDULES

- A. Construction Schedules shall include the following:
 - a. Complete sequence of construction by activity.

1.4 SUBMITTALS

- A. Submit Design and Construction Schedule within five (5) calendar days after date of a contract award
 - a. Owner will review design and schedule and return a copy marked approved or with comments.
 - b. If required, resubmit for final review.

1.5 DISTRIBUTION

- A. Distribute copies of approved Design and Construction Schedule to job file and other concerned parties.
- B. Instruct all recipients to report any inability to comply and provide detailed explanation with suggested remedies.

1.6 DURATION AND MILESTONES

- A. The Contract Time shall commence to run on the date of issuance of the Notice to Proceed. The project shall be substantially completed within 90 calendar days after the Contract Time commences to Run. Upon reaching substantial completion, the successful contractor will be issued a letter stating the project has reached substantial completion, the work will be inspected, and a punch list will be generated and forwarded.
- B. The Contractor shall prosecute the work diligently and will avoid interfering with or delaying any progress of any other Contractors or the Owner’s own forces on other project related work.
- C. The Contractor shall be allowed 30 calendar days from the date of award to

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONSTRUCTION SCHEDULES**

SECTION 00-1310 – Page 2 of 2

procure all required materials after such period, contract time charges shall commence. Contract time specified in Section 00-201 will be allowed.

Part 2 - Products

Not used

Part 3 - Execution

Not used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
SHOP DRAWINGS, PRODUCT DATA, SAMPLES**

SECTION 00-1340 – Page 1 of 1

Part 1 – General

1.01 SECTION INCLUDES

Procedures for processing Shop Drawings, Product Data, Office Samples, and Certificate of Compliance

1.02 GENERAL PROCEDURES

- A. The approval of submittals does not constitute a Change Order.
- B. All items shall be submitted under Contractor's transmittal letter. The Contractor shall stamp each submittal with his submittal stamp, and shall include the following information:
 - 1. Project by title and Owner's project number
 - 2. Work and products by Specifications Section and Article number
 - 3. Contractor shall submit one copy of every submittal or sample to Owner for review.
- C. Resubmittals: When Owner requires that a submittal be "resubmitted," comply with the requirements of this Section and identify changes made since the previous submittal.
- D. Notify Owner in writing at time of submittal of any deviations from the requirements of Contract Documents.
- E. Make all submittals far enough in advance of scheduled dates for installation to provide sufficient time for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing deliver.
 - 1. Review Time: In scheduling work activities, allow at least seven (7) working days from Owner's receipt for his review. The seventh day shall be defined as the first day of return to the Contractor.
 - 2. Delays caused by the tardiness of the Contractor in preparing and in forwarding of submittals will not be an acceptable basis for extension of the Contract completion date nor for consideration of alternate products that do not meet the specified requirements of this Project Manual.
- F. Starting work which requires submittals to be approved by Owner before Owner approves and returns the submittals to Contractor shall be at Contractor's risk.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
STORAGE AND PROTECTION**

SECTION 00-1620 – Page 1 of 2

Part 1 – General

1.01 GENERAL STORAGE

- A. Store products immediately on delivery in accordance with the manufacturer's printed instructions, with seals and labels intact and legible, and protect until installed in the work.
- B. Arrange storage in a manner to provide easy access for inspection.
- C. Provide protection and restrict access to project site, in-place work, and stored materials from vandalism.

1.02 EXTERIOR STORAGE

- A. Provide substantial platforms, blocking or skids to support fabricated products above the ground to prevent soiling or staining.
- B. Cover products that are subject to discoloration, deterioration, or oxidation from exposure to the elements with impervious sheet coverings or sheds constructed of lumber. Provide adequate ventilation to avoid condensation.
- C. Any mechanical or electrical equipment that is to be stored at the Project site shall be protected and periodically maintained in accordance with these Specifications (all applicable sections) and the manufacturer's recommendations. If warehousing of any products to be used in the work is required as a result of inclement weather conditions or other special product needs, all costs shall be borne by the Contractor.
- D. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- E. Provide surface drainage to prevent flow or ponding of rainwater.
- F. Prevent mixing of refuse or chemically injurious materials or liquids.
- G. Maintain a periodic system of inspections of stored products on a scheduled basis to assure that:
 - a. Condition of storage facilities is adequate to provide required conditions.
 - b. Required environmental conditions are maintained on a continuing basis

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
STORAGE AND PROTECTION**

SECTION 00-1620 – Page 2 of 2

- c. Surfaces of products exposed to elements are not adversely affected. NOTE: any weathering of products, coatings and finishes is not acceptable under requirements of the Contract Documents.

1.03 PROTECTION AFTER INSTALLATION

- A. Provide substantial coverings to protect installed products from damage from subsequent operations and vandalism. Remove when no longer needed, prior to completion of work.
- B. Control traffic to prevent damage to equipment and surfaces.
- C. Provide coverings to protect finished surfaces from damage.
- D. In other areas subject to foot traffic, secure heavy paper, sheet goods or other materials in place.
- E. For movement of heavy products, lay planking or similar materials in place.
- F. Prohibit traffic of any kind across grassed, seeded, or landscaped areas.

Part 2 – Products

Not Used

Part 3 – Execution

Not Used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONTRACT CLOSEOUT**

SECTION 00-1700 – Page 1 of 3

Part 1 – General

1.01 SUBSTANTIAL COMPLETION

- A. When the project is considered to be substantially complete, submit written notice to the Owner that the project or designated portion is substantially complete. Include a list of items to be completed.
- B. Within a reasonable time, Owner will inspect to determine status of completion, and compile a punch list of items to be completed and corrected. If Owner determines that Work is not substantially complete, he will immediately notify Contractor in writing. The Owner will generally point out his reasons; he will not be obligated to give an exhaustive list of discrepancies.
- C. Contractor's Duties are to remedy the deficiencies and send the Owner another written Notice of Substantial Completion.
- D. Owners Actions will be to re-inspect the work and issue a Certificate of Substantial Completion when he considers it to be warranted.

1.02 OWNER OCCUPANCY

- A. Owner's Action: Occupy the Project, or designated portion of the Project, in accordance with provisions of the Certificate of Substantial Completion.
- B. Contractor's Duties:
 - a. Obtain Certificate of Occupancy if required by local building codes authority.
 - b. Obtain consent of insurance company or companies to keep insurance in force during partial occupancy by the Owner.
 - c. Make corrections listed on punch list attached to Certificate of Substantial Completion.
 - d. Perform final clean up.

1.03 FINAL COMPLETION

- A. When this Project is considered to be complete, Contractor shall submit certification indicating the following:
 - a. Contact Documents have been reviewed and Work has been inspected for compliance with those Documents.
 - b. Work has been completed in accordance with Contract Documents.
 - c. All punch list items have been corrected
 - d. Work is complete and ready for final inspection.
 - e. Appropriate notifications have been filed with Governmental Agencies (attach copies.)

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONTRACT CLOSEOUT**

SECTION 00-1700 – Page 2 of 3

B. Owner's actions during final inspection:

- a. Inspect to verify the status of completion with reasonable promptness
- b. Notify Contractor in writing about any Work considered to be incomplete or defective.

C. Contractor's Duties: take immediate action to correct deficiencies, and send certification to Owner that Work is complete.

D. Owner's duties: determine when Work is acceptable then request Contractor to make closeout submittals.

1.04 RE-INSPECTION FEES

Should status of completion of work require re-inspection by Engineer due to failure of work to comply with Contractor's claims on initial inspection, Owner will deduct the amount of Engineer's compensation for re-inspection services from final payment to Contractor.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS REQUIRED

A. Documents required by State Licensure inspectors and other authorities having jurisdiction.

B. Project Record Documents: Comply with Section 01720

C. Warranties and Bonds: Comply with Section 01740

D. Evidence of Payment and Release of Liens: Comply with requirements and Conditions of the Contract

E. Consent of Surety to Final Payment

F. Certificates of Insurance for Products and Completed Operations: Comply with Supplementary Conditions

G. Test Results: Complete, dated test results of various systems signed by persons authorized to sign for the qualified testing agencies that conducted tests.

H. Closeout documents shall require written acceptance by the governing agency.

1.06 STATEMENT OF ADJUSTMENT OF ACCOUNTS

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONTRACT CLOSEOUT**

SECTION 00-1700 – Page 3 of 3

- A. Submit a final statement to Owner indicating all adjustments to the Contract Sum. Include the following:
- a. Original Contract Sum
 - b. Previous change orders
 - c. Changes under allowances
 - d. Changes under unit prices.
 - e. Deductions for uncorrected work
 - f. Penalties and bonuses
 - g. Deductions for liquidated damages.
 - h. Deductions for re-inspection fees
 - i. Other adjustments to Contract Sum
 - j. Total Contract Sum, as adjusted.
 - k. Previous payments.
 - l. Sum remaining due
- B. If required, a final Change Order will be prepared reflecting approved adjustments to Contract Sum that were not previously made on Change Orders.

1.07 FINAL APPLICATION FOR PAYMENT

Submit final Application for Payment in accordance with procedures and requirements of the Conditions of the Contract and Alabama State Law.

1.08 FINAL PAYMENT

Owner will make final payment.

1.09 POST-CONSTRUCTION INSPECTION

Prior to expiration of one year from the Date of Substantial Completion, the Owner will make a visual inspection of the Project to determine whether correction of Work is required, in accordance with the Conditions of the Contract.

The Owner will promptly notify the Contractor, in writing, of any observed deficiencies. Contractor shall then correct deficiencies promptly.

Part 2 – Products

Not Used

Part 3 – Execution

Not Used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT RECORD DOCUMENTS**

SECTION 00-1720 – Page 1 of 2

Part 1 – General

1.01 SECTION INCLUDES

- A. Procedural requirements for maintaining documents and samples at the site as required in the General Conditions.
- B. The General Conditions require the Contractor to maintain a record copy of the following for Owner's review:
 - a. Drawings
 - b. Specifications and Schedules (Project Manual)
 - c. Addenda
 - d. Change Orders and other documents which modify original document
 - e. Approved shop drawings, product data and samples
 - f. Records of all changes made during construction
- C. In addition to the above, the Contractor shall maintain at the site a record copy of the following where applicable:
 - a. Field test records
 - b. Manufacturer's certificates
 - c. Inspection certificates

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain Record Documents on site, apart from the documents used for construction.
- B. Label and file Record Documents in sequence with section number listings in Table of Contents of this Project Manual. Label each document "Project Record" in the lower right hand corner in neat, large printed letters.
- C. Maintain Record Documents in clean, dry, legible condition. Do not use Record Documents for construction purposes.
- D. Keep Record Document and samples available for inspection by Owner.

1.03 RECORDING

- A. Record information concurrently with construction progress. DO NOT conceal work until required information has been recorded.
- B. Contract Drawings and Shop Drawings: Legibly mark each item to record actual construction, including the following:
 - a. Depth of footings in relation to finish first floor level.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PROJECT RECORD DOCUMENTS**

SECTION 00-1720 – Page 2 of 2

- b. Measured horizontal and vertical locations of underground utilities, valves, etc. referenced to the original survey line. Show direction of flow of pipe and depth of piping underground.
 - c. Field changes of dimensions and details
 - d. Changes made by Contract Modifications
 - e. Details not on original Contract Drawings
- C. Project Manual: Legibly mark to record actual construction , including the following:
 - a. On appropriate pages, record changes made by Addenda, Change Orders and other modifications
 - b. On appropriate pages, enter trade name, manufacturer, catalog number, and name of supplier of each product and item actually installed, if different from that specified
 - c. Other items installed but not originally specified

1.04 RECORD DRAWINGS

- A. Record Drawings that are required for Owner's records, shall be recorded on blueprints (other than the construction drawings) kept on the job by the Contractor. Do not use Record Drawings for construction purposes.
- B. The Contractor shall transfer all changes recorded on construction drawings to the Record Drawings. All information shall be recorded neatly and legibly.

1.05 SUBMITTALS

- A. At Contract Closeout, deliver Record Documents and samples, including Record Drawings, to Owner.
- B. Submit Record Documents under cover of a transmittal letter containing:
 - a. Date
 - b. Project title and number
 - c. Contractor's and subcontractor's names and addresses
 - d. Title and number of each Record Document
 - e. Certification that each document submitted is complete and accurate
 - f. Signature of Contractor or his authorized representative

Part 2 – Products

Not Used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
WARRANTIES AND BONDS**

SECTION 00-1740 – Page 1 of 2

Part 1 – General

1.01 SECTION INCLUDES

Provide warranties and bonds required for specific products: **All materials that will become a permanent part of this project shall require a written manufacturer's warranty.**

1.02 FORM OF SUBMITTALS

- A. Submit by electronic copy.
- B. Label cover of each binder with typed or printed title "WARRANTIES AND BONDS" with title of Project; name, address, and telephone number of contractor; and name of responsible principal.
- C. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section that detailed the name of the product or work item.
- D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing.
 - a. Provide full information using separate typed sheets as necessary
 - b. List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

1.03 PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

1.04 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents to Owner after acceptance.
- B. Make other submittals to Owner after date of Substantial Completion, prior to final Application for Payment.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
WARRANTIES AND BONDS**

SECTION 00-1740 – Page 2 of 2

- C. For items of work when acceptance is delayed beyond date of Substantial Completion, submit documents to owner after acceptance, listing the date of acceptance as the beginning of the warranty period.

1.05 WARRANTY PERIOD

- A. The warranty period shall continue for a period of one (1) year from final acceptance of the work. All materials of construction, installation, and workmanship shall be covered under this warranty.
- B. Roof warranty shall be as specified in roofing section.
- C. Provide General Contractors 5 year Roofing Guarantee.

Part 2 – Products

Not Used

Part 3 –Execution

Not Used

END OF SECTION



SHELBY COUNTY, ALABAMA
PUBLIC WORKS CONTRACT
For Projects Over \$100,000
Act 97-225

THIS AGREEMENT, entered into as of this _____ day of _____, 2024 by and between SHELBY COUNTY, ALABAMA, a political subdivision of the State of Alabama (hereinafter called the COUNTY) and _____ (hereinafter called the CONTRACTOR). This _____ agreement concerns the _____ Project as described in the noted attached plans index, specifications index, project issued addenda 1,2,3,4 & 5, and the contractor's bid (herein called the PROJECT).

WITNESSETH THAT:

WHEREAS, the COUNTY is currently involved in the planned construction of the PROJECT as specified in design and bid specifications dated _____ which said design and bid specifications are incorporated into this Contract by reference and made part and parcel hereof as fully as if set out herein. (See also attached bid by CONTRACTOR on the _____, 2024) and

WHEREAS, CONTRACTOR submitted the lowest responsive and responsible bid for the construction of the PROJECT; and

WHEREAS, the COUNTY desires to engage and contract with the CONTRACTOR to provide technical, professional, and construction services and to construct and complete the PROJECT herein described; and

WHEREAS, the CONTRACTOR desires to contract to provide technical, professional, and construction services and to complete the construction of the PROJECT herein described:

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein, the COUNTY and the CONTRACTOR do hereby mutually agree, covenant, and contract as follows:

Section 1. CONTRACTOR

The COUNTY agrees to engage the CONTRACTOR, and the CONTRACTOR hereby agrees, to perform the construction services hereinabove and hereinafter set forth, and to construct the PROJECT described within this Contract in accord with the accompanying plans and specifications in a good, competent, and workmanlike manner as requested and determined by the COUNTY and in strict compliance with the design and bid specifications for such PROJECT as referenced in other portions of this Contract.

The CONTRACTOR will supply to the COUNTY prior to the commencing of work the following documents, together with any other documents as are required by Alabama law:

- A) Certificate of Insurance (with unconditional cancellation clause), said insurance in the amounts as specified in the contract documents and as approved by the COUNTY.
- B) Section 84 Business License, Applicable City Business License and all other licenses required by law to complete this project
- C) The CONTRACTOR will furnish to the COUNTY a performance bond equaling the total bid amount of the PROJECT payable to the COUNTY, which said bond shall be in form and substance as approved by the COUNTY. The CONTRACTOR shall also execute and furnish to the COUNTY a payment bond securing the CONTRACTOR'S obligation to pay for all labor, materials, or supplies for work done pursuant to this contract, which said payment bond shall be in an amount equal to fifty percent (50%) of the total contract price and shall be in form and substance as approved by the COUNTY. Said payment bond shall also provide bonded coverage to cover and to compensate for reasonable attorney fees incurred by a successful party in civil actions brought on the bond and ordered to be paid by a court of competent jurisdiction.
- D) The CONTRACTOR shall comply with all applicable laws, ordinances, and codes of the U. S. Government, the State of Alabama, any relevant municipality, and the COUNTY, and, specifically and without limitation, shall comply with all provisions of the Beason-Hammond Alabama Taxpayer and Citizen Protection Act, commonly referred to as the Immigration Act, and amendments thereto adopted from time to time during the performance of this Contract, and shall document CONTRACTOR'S compliance with said law and submit to the COUNTY or at the direction of COUNTY any and all affidavits and proof as are from time to time required by law or required by COUNTY.

The CONTRACTOR, by the execution of this Contract, certifies and confirms that it is, at the time of the signing of this document, in full compliance with the aforesaid Beason-Hammond Alabama Taxpayer and Citizen Protection Act, and further agrees that upon request from the COUNTY it will execute and file and take such action as is deemed by the COUNTY to be necessary to verify the CONTRACTOR's continuing compliance therewith.

Section 2. Scope of Services

The CONTRACTOR shall provide all construction services, work and labor, and other professional and technical services to complete the PROJECT herein described, which shall include, but not necessarily be limited to, the activities, plans, and specifications described in the construction drawings, specifications, bid and related documents.

Section 3. Time of Performance

The CONTRACTOR shall begin work on the PROJECT upon the execution of this Contract and will continue, uninterrupted, for a period of time not to exceed _____ (_____) working days beginning after receiving Notice to Proceed from the COUNTY. Said work to be completed in a good and workmanlike manner by the CONTRACTOR within the period of time specified.

Section 4. General Provisions

- (a) *Personnel.* The CONTRACTOR warrants that it has the expertise, professional personnel, and adequate work force capable of performing this Contract, as called for herein, in a satisfactory and proper manner, in accord with highest industry standards, or will secure the services of such personnel as may be required to perform such services, construct said PROJECT, and perform its obligations pursuant to this Contract.
- (b) *Office Space.* The CONTRACTOR agrees to provide and maintain the office space and facilities required to perform all services as called for under this Contract, at no expense to the COUNTY.
- (c) *Subcontracts.* None of the work or services covered by this contract shall be subcontracted without the prior approval of the COUNTY. Any work or services subcontracted hereunder shall be specified by written contract or agreement and shall be subject to each provision of this contract.
- (d) *Access to Materials.* The COUNTY agrees to make available to the CONTRACTOR, upon request, any maps, documents, and planning materials or any other information in its possession or otherwise readily available, which has a direct bearing on the PROJECT, at no expense to the CONTRACTOR.

(e) *Communications.* The representatives of the COUNTY and the CONTRACTOR to whom communications regarding the PROJECT which is the subject of this contract should be directed are as follows:

(1) COUNTY: Trey Gauntt, PE, Chief Facilities Management Officer,
Shelby County Department of Facilities and General Services
280 McDow Road
Columbiana, Alabama 35051
(205) 670-6461
Email: trey@shelbyal.com

(2) CONTRACTOR: _____

Phone _____

(f) The CONTRACTOR shall perform the work and complete the PROJECT in accord with all laws of the State of Alabama, all laws of the United States of America, relevant municipal laws, and to the satisfaction of the COUNTY. Work will be performed by the CONTRACTOR under the direct supervision of the representative of the COUNTY, who will have sole authority of deciding if work conditions, such as weather, temperature, roadway conditions, and other details of construction are complied with by the CONTRACTOR. At the discretion of the COUNTY, work may be stopped or delayed at any time until conditions are appropriate, in the opinion of the COUNTY, in order that optimum results and work quality may be obtained from the PROJECT in the best interest of the COUNTY. The decision of the COUNTY upon any questions connected with the performance of this Contract or any failure or delay in the prosecution of the work by the CONTRACTOR shall be final and conclusive.

(g) Attachment A - Supplemental Conditions is hereby incorporated as part of this contract.

Section 5. Compensation and Method of Payment

(a) For services satisfactorily rendered under this Contract and approved by COUNTY, the COUNTY agrees to pay the CONTRACTOR for fulfillment of the terms and conditions of this Contract as specified in the specifications and bid documents. The total amount to be paid under this section for services shall not exceed _____ dollars and _____ cents (\$_____). Such payment shall, if due, be made monthly at the end of each calendar month, but in no case later than forty-five (45) days after the acceptance by COUNTY that the estimate and terms of the contract providing for partial payment have been fulfilled. In preparing estimates, the material delivered on the site, materials suitably store, and insured off-site, and preparatory work done may be taken into consideration by COUNTY. If the amount due by COUNTY is not in dispute and the amount payable is not paid within the forty-five (45) day period, the CONTRACTOR shall be entitled to interest from COUNTY at the rate assessed for underpayment of taxes under Section 40-1-44(a), Code of Alabama 1975, on the unpaid balance due. Interest payments shall not be due on payments made

after the forty-five (45) day period because of administrative or processing delays at the close of the fiscal year. In making the partial payments, there shall be retained not more than five percent (5%) of the estimated amount of work done and the value of materials stored on the site or suitably stored and insured off-site, and after fifty percent (50%) completion has been accomplished and approved by COUNTY, no further retainage shall be withheld. The retainage as set out herein shall be held until final completion and acceptance of all work covered by the contract. Retainage shall be held until all work has been completed to COUNTY's satisfaction. The CONTRACTOR immediately after the completion of the contract shall give notice in writing to the COUNTY. The COUNTY, upon completion and acceptance by COUNTY of the work, shall give notice of completion of the PROJECT by advertising and publishing on the COUNTY website. The publication and advertisement shall be posted for three consecutive weeks. Final settlement shall not be made upon the contract until the expiration of 30 days after the completion of the notice.

(b) PROVISIONS OUTLINING THE SOURCE OF SUFFICIENT FUNDS TO BE UTILIZED BY COUNTY TO FULFILL COUNTY'S OBLIGATIONS UNDER THIS CONTRACT (indicate which applies by entering an appropriate mark opposite the following):

 X The funds to be utilized by COUNTY to fulfill its obligation under this contract are funds which are held by COUNTY at the time of the execution of this contract or will become available at a date following the execution of the contract.

 The source of funds to be utilized by COUNTY in fulfilling its obligation under this contract is a grant, award, or direct reimbursement from the State, federal government, or other source which will not become available until after the execution of this contract, and the provision of this contract requiring prompt payment shall not apply until COUNTY is in receipt of the funds as provided in the contract. Upon receipt of such funds, the forty-five (45) day requirement specified in this contract shall commence and shall be enforceable as provided herein.

Section 6. Terms and Conditions

(a) *Termination of Contract for Cause/Breach of Contract.* If through any cause the CONTRACTOR shall fail to fulfill in a timely and proper manner its obligations under this Contract, or if the CONTRACTOR shall violate any of the covenants, agreements, or stipulations of this Contract, the COUNTY shall thereupon have the right to terminate this Contract by giving written notice to the CONTRACTOR of such termination and specifying the effective date of such termination. In such event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports, or other materials prepared by the CONTRACTOR under this Contract or during the construction performance, shall, at the option of the COUNTY, become its property.

Notwithstanding the above, the CONTRACTOR shall not be relieved of liability to the COUNTY for damages sustained by the COUNTY by virtue of any breach of the Contract by the CONTRACTOR, and the COUNTY may withhold any payments to the CONTRACTOR for the

purpose of set-off until such time as the exact amount of damages due the COUNTY from the CONTRACTOR is determined.

(b) *Termination for Convenience of the COUNTY.* The COUNTY may terminate this Contract at any time, with or without just cause, by giving written notice to the CONTRACTOR of such termination and specifying the effective date thereof, at least thirty (30) days prior to the effective date of such termination. In such event, all finished or unfinished documents and other materials, as described in the above clause, shall, at the option of the COUNTY, become its property. If the Contract is terminated by the COUNTY as provided in this subparagraph (b), the CONTRACTOR shall be entitled to receive just and equitable compensation for any work satisfactorily completed on said PROJECT.

(c) *Changes.* The COUNTY may, from time to time, request changes of the CONTRACTOR in the scope of services to be performed hereunder. Such changes, or renegotiation, including any increase or decrease in the amount of the CONTRACTOR's compensation, which is mutually agreed upon by and between the COUNTY and the CONTRACTOR, shall be incorporated in written amendments to this Contract. The Contract can be extended under mutually agreed provisions through a written amendment to this document.

(d) *Assignability.* The CONTRACTOR shall not assign any interest in this Contract, and shall not transfer any interest in the same whether by assignment or novation, without the prior written consent of the COUNTY provided, however, that claims for money by the CONTRACTOR from the COUNTY under this Contract may be assigned to a bank, trust company, or other financial institution without such approval. Written notice of any such assignment or transfer shall be promptly furnished to the COUNTY.

This Contract shall be binding upon and inure to the benefit of any successor to the COUNTY and such successor shall be deemed substituted for the COUNTY under the terms of this Contract. As used in this Contract, the term "successor" shall include any person, firm, employer, or other business entity which at any time, whether by merger, purchase, or otherwise, which assumes or is assigned responsibility of the COUNTY for the covered PROJECT. This Contract shall also be binding upon and inure to the benefit of the CONTRACTOR, his successors, executors, and administrators.

(e) *Reports and Information.* The CONTRACTOR, at such times and in such forms as the COUNTY may require, shall furnish to the COUNTY such periodic reports as it may request pertaining to the work or services undertaken pursuant to this Contract, the costs and obligations incurred or to be incurred in connection therewith, and any other matters covered by this Contract.

(f) *Findings Confidential.* All of the reports, information, data, etc., given to or prepared or assembled by the CONTRACTOR under this Contract are confidential, and the CONTRACTOR agrees that they shall not be made available to any individual or organization without the prior written approval of the COUNTY.

(g) *Waiver of Trial by Jury.* The parties to this Contract desire to avoid the additional time and expense related to a jury trial of any disputes arising hereunder. Therefore, it is mutually agreed by and between the parties hereto, and for their successors and assigns, that they shall and hereby waive trial by jury of any claim, counterclaim, or third-party claim, including any and all claims of injury or damages, brought by either party against the other arising out of or in any way connected with this Contract and the relationship which arises herefrom. The parties acknowledge and agree that this waiver is knowingly, freely, and voluntarily given, is desired by both parties, and is in the best interest of both parties.

(h) *Compliance with Local Laws.* The CONTRACTOR shall, throughout the performance of this Contract, comply with all applicable laws, ordinances, and codes of the U. S. Government, the State of Alabama, any relevant municipality, and the COUNTY, and, specifically and without limitation, shall comply with all provisions of the Beason-Hammond Alabama Taxpayer and Citizen Protection Act, commonly referred to as the Immigration Act, as amended from time to time during the performance of this Contract, and shall document CONTRACTOR's compliance with said law and submit to the COUNTY or at the direction of COUNTY any and all affidavits and proof as are from time to time required by law or required by COUNTY .

(i) *Audits and Inspection/Access to Records/Record Retention.* At any time during normal business hours, with prior arrangement and as often as the COUNTY may deem necessary, the CONTRACTOR shall make available to the COUNTY for examination all of its records with respect to matters covered by this Contract and will permit the COUNTY to audit, examine, and make excerpts or transcripts from such records, and to make audits of all contracts, invoices, materials, payrolls, records of personnel, conditions of employment, and other data relating to all matters covered by this Contract.

The CONTRACTOR shall retain all books, documents, papers, and records which are directly pertinent to this contract for a period of six (6) years following completion of the contracted work and expiration of the Contract, unless written permission to destroy them is granted by the COUNTY.

(j) *Interest of Members of the COUNTY and Other Local Public Officials.* No officer, member, or employee of the COUNTY and no member of its governing body, and no other public official of the governing body of the locality or localities in which the PROJECT is situated or being carried out, who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of this PROJECT, shall participate in any decision relating to this Contract which affects his personal interest or the interest of any corporation, partnership, or association in which he is directly or indirectly interested or has any personal or pecuniary interest, direct or indirect, in this Contract or the proceeds thereof. The CONTRACTOR shall take appropriate steps to assure compliance.

(k) *Interest of the CONTRACTOR.* The CONTRACTOR covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Contract. The CONTRACTOR further covenants that, in the performance of this Contract, no person having any such interest shall be employed.

Section 7. Additional Services of CONTRACTOR

If authorized in writing by the COUNTY, the CONTRACTOR shall furnish additional services that are not considered as an integral part of the PROJECT plans and specifications. Under this Contract, all costs for additional services will be negotiated as to activities and compensation. Upon mutual written agreement between the COUNTY and the CONTRACTOR, and written authorization from the COUNTY to proceed, the CONTRACTOR will provide the additional service.

Section 8. Tax Responsibilities of CONTRACTOR

The parties to this Contract agree that the CONTRACTOR is an independent firm or person and that the relationship created by this Contract is that of an independent contractor. Further, the parties agree that the CONTRACTOR is not an employee of the COUNTY, and will not be treated as such for federal income tax purposes. In this regard, the CONTRACTOR acknowledges and accepts all tax responsibilities imposed by federal income tax laws, and any applicable state income tax laws, on self-employed persons, including, but not limited to, the responsibility of withholding from income the required amounts for federal income taxes, Social Security taxes, federal unemployment tax, and applicable state and local income taxes.

Section 9. Non-Exclusive Contract

The CONTRACTOR shall devote its time, attention, and energies to the fulfillment of this Contract. If, after satisfying its responsibilities to the COUNTY, the CONTRACTOR desires to render similar services to any other persons, or on behalf of any other firms, associations, or corporations, then the CONTRACTOR may contract for such services; provided, however, that in the event that the rendering of such additional services by the CONTRACTOR interferes, in the opinion of the COUNTY, with the quality of services rendered to the COUNTY, then the COUNTY shall have the option of either requesting the CONTRACTOR to cease performing such additional services or canceling this Contract.

Section 10. Independent CONTRACTOR Relationship

In the performance of the work, duties, and obligations evolving under this Contract, it is mutually understood and agreed that the CONTRACTOR is at all times serving as an independent contractor providing the COUNTY with services as a contractor and/or independent contractor. Amounts paid to the CONTRACTOR by the COUNTY as compensation for providing said services and for the performance of this Contract are for services purchased, and amounts paid to the CONTRACTOR shall be deemed to be compensation to an independent contractor and shall not be subject to any tax withholding. It is expressly understood that the COUNTY is interested only in the results to be achieved, and the conduct and control of the work will be the sole responsibility of the CONTRACTOR. The CONTRACTOR is not considered to be an agent or employee of the COUNTY for any purpose, and the CONTRACTOR will not be eligible to participate in any benefits the COUNTY provides for its own employees. It is further understood and agreed that the COUNTY does not agree to use the

CONTRACTOR exclusively. It is further understood and agreed that, except as provided herein, the CONTRACTOR is free to contract for similar services to be performed for others during the term of this Contract.

Section 11. Indemnification and Liability

The COUNTY shall not be liable for any injury to the person or property of any person, firm, or corporation resulting directly or indirectly from CONTRACTOR's performance of this Contract, and the CONTRACTOR assumes full and complete responsibility therefore. The CONTRACTOR shall remain insured under terms of a public liability insurance policy as described in the "Certificate of Insurance" attached hereto as Attachment "A" during the entire term of this Contract and for the performance of all work herein provided. The CONTRACTOR shall further indemnify the COUNTY and hold the COUNTY safe and harmless from any and all liability, lawsuits, judgments, attorney fees, and other costs incurred by the COUNTY in defending any claim or lawsuit made against the COUNTY by any person, firm, or corporation arising directly or indirectly out of any work performed by the CONTRACTOR pursuant hereto or any breach or alleged breach of duty or responsibility of the CONTRACTOR related thereto. IN WITNESS WHEREOF, the COUNTY and the CONTRACTOR have caused this Contract to be executed by their duly authorized officers on the day and year first above written.

ATTEST:

SHELBY COUNTY

By: Chad Scroggins
County Manager

Date

ATTEST:

CONTRACTOR

By (print): _____

Title: _____

Date

ATTACHMENT "A"
SUPPLEMENTAL CONDITIONS

- 1) Work must be coordinated with the COUNTY.
- 2) Construction documents, including the attached Project Plans and Specifications, are included as part of this Contract.
- 3) The CONTRACTOR must maintain work space clean and free of debris.
- 4) The CONTRACTOR's price quote dated _____ is hereby incorporated as a part of this Contract. Construction documents, including the Project Plans and Specifications, are included as part of this Contract.
- 5) By signing this contract, CONTRACTOR represents and agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.
- 6) The CONTRACTOR shall procure and maintain public liability insurance with a minimum of One Million Dollars (\$1,000,000.00) coverage in form and substance as approved by COUNTY. A "Certificate of Insurance" shall be furnished to COUNTY and shall specify that such insurance is not subject to cancellation without prior written notice to COUNTY of at least thirty (30) days. Please request the additional insured to read: Shelby County, its officers, agents, and employees, successors or assigns.
- 7) When required by law the CONTRACTOR shall also provide to COUNTY a Certificate or Proof of Workmen's Compensation Insurance in form and substance acceptable to COUNTY.
- 8) Contractor agrees that it will fully comply with the Immigration Reform and Control Act of 1986, as amended by the Immigration Act of 1990, and the Beason-Hammon Alabama Taxpayer and Citizen Protection Act, which makes it unlawful for an employer in Alabama to knowingly hire or continue to employ an alien who is or has become unauthorized with respect to such employment or to fail to comply with the I-9 requirements or fails to use E-Verify to verify the eligibility to legally work in the United States for all of its new hires who are employed to work in the State of Alabama. Without limiting the foregoing, Contractor shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien, and shall have an officer or other managerial employee who is personally familiar with the Contractor's hiring practices to execute an affidavit to this effect on the form supplies by Shelby County and return the same to Shelby County. Contractor shall also enroll in the E-Verify Program prior to performing any work, or continuing to perform any ongoing work, and shall remain enrolled throughout the entire course of its performance hereunder, and shall attach to its affidavit the E-Verify Program for Employment

Verification and Memorandum of Understanding and such other documentation as Shelby County may require to confirm Contractor's enrollment in the E-Verify Program. Contractor agrees not to knowingly allow any of its subcontractors, or any other party with whom it has a contract, to employ in the State of Alabama any illegal or undocumented aliens to perform any work in connection with the Project, and shall include in all of its contracts a provision substantially similar to the paragraph. If Contractor receives actual knowledge of the unauthorized status of one of its employees in the State of Alabama, it will remove that employee from the project, jobsite or premises of Shelby County and shall comply with the Immigration Reform and Control Act of 1986, as amended by the Immigration Act of 1990, and the Beason-Hammon Alabama Taxpayer and Citizen Protection Act. Contractor shall require each of its subcontractors, or other parties with whom it has a contract, to act in a similar fashion. If Contractor violates any term of this provision, this Agreement will be subject to immediate termination by Shelby County. To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless Shelby County from any and all losses, consequential damages, expenses included but not limited to, attorney's fees, claims, suits, liabilities, fines, penalties, and any other costs arising out of or in any way related to Contractor's failure to fulfill its obligations contained in this paragraph. Additionally, contractor shall provide County proof that you are in compliance with the immigration law by including a notarized E-Verify Memorandum of Understanding and provide your subcontractors notice of their compliance obligations and obtain from each a notarized Affidavit of Immigration Law Compliance-Subcontractor.

- 9) The contractor, person, firm, or corporation undertaking or contracting to undertake the herein described public works project agrees to use in the execution of the contract materials, supplies, and products manufactured, mined, processed, or otherwise produced in the United States or its territories, if the same are available at reasonable and competitive prices and are not contrary to any sole source specification implemented under subsection (f) of Section 39-2-2, Code of Alabama(1975), as amended. In the event the contractor breaches the agreement to use domestic products, and domestic products are not used, there shall be a downward adjustment in the contract price equal to any realized savings or benefits to the contractor.
- 10) If work being performed interferes with normal operations of the facility, the work shall be scheduled after hours as necessary.

Debarment, Suspension and Other Responsibility Matters

As required by Executive Order 12549, Debarment and Suspensions, and implemented at 2 CFR Part 2867, for the prospective participants in primary covered transactions, as defined at 2 CFR Part 2867.20(a), the applicant certifies that it and its principals:

- A. Are not presently debarred, suspended, proposal for debarment, declared ineligible, sentenced to a denial of federal benefits by a state or federal court, or voluntarily excluded from covered transactions by any federal department or agency:
- B. Have not within a three year period preceding this covered transaction been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) or private agreement or transaction, violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion or receiving stolen property, making false claims, or obstruction of justice, or commission of any offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;
- C. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph B. of this certification; and
- D. Have not within a three year period preceding this transaction had one of more public transactions (federal, state or local) terminated for cause or default.

I/we hereby certify that I/we are in complete compliance with all of the provisions noted above as of this date _____, 20____.

Print: _____

Print: _____

Print: _____

Print: _____

Print: _____

Print: _____

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: 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, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency 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 the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

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 (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 (1.) of this section, in the sum of \$10 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 (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency 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 (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (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 (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. 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 Federal 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.

b. 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 Federal 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.

2. 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 31 U.S.C. 1352. 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.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

**BOND
FOR PERFORMANCE OF THE WORK**

STATE OF ALABAMA
SHELBY COUNTY

KNOW ALL MEN BY THESE PRESENTS: That we, _____,
as Principal, _____ and
_____ and
_____ as Surety, are held and
firmly bound unto the County of Shelby, in the penal sum of
_____ and /100 Dollars (\$ _____), for
the payment of which sum, well and truly to be made, we hereby bind ourselves, our heirs,
executors, administrators, successors and assigns.

IN WITNESS WHEREOF, we have hereunto set our hands and affixed our seals, this _____
day of _____, 20____.

PROVIDED, HOWEVER, that the condition of this obligation is such that whereas the above bound
_____ have this day entered into a Contract with the said Shelby County
Commission for the completing the project described in the attached plans and specifications
_____ located within the said County, a copy of which said Contract is hereto
attached.

NOW, THEREFORE, in the event that said _____, as such Contractor,
shall faithfully and promptly perform said Contract and all the conditions and requirements thereof,
then this obligation shall be null and void and to no effect, otherwise to remain and be in full force
and effect.

PROVIDED, FURTHER, THAT upon failure of the said _____, to
promptly and efficiently prosecute said work, in any respect, in accordance with the Contract, the
above bound _____

_____,
as Surety, shall take charge of said work and complete the Contract at their expense, pursuant to its
terms, receiving however, any balance of the funds in the hands of said County due under said
Contract. Said Surety may, if they so elect, by written direction given to the Shelby County
Commission authorize the Commission to advertise for bids to complete the said Contract at the
expense of said Surety, and such Surety hereby agree and bind themselves to pay the expense of
the completion of such work, less any funds in the hands of the County remaining due to the above
bound Contractor.

PROVIDED, further, that said Contractor and Surety hereby agree and bind themselves to the
mode of service described in Section 39-1-1, Code of Alabama 1975, as amended, and consent
that such service shall be the same as personal service on said Contractor or Surety.

Upon completion of said Contract pursuant to its terms, if any funds remain due on said
Contract, the same shall be paid to said Principal or Surety.

The decision of said County Manager upon any question connected with the execution of
said Contract, or any failure or delay in the prosecution of the work by said Principal or Surety, shall
be final and conclusive.

The Proposal, Specifications, and the Contract hereinbefore referred to, and the Bond for Performance of the Work executed under the provisions of Section 39-1-1, Code of Alabama 1975, as amended, are made a part of this obligation and instrument is to be construed in connection therewith.

WITNESS our hands and seals this _____ day of _____ 20__.

(L.S)

(L.S.)
Contractor

Surety

By _____

Address _____

**BOND FOR
PAYMENT OF
LABOR, MATERIAL, FEED-STUFFS OR SUPPLIES**

STATE OF ALABAMA
SHELBY COUNTY

KNOW ALL MEN BY THESE PRESENTS: That we _____, as
Principal, _____ and
and _____

_____ as Sureties, are held and firmly
bound unto the County of Shelby, in the penal sum of
_____ and /100 Dollars (\$ _____), for the payment
of which sum, well and truly to be made, we hereby bind ourselves, our heirs, executors,
administrators, successors and assigns.

IN WITNESS WHEREOF, we have hereunto set our hands and affixed our seals, this
_____ day of _____, 20____.

PROVIDED, HOWEVER, that the condition of this obligation is such that whereas the above
bound _____ have this day entered into a Contract with the said
County of Shelby for the for the completing the project described in the attached plans and
specifications, to-wit: known as _____ Project, located within the said County, a
copy of which said Contract is hereto attached.

NOW, THEREFORE, in the event that said _____ as such
Contractor shall promptly make payment to all persons supplying him or them with labor, material,
feed-stuffs, or supplies for or in the prosecution of the work provided for in said Contract, then this
obligation shall be null and void and of no effect, otherwise to remain and be in full force and effect.

PROVIDED, FURTHER, in the event that the said _____ as such
contractor shall fail to make prompt payment to all persons supplying him or them with labor,
materials, feed-stuffs, or supplies for or in the prosecution of the work provided in such contract, the
above bound _____ as
Surety shall be liable for the payment of such labor, materials, feed-stuffs or supplies and for the
payment of reasonable attorney's fees incurred by the successful claimants of plaintiffs in suits on
said bond as provided in Section 39-1-1, Code of Alabama 1975, as amended, are made a part of
this obligation, and this instrument is to be construed in connection therewith.

In the event said Principal shall fail or delay the prosecution and completion of said work and
said Surety shall also fail to act promptly as herein before provided, then said County Manager
may cause ten days notice of such failure to be given, either to said Principal or Surety, and
at the expiration of said ten days, if said Principal or Surety do not proceed promptly to
execute said contract, the Shelby County Commission shall have the authority to cause said
work to be done, and when the same is completed and the cost thereof estimated, the said
principal and sureties shall and hereby agree to pay any excess in the cost of said work above the
agreed price to be paid under said Contract.

Upon completion of said Contract pursuant to its terms, if any funds remain due on said
Contract, the same shall be paid to said Principal or Surety.

The said Principal and Surety further agree as part of this obligation to pay all such damages of any kind to person or property that may result from a failure in any respect to perform and complete said Contract.

The decision of said County Manager upon any question connected with the execution of said Contract, or any failure or delay in the prosecution of the work by said Principal or Surety, shall be final and conclusive.

The Proposal, Specifications and the Contract hereinbefore referred to, and the Bond for Payment of Labor, Materials, Feed-stuffs or Supplies executed under the provisions of Section 39-1-1, Code of Alabama 1975, as amended, are made a part of this obligation, and this instrument is to be construed in connection therewith.

WITNESS our hands and seals this _____ day of _____ 20____.

_____(L.S)

_____(L.S.)
Contractor

Surety

By _____

Address _____

CERTIFICATE OF NON-SEGREGATED FACILITIES

The federally assisted construction contractor certifies that he does not maintain or provide for his employee any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the equal opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washroom, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin, because of habit, local custom, or other reason. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause, and that he will retain such certifications in his files.

NOTICE TO PROSPECTIVE CONTRACTORS OF REQUIREMENT FOR CERTIFICATION OF NONSEGREGATED FACILITIES:

A Certification of Non-segregated Facilities must be submitted prior to the award of a contract or subcontract exceeding \$10,000, which is not exempt from the provisions of the Equal Opportunity Clause.

Certification - The information above is true and complete to the best of my knowledge and belief.

Name and Title of
Signer (Please Print)

Signature

Date

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

NOTICE OF AWARD

To: _____

Date: _____

Project: Shelby County Public Safety Radio
Towers Project

The OWNER has considered the BID submitted by you for the above described PROJECT in the bid received _____.

You are hereby notified that your BID has been accepted for items in the amount of _____.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER. Please make your required submittals in the bid documents to be reviewed and approved prior to fabrication of the materials.

Shelby County
Owner

By: _____
Fred M. Gauntt III, PE

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____ this the _____ day of _____, 2024.

Contractor

By _____

Title

NOTICE TO PROCEED

To: _____ Date: _____, 2024

Project: Shelby County Public Safety Radio Towers Project

You are hereby notified to commence WORK in accordance with the Agreement dated _____ on or before _____ and you are to complete the WORK within _____ calendar days thereafter. The date of completion of all WORK is therefore approximately _____.

Shelby County, AL
Owner

By: Fred M. Gauntt, III, PE
Title: Chief Facilities Management
Officer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____
this the _____ day of _____, 2024.

Contractor

By

Title

PUBLIC WORKS CONTRACT
SHELBY COUNTY COMMISSION

CHANGE ORDER

DATE: _____

CHANGE ORDER NO: 1

PROJECT: _____

CONTRACTOR: _____

CONTRACT DATE: _____
COST CODE NO: _____
CONTRACT NO. _____

YOU ARE DIRECTED TO MAKE THE FOLLOWING CHANGES IN YOUR CONTRACT:

IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENTS YOU ARE INSTRUCTED TO FURNISH:

See attached quantities

AMOUNT OF ORIGINAL CONTRACT	\$ _____
AMOUNT OF PREVIOUS CHANGES	\$ _____
AMOUNT OF THIS CHANGE	\$ _____
TOTAL AMOUNT OF ADJUSTED CONTRACT	\$ _____

NOTE: IT IS HEREBY UNDERSTOOD AND AGREED THAT THE ABOVE IS COMPENSATION IN FULL FOR CHANGES AS INDICATED. IT IS FURTHER UNDERSTOOD AND AGREED THAT ALL RIGHTS FOR ANY ADDITIONAL COMPENSATION ARE WAIVED CONCERNING THE CHANGES CONTAINED HEREIN.

Shelby County Commission

BY: _____
TITLE: Owner
DATE: _____

BY: _____
TITLE: County Manager
DATE: _____

CONTRACTOR NOTICE OF COMPLETION

In Accordance with Chapter 1, Title 39, Code of Alabama, 1975, as amended by Act 2023-497 (HB168), notice is hereby given that as of _____ (Insert Date), _____ (Insert Contractor Name), has completed the Contract for the project described as _____ (Insert Project Name).

Signature

Print Name

Title

Company Name

Date

Shelby County

Affidavit for Payment of Debts Incurred on Construction Projects

Project No. _____
County _____
Contractor _____
Description and Location of Project _____

This is to certify that all known debts for labor and materials used on the project and all approved sub-contractual obligations associated with the construction of Project _____, _____ County, have been paid or will be paid within five (5) days after final payment.

Sworn to this the _____ day of _____, _____.
(Month) (Year)

(Name)

(Title)

(Contractor)

Sworn to and subscribed before me on the _____ day of _____, _____.
(Month) (Year)

(Notary)

For _____ County _____ State

My commission expires _____
(Date)



JULIE P. MAGEE
Commissioner

State of Alabama Department of Revenue

(www.revenue.alabama.gov)
50 North Ripley Street
Montgomery, Alabama 36132

MICHAEL E. MASON
Assistant Commissioner

JOE W. GARRETT, JR.
Deputy Commissioner

CURTIS E. STEWART
Deputy Commissioner

Alabama Department of Revenue NOTICE

Tax Guidance for Contractors, Subcontractors and Alabama Governmental Entities Regarding Construction-related Contracts

Legislative Act 2013-205 requires the Department of Revenue to issue Form STC-1, *Sales and Use Tax Certificate of Exemption for Government Entity Projects*, to all contractors and subcontractors working on qualifying governmental entity projects once the Form ST: EXC-01 is approved.

Each exempt entity, contractor and subcontractor must make application for qualification of the exemption using Form ST: EXC-01 for each tax-exempt project. The application is available on the department's website at <http://revenue.alabama.gov/salestax/ST-EXC-01.pdf>. Applications should be submitted directly to the Sales and Use Tax Division Central Office, P.O. Box 327710, Montgomery, AL 36132-7710.

The sales and use tax exemption provided for in Act 2013-205 applies to the purchase of building materials, construction materials and supplies, and other tangible personal property that become part of the structure pursuant to a qualifying contract entered into on or after January 1, 2014. Qualifying projects and contracts are those generally entered into with the following governmental entities, unless otherwise noted: the State of Alabama, a county or incorporated municipality of Alabama, an Alabama public school, or an Alabama industrial or economic development board or authority already exempt from sales and use taxes. **Please note that contracts entered into with the federal government and contracts pertaining to highway, road, or bridge construction or repair do not qualify for the exemption provided for in Act 2013-205.** [Reference: Sales and Use Tax Division Administrative Rule 810-6-3-.77 *Exemption for Certain Purchases by Contractors and Subcontractors in Conjunction with Construction Contracts with Certain Governmental Entities*.]

The Alabama Department of Revenue will assign each contractor and sub-contractor a consumers use tax account, if one is currently not in place, at the time the Form STC-1, *Sales and Use Tax Certificate of Exemption for Government Entity Projects*, is issued.

Contractors and sub-contractors for qualifying projects will be required to file monthly consumers use tax returns and report all exempt purchases for ongoing projects, as well as all taxable purchases on one return. These returns are required to be filed through the department's online tax return filing and payment portal, My Alabama Taxes (<https://myalabamataxes.alabama.gov>).

As another option for these types of contracts, as well as with other contracts entered into with other types of exempt entities, the Form ST:PAA1, *Purchasing Agent Appointment*, may be used. However, please be advised that the use of the Form ST:PAA1 option will require the exempt entity to be invoiced directly and pay for directly from their funds any construction and building material and supply purchases.

For additional information concerning this guidance, taxpayers should contact Sales and Use Tax Division representative Thomas Sims at 334-242-1574 or by email at Thomas.Sims@revenue.alabama.gov.

WHAT'S NEW?

TOPIC: Tax Guidance for Contractors, Subcontractors and Alabama Governmental Entities Regarding Construction-related Contracts

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**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONSTRUCTION DOCUMENTS**

SECTION 01 1150 – Page 1 of 1

A. Preliminary Drawings and Specifications – Prior to beginning construction, Contractor shall mark all preliminary drawings as VOID and insure no preliminary drawings will be used during construction. Contractor shall further direct his subcontractors, vendors, and trades to do likewise. At execution of the construction contract, the Contractor and his subcontractors shall certify that all contracts reflect the provisions of the current and official drawing revision that will be used to obtain permits and licenses from the Authorities Having Jurisdiction (AHJ)

B. Drawings and Specifications for Permitting – Contractor will be furnished computer .pdf files for bidding, building permits, and construction transmitted by email. These drawings and specifications will be labeled *Drawings and Project Manual For Construction* and will contain the Engineer or Architect's Alabama registration seal. The Contractor is authorized to make sufficient copies as is required by the AHJ for submittals and procuring all required permits. The Project Manual may also be referred to as "Project Specifications"

C. Revised Drawings and Specifications - In the event that drawings are revised due to subsequent changes by the Owner or comments by the AHJ, the Contractor will be furnished amended documents by emailed .pdf files, either by individual sheet, or groups of sheets, or full set. Contractor is responsible for distribution and receipt of amended sheets to all subcontractors, vendors, and trades.

D. Drawings and Specifications for Construction– Contractor will maintain the official printed permit set of drawings and specifications for use as the master construction set. These drawings will be labeled *Drawings and Project Manual For Construction* and will contain the Engineer or Architect's Alabama registration seal, and the AHJ certification stamp. The Contractor alone is authorized to make an unlimited number of copies for his and his sub-contractors' use, at the Contractor's expense. Such authorization shall expire at the completion of construction, and all drawings that can be accounted for, except final record sets, shall be destroyed or returned to Engineer or Architect.

END OF DOCUMENT

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT SUBSTITUTION PROCEDURES

SECTION 01 2500 – Page 1 of 2

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Product Substitution Procedures.

1.2 GENERAL

- A. Definition: Proposal by Contractor to use manufacturer, product, material, or system different from one required in Contract Documents.
- B. Do not substitute Products unless a substitution request has been approved by Engineer or Architect.
- C. Substitutions during Bidding: Refer to Instructions to Bidders.
- D. Engineer or Architect and Owner will consider substitution requests within 30 days after award of Contract. After initial 30 day period, substitutions requests will be considered only due to non-availability of a specified Product through no fault of Contractor.
- E. In case of non-availability of a specified Product, notify Engineer or Architect in writing as soon as non-availability becomes apparent.

1.3 SUBSTITUTION REQUESTS

- A. Submit substitution requests on copy of form bound into Project Manual.
- B. Document specified product and proposed substitution with complete data, including:
 - 1. Product identification, including name and address of manufacturer.
 - 2. Product description, performance and test data, and reference standards.
 - 3. Sample, if requested.
 - 4. Description of any anticipated effect that acceptance of proposed substitution will have on Progress Schedule, construction methods, or other items of Work.
 - 5. Description of any differences between specified product and proposed substitution.
 - 6. Difference in cost between specified product and proposed substitution.
- C. Burden of proof for substantiating compliance of proposed substitution with Contract Document requirements remains with Contractor.
- D. A request constitutes a representation that the Contractor;
 - 1. Has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 2. Will provide the same warranty for the substitution as for the specified Product.
 - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 5. Will reimburse Owner for A&E design services associated with re-approval by authorities or revisions to Contract Documents to accommodate the substitution.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
SUBSTITUTION PROCEDURES**

SECTION 01 2500 – Page 2 of 2

- E. Substitutions will not be considered if:
 - 1. They are indicated or implied on Shop Drawings or other submittals without submittal of a substitution request.
 - 2. Approval will require substantial revision of Contract Documents without additional compensation to Architect and Engineers.
- F. Submit to Engineer or Architect electronically in Adobe PDF format.
- G. Engineer or Architect will notify Contractor of approval or rejection of each Substitution Request.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

DOCUMENT 01 2519

SUBSTITUTION REQUEST FORM

DATE: _____

TO: _____

ATTENTION: _____

PROJECT: _____

We submit for your consideration the following product as a substitution for the specified product:

Section No.	Paragraph	Specified Product
-------------	-----------	-------------------

_____	_____	_____
-------	-------	-------

Proposed Substitution: _____

Reason for Substitution: _____

Product Data:

Attach complete technical data for both the specified product and the proposed substitution. Include information on changes to Contract Documents that the proposed substitution will require for its proper installation.

Samples:

___ Attached ___ Will be furnished upon request

Does the substitution affect dimensions shown on Drawings?

___ No ___ Yes (explain) _____

Effects of proposed substitution on other Work:

Differences between proposed substitution and specified Product:

Manufacturer's warranties of the proposed substitution are:

☐ Same ☐ Different (explain) _____

Maintenance service and spare parts are available for proposed substitution from:

Previous installations where proposed substitution may be seen:

Project: _____ Project: _____

Owner: _____ Owner: _____

Engineer or Architect: _____ Engineer or Architect: _____

Date Installed: _____ Date Installed: _____

Cost savings to be realized by Owner, if proposed substitution is approved:

Change to Contract Time, if proposed substitution is approved:

☐ No Change ☐ Add _____ days ☐ Deduct _____ days

Submittal constitutes a representation that Contractor has read and agrees to the provisions of Section 01 2500.

Submitted by Contractor;

Signature

Firm

For Use by Engineer or Architect:

Based on the information supplied by the Contractor, the Engineer or Architect has reviewed the proposed substitution on the basis of design concept of the Work and conformance with information given in Contract Documents.

☐ Approved ☐ Approved as Noted ☐ Rejected

Submit Additional Information: _____

By: _____ Date: _____

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONSTRUCTION PROGRESS SCHEDULES**

SECTION 01 3216 – Page 1 of 2

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Construction progress schedule.
- B. Related Sections:
 - 1. Section 01 1100 - Summary of Work: Work sequence.

1.2 FORMAT

- A. Prepare Progress Schedule as a horizontal bar chart with separate bar for each major portion of Work or operation, identifying first work day of each week or
- B. Prepare Progress Schedule on network analysis system using the critical path method.
- C. Sequence of Listings: The chronological order of the start of each item of Work.
- D. Scale and Spacing: To provide space for notations and revisions.
- E. Sheet Size: Multiples of 8-1/2 x 11 inches.

1.3 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification Section number.
- C. Identify work of logically grouped activities.
- D. Provide subschedules to define critical portions of the entire Progress Schedule.
- E. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- F. Provide separate schedule of submittal dates for Shop Drawings, Product Data, and Samples, including:
 - 1. Dates reviewed submittals will be required from Engineer or Architect.
 - 2. Decision dates for selection of finishes.
 - 3. Delivery dates for Owner furnished products and Products identified under Allowance.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONSTRUCTION PROGRESS SCHEDULES**

SECTION 01 3216 – Page 2 of 2

- G. Revisions:
 - 1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
 - 2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- I. Provide narrative report to define problem areas, anticipated delays, and impact on Progress Schedule. Report corrective action taken, or proposed, and its effect.

1.4 SUBMITTAL

- A. Submit initial Progress Schedule to Owner and Engineer or Architect within 15 days after date of Notice to Proceed. After review, resubmit required revised data within 10 days.
- B. Submit revised Progress Schedule to Owner and Engineer or Architect with each Application for Payment.
- C. Submit electronically in Adobe PDF format.

1.5 DISTRIBUTION

- A. Distribute copies of approved Progress Schedule to project site file, Subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in Progress Schedule.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
SUBMITTAL PROCEDURES**

SECTION 01 3300 – Page 1 of 3

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal procedures.
 - 2. Proposed Products list.
 - 3. Submittal schedule.
 - 4. Shop Drawings.
 - 5. Product Data.
 - 6. Samples.
 - 7. Quality control submittals.
- B. Related Sections:
 - 1. Section 01 4000 - Quality Requirements.

1.2 SUBMITTAL PROCEDURES

- A. Number each submittal with Project Manual section number and a sequential number within each section. Number resubmittals with original number and an alphabetic suffix.
- B. Identify Project, Contractor, Subcontractor or supplier, pertinent Drawing sheet and detail numbers, and specification Section number, as appropriate.
- C. Submit all submittals listed under "Submittals for Review" simultaneously for each Product or Specification Section.
- D. Where multiple Products function as an assembly, group submittals for all related Products into single submittal.
- E. Apply Contractor's stamp, signed or initialed certifying that:
 - 1. Submittal was reviewed.
 - 2. Products, field dimensions, and adjacent construction have been verified.
 - 3. Information has been coordinated with requirements of Work and Contract Documents.
- F. Schedule submittals to expedite the Project, and deliver to Engineer or Architect. Coordinate submittal of related items.
- G. For each submittal, allow 14 days for Engineer or Architect's review. Engineer or Architect will not review incomplete submittals.
- H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of completed Work.
- I. Revise and resubmit submittals when required; identify all changes made since previous submittal.
- J. Distribute copies of reviewed submittals to concerned parties and to Project Record Documents file. Instruct parties to promptly report any inability to comply with provisions.

1.3 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Notice to Proceed, submit a complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
SUBMITTAL PROCEDURES**

SECTION 01 3300 – Page 2 of 3

- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- C. Submit electronically in Adobe PDF format.

1.4 SUBMITTAL SCHEDULE

- A. Within 15 days after date of Notice to Proceed, submit a submittal schedule showing all submittals proposed for project, including submittals listed as:
 - 1. Submittals for Review.
 - 2. Quality Control Submittals.
 - 3. Closeout Submittals.
- B. Include for each submittal:
 - 1. Specification section number.
 - 2. Description of submittal.
 - 3. Type of submittal.
 - 4. Anticipated submittal date.
 - 5. For submittals requiring Engineer or Architect's review, date reviewed submittal will be required from Engineer or Architect.
- C. Submit electronically in Adobe PDF format.

1.5 SHOP DRAWINGS

- A. Present information in clear and thorough manner.
- B. Identify details by reference to sheet and detail numbers or room number shown on Drawings.
- C. Reproductions of details contained in Contract Documents are not acceptable.
- D. Submit electronically in Adobe PDF format. Engineer or Architect will return Submittal Review Document PDF to Contractor for printing and distribution.

1.6 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data.
- B. Supplement manufacturers' standard data to provide information unique to this Project.
- C. Submit electronically in Adobe PDF format. Engineer or Architect will return Submittal Review Document PDF to Contractor for printing and distribution.

1.7 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Where so indicated, submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Engineer or Architect's selection.
- C. Include identification on each sample, with full Project information.
- D. Unless otherwise specified in individual specifications, submit one of each sample.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
SUBMITTAL PROCEDURES**

SECTION 01 3300 – Page 3 of 3

- E. Engineer or Architect will notify Contractor of approval or rejection of samples, or of selection of color, texture, or pattern if full range is submitted.

1.8 QUALITY CONTROL SUBMITTALS

- A. Quality control submittals specified in Section 01 4000 are for information and do not require Engineer or Architect's responsive action except to require resubmission of incomplete or incorrect information.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
QUALITY REQUIREMENTS**

SECTION 01 4000 – Page 1 of 3

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. References.
 - 2. Quality assurance and control of installation.
 - 3. Mockups.
 - 4. Manufacturer's field services and reports.
 - 5. Design data and calculations.
 - 6. Test reports and certifications.
 - 7. Manufacturer's installation instructions.

1.2 REFERENCES

- A. For products or workmanship specified by reference to association, trade, or industry standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Should specified reference standards conflict with Contract Documents, request clarification from Engineer or Architect before proceeding.
- C. Conform to edition of reference standard in effect as of date of Owner/Contractor Agreement.
- D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.3 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer or Architect before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.4 MOCKUPS

- A. Definition:
 - 1. Mockups are field samples constructed, applied, or assembled at the project site for review by the Owner and Engineer or Architect that illustrate materials, equipment, or workmanship.
 - 2. Approved mockups establish the standard of quality by which the Work will be judged.
- B. Construct, apply, or assemble specified items, with related attachment and anchorage devices, flashings, seals, and finishes.

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT QUALITY REQUIREMENTS

SECTION 01 4000 – Page 2 of 3

- C. Perform work in accordance with applicable specifications sections.
- D. Erect at project site at location acceptable to Engineer or Architect. Protect from damage.
- E. Removal:
 - 1. Mockups may remain as part of the Work only when so designated in individual specification sections.
 - 2. Do not remove mockups until removal is approved by Engineer or Architect or upon Final Completion.
 - 3. Where mockup is not permitted to remain as part of the Work, clear area after removal of mockup has been approved by Engineer or Architect.

1.5 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, or startup of equipment, as applicable, and to initiate instructions when necessary.
- B. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report to Engineer or Architect within 10 days of observation.

1.6 DESIGN DATA AND CALCULATIONS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide design data and calculations.
- B. Accuracy of design data and calculations is the responsibility of the Contractor.
- C. When so specified, prepare design data and calculations under the direction of a professional engineer licensed in the state in which the Project is located. Affix engineer's seal to submittals.
- D. Submit one copy of original stamped and signed document. In addition, submit electronically in Adobe PDF format.

1.7 TEST REPORTS AND CERTIFICATIONS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide test reports and manufacturers' certifications.
- B. Indicate that material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Submittals may be recent or previous test results on material or Product, but must be acceptable to Engineer or Architect.
- D. Submit electronically in Adobe PDF format.

1.8 MANUFACTURER'S INSTALLATION INSTRUCTIONS

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
QUALITY REQUIREMENTS**

SECTION 01 4000 – Page 3 of 3

- A. When Contract Documents require that Products be installed in accordance with manufacturer's instructions:
1. Submit manufacturer's most recent printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, as applicable.
 - a. Submit in quantities specified for Product Data.
 - b. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
 - c. Identify conflicts between manufacturers' instructions and requirements of Contract Documents.
 2. Perform installation of Products to comply with requirements of manufacturer's instructions.
 3. If installation cannot be performed in accordance with manufacturer's instructions, notify Engineer or Architect and await instructions.
 4. Submit electronically in Adobe PDF format.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT STRUCTURAL TESTS AND SPECIAL INSPECTIONS

SECTION 01 4100 – Page 1 of 4

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements required for compliance with the International Building Code, Chapter 17, Structural Tests and Special Inspections.
- B. Structural testing and special inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve contractor of responsibility for compliance with other construction document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the construction document requirements.
 - 3. Requirements for contractor to provide quality-assurance and -control services required by engineer or architect, owner, or authorities having jurisdiction are not limited by provisions of this section.
- C. The owner will engage one or more qualified special inspectors and / or testing agencies to conduct structural tests and special inspections specified in this section and related sections and as maybe specified in other divisions of these specifications.

1.03 DEFINITIONS

- A. Approved Agency: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved by the building official.
- B. Construction Documents: Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit. Construction Documents include all supplemental instructions, sketches, addenda, and revisions to the drawings and specifications issued by the registered design professional beyond those issued for a building permit.
- C. Shop Drawings / Submittal Data: Written, graphic and pictorial documents prepared and / or assembled by the contractor based on the Construction Documents.
- D. Structural Observation: Visual observation of the structural system by a representative of the registered design professional's office for general conformance to the approved construction documents. Structural observations are not considered part of the structural tests and special inspections and do not replace inspections and testing by the testing agency or special inspector.
- E. Special Inspector: A qualified person who demonstrating competence, to the satisfaction of the code enforcement official and registered design professional in responsible charge, for inspection of the particular type of construction or operation requiring special inspection. The special inspector shall be a licensed professional engineer or engineering intern or a qualified representative from the testing agency.

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT STRUCTURAL TESTS AND SPECIAL INSPECTIONS

SECTION 01 4100 – Page 2 of 4

- F. Special Inspection, Continuous: The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed.
- G. Special Inspection, Periodic: The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been or is being performed and at the completion of the work.
- H. Testing Agency: A qualified materials testing laboratory under the responsible charge of a licensed professional engineer, approved by the code enforcement official and the registered design professional in responsible charge, to measure, examine, test, calibrate, or otherwise determine the characteristics or performance of construction materials and verify confirmation with construction documents.

1.04 QUALITY ASSURANCE

- A. Testing Agency Qualifications:
 - 1. Minimum qualifications of inspection and testing agencies and their personnel shall comply with ASTM E329-03 Standard Specification for Agencies in the Testing and / or Inspection of Materials Used in Construction.
 - a. Inspectors and individuals performing tests shall be certified for the work being performed as outlined in the appendix of the ASTM E329. Certification by organizations other than those listed must be submitted to the building official for consideration before proceeding with work.
 - 2. In addition to these requirements, local jurisdiction may have additional requirements. It is the responsibility of the testing and inspection agencies to meet local requirements and comply with local procedures.
- B. Qualifications of Special Inspector: The Special Inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the Building Official, for inspection of the particular type of construction or operation being inspected. The Special Inspector shall meet the legal qualifications of the building code having jurisdiction.
 - 1. Duties and Responsibilities of the Special Inspector:
 - 2. The Special Inspector shall observe the work assigned to ascertain, to the best of his/her knowledge that it is in conformance with the approved design drawings and specifications.
 - 3. The Special Inspector shall furnish inspection reports to the Building Official, the Architect/Engineer, and the Owner. All discrepancies shall be brought to the immediate attention of the Architect/Engineer, Contractor, and Owner. A report that the corrected work has been inspected shall be sent to the Building Official, the Architect/Engineer, and the Owner.
 - 4. The Special Inspector shall create and maintain a log of all discrepancies throughout the duration of the project. This log shall include, but is not limited to, discrepancy date, description, drawing and/or detail reference, description of as-built condition, description of any remedial work performed, and status of discrepancy. This log shall be submitted to the Architect/Engineer on a periodic basis for the review and comment. Upon completion of the project, this log shall be submitted in its entirety as an attachment to the final signed report described below.
 - 5. The Special Inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of the building code.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
STRUCTURAL TESTS AND SPECIAL INSPECTIONS**

SECTION 01 4100 – Page 3 of 4

1.05 CONFLICTING REQUIREMENTS, REPORTS, AND TEST RESULTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to the registered design professional in responsible charge for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to the registered design profession in responsible charge for a decision before proceeding.
- C. The special inspector's reports and testing agencies results shall have precedence over reports and test results provided by the contractor.
- D. Where a conflict exists between the construction documents and approved shop drawings / submittal data, the construction documents shall govern unless the shop drawings / submittal data are more restrictive. All conflicts shall be brought to the attention of the registered design professional in responsible charge.

1.06 SUBMITTALS BY SPECIAL INSPECTOR AND / OR TESTING AGENCY

- A. Special inspectors shall keep and distribute records of inspections. The special inspector shall furnish inspection reports to the building official, and to the registered design professional in responsible charge, contractor, engineer or architect, and owner. Reports shall indicate that work inspected was done in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and the building official prior to the start of work.
 - 1. Special inspection reports and test results shall include, but not be limited to, the following:
 - a. Date of inspection.
 - b. Description of inspections or tests performed including location (reference grid lines, floors, elevations, etc.).
 - c. Statement noting that the work, material, and / or product conforms or does not conform to the construction document requirements.
 - 1) Name and signature of contractor's representative who was notified of work, material, and / or products that do not meet the construction document requirements.
 - d. Name and signature of special inspector and / or testing agency representative performing the work.
 - B. Schedule of Non-Compliant Work: Each agent shall maintain a log of work that does not meet the requirements of the construction documents. Include reference to original inspection / test report and subsequent dates of re-inspection / retesting.
 - C. Reports and tests shall be submitted within 1 week of inspection or test. Schedule of Non-Compliant Work shall be updated daily and submitted at monthly intervals.
 - D. Final Report of Special Inspections. Submitted by each agent listed in the schedule of Structural Testing and Special Inspections.

1.07 PAYMENT OF TESTING LABORATORY

- A. The Owner will pay for the initial laboratory services for the testing of materials for

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT STRUCTURAL TESTS AND SPECIAL INSPECTIONS

SECTION 01 4100 – Page 4 of 4

compliance with the requirements of the contract documents. The Contractor will be liable to the Owner for the cost for testing and retesting of materials that do not comply with the requirements of the contract documents and shall furnish and pay for the testing and inspection of other items as specified in these Specifications.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.01 CONTRACTOR'S RESPONSIBILITY

- A. The contractor shall coordinate the inspection and testing services with the progress of the work. The contractor shall provide sufficient notice to allow proper scheduling of all personnel. The contractor shall provide safe access for performing inspection and on site testing.
- B. The contractor shall submit schedules to the owner, registered design professionals and testing and inspecting agencies. Schedules will note milestones and durations of time for materials requiring structural tests and special inspections.
- C. The contractor shall repair and / or replace work that does not meet the requirements of the construction documents.
 - 1. Contractor shall engage an engineer / architect to prepare repair and / or replacement procedures.
 - 2. Engineer / architect shall be registered in the state in which the project is located. Engineer shall be acceptable to the registered design professional in responsible charge, code enforcement official, and owner.
 - 3. Procedures shall be submitted for review and acceptance by the registered design professional in responsible charge, code enforcement official, and owner before proceeding with corrective action.
- D. The contractor shall be responsible for costs of:
 - 1. Re-testing and re-inspection of materials, work, and / or products that do not meet the requirements of the construction documents and shop drawings / submittal data.
 - 2. Review of proposed repair and / or replacement procedures by the registered design professional in responsible charge and the inspectors and testing agencies.
 - 3. Repair or replacement of work that does not meet the requirements of the construction documents.

3.02 STRUCTURAL OBSERVATIONS

- A. Structural observations may be made periodically as determined by the registered design professional in responsible charge.

3.03 TESTING AND INSPECTION

- A. Testing and inspection shall be in accordance with the attached Schedule of Special Inspections.
- B. Reference related specifications for the minimum level of inspections and testing. Provide additional inspections and testing as necessary to determine compliance with the construction drawings.

PART 4 - 3.4 SCHEDULES AND FORMS - ATTACHED

4.01 A. STATEMENT OF SPECIAL INSPECTIONS

4.02 B. SCHEDULE OF SPECIAL INSPECTIONS (IN CONSTRUCTION DRAWINGS)

4.03 C. FINAL REPORT OF SPECIAL INSPECTIONS

END OF SECTION

STATEMENT OF FINAL INSPECTIONS

Project:
Project Address:
Permit Applicant:
Applicant Address:
Owner:
Owner Address:
Registered Design Professionals (RDP):
Engineer or Architect:
Geotechnical Engineer:
Structural Engineer:
Mechanical Engineer:
Electrical Engineer:

This statement of special inspections is submitted as a condition for permit issuance in accordance with Chapter 17 of the International Building Code. It includes a *Schedule of Special Inspections* applicable to the above referenced project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections.

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the building official and to the registered design professional in responsible charge at a frequency agreed upon by the permit applicant and building official prior to the start of work. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and the registered design professional in responsible charge prior to completion of that phase of work. A *Final Report of Special Inspections* documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted by each agent at the completion of that phase of work.

Maximum frequency of interim report submittals shall not be less than_____.

The Special Inspection program does not relieve the contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Owner's Acknowledgement:

Signature

Date

Building Official's Acceptance:

Signature

Date

Permit No.

FINAL REPORT OF FINAL INSPECTIONS

Project:
Project Address:
Testing / Inspection Agent:

Testing / Inspection Agent Address:
Scope of Testing / Inspections:

(To be completed by Testing / Inspection Agent)

To the best of my information, knowledge, and belief, the special inspections or testing required for this project, and designated for this Agent in the *Schedule of Special Inspections* submitted for permit, have been completed in accordance with the contract documents.

Interim reports submitted prior to this final report and numbered _____ to _____ form a basis for, and are to be considered an integral part of this final report. The following discrepancies that were outstanding since the last interim report dated _____ have been corrected:

(Attach 8 1/2" x 11" continuation sheet(s) if required to complete the description of corrections)

Prepared By:

Type or print name

Signature

Date

Special Inspector's Seal

(Licensed Professional Engineer)

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
TEMPORARY FACILITIES AND CONTROLS**

SECTION 01 5000 – Page 1 of 4

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Temporary utilities.
 - 2. Field offices and sheds.
 - 3. Temporary controls.
 - 4. Protection of installed Work.
 - 5. Security.
 - 6. Progress cleaning.
 - 7. Water, erosion, sediment, dust, and mold and mildew control.
 - 8. Access roads and parking areas.
 - 9. Removal.

1.2 REFERENCES

- A. None

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 TEMPORARY ELECTRICITY

- A. Provide temporary electrical service of capacity and characteristics required for construction.
- B. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. All work to comply with National Electrical Code and all local ordinances. Provide flexible power cords as required.
- C. Maintain temporary distribution system in good condition and provide routine repairs with Owner's approval.

3.2 TEMPORARY LIGHTING

- A. Provide temporary lighting for construction and security purposes.
- B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required. All work to comply with National Electrical Code and all local ordinances.
- C. Maintain lamps and provide routine repairs.
- D. Provide portable lights when required to provide minimum lighting levels necessary for specific work.

3.3 TEMPORARY HEAT

- A. Provide temporary heating devices required to maintain specified ambient temperatures for construction.
- B. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless otherwise indicated in individual specification sections.

3.4 TEMPORARY VENTILATION

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT TEMPORARY FACILITIES AND CONTROLS

SECTION 01 5000 – Page 2 of 4

- A. Ventilate enclosed areas to facilitate curing of materials, disperse humidity, and prevent accumulations of dust, fumes, vapors, or gases.
- B. Provide temporary fan units as required to maintain clean air for construction.
- C. Provide at minimum manufacturers' ventilation requirements for temporary heating devices

3.5 TEMPORARY TELEPHONE, FACSIMILE, AND COMPUTER SERVICES

- A. Provide temporary or mobile telephone service, required during construction.
- B. Provide computer, smartphone, or tablet in Contractor's field office with internet access and email service.

3.6 FIELD OFFICES AND SHEDS

- A. Provide temporary field offices and storage sheds required for construction.
- B. Do not unreasonably encumber site or premises with excess materials or equipment.
- C. Temporary Structures:
 - 1. Portable or mobile buildings, structurally sound, tied down, weathertight, with floors raised above ground.
 - 2. Thermal transmission resistance: Compatible with occupancy and storage requirements.
 - 3. Provide connections for utility services when required.
 - 4. Provide steps and landings at entrances.
- D. Field Office:
 - 1. Size required for Contractor's use and to provide space for project meetings.
 - 2. Adequate electrical power, lighting, heating, and cooling to maintain human comfort.
 - 3. Provide facilities for storage of Project Record Documents.
 - 4. Provide thermometer mounted at convenient outside location, not in direct sunlight.

3.7 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, and to protect existing facilities and adjacent properties from construction operations.
- B. Provide barricades required by governing authorities for public right-of-ways.
- C. Fencing:
 - 1. Provide temporary fencing for construction operations.
 - 2. Construction: Commercial grade chain link.
 - 3. Height: Minimum 6 feet.
 - 4. Locate to protect construction operations, materials, and equipment.
 - 5. Provide vehicular and pedestrian gates.

3.8 EXTERIOR CLOSURES

- A. Provide temporary weathertight closures for exterior openings to provide acceptable interior working conditions, to allow for temporary heating and maintenance of ambient temperatures required in individual specification sections, to protect the Work, and to prevent entry of unauthorized persons.

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT TEMPORARY FACILITIES AND CONTROLS

SECTION 01 5000 – Page 3 of 4

- B. Provide access doors with locking hardware.

3.9 PROTECTION OF INSTALLED WORK

- A. Protect installed work from construction operations; provide special protection when required in individual specification sections.
- B. Minimize traffic, storage, and construction activities on roof surfaces. If traffic, storage, or activity is necessary, obtain recommendations for protection from roofing manufacturer.
- C. Prohibit traffic from landscaped areas.

3.10 SECURITY

- A. Provide a project security program, to:
 - 1. Protect the Work, stored products, and construction equipment from theft and vandalism.
 - 2. Prevent entry by unauthorized persons.

3.11 PROGRESS CLEANING

- A. Maintain areas free from waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
- B. Provide containers for collection of waste materials, debris, and rubbish; remove and dispose of off site as required by construction activities.
- C. Periodically clean interior areas to provide suitable conditions for finish work.

3.12 TEMPORARY CONTROLS

- A. Water Control:
 - 1. Owner will grade site to drain. Prevent puddling water caused by equipment or storage.
 - 2. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
 - 3. Provide water barriers to protect site from soil erosion.
- B. Erosion and Sediment Control:
 - 1. Plan and execute methods to control surface drainage from cuts, fills, borrow areas, and waste disposal areas. Prevent erosion and sedimentation.
 - 2. Minimize amount of bare soil exposed at any one time.
 - 3. Provide temporary measures such as silt fences, dikes, berms, settlement basins, and drainage systems to prevent water flow and sedimentation.
 - 4. Periodically inspect earthwork to detect erosion and sedimentation; promptly employ corrective measures.
- C. Dust Control:
 - 1. Provide dust control materials and methods to minimize dust from construction operations.
 - 2. Prevent dust from dispersing into atmosphere.
- D. Mold and Mildew Control:
 - 1. Provide continuous measures to prevent formation of mold and mildew in construction.
 - 2. Do not install materials sensitive to mold and mildew growth until protection can be provided.
 - 3. Promptly remove and replace materials exhibiting mold and mildew growth.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
TEMPORARY FACILITIES AND CONTROLS**

SECTION 01 5000 – Page 4 of 4

3.13 ACCESS ROADS AND PARKING AREAS

- A. Existing roads designated by Owner may be used for construction purposes. Do not allow heavy vehicles or construction equipment in parking areas.
- B. Provide for access by emergency vehicles.
- C. Keep fire hydrants and water control valves free from obstruction and accessible for use.
- D. Provide parking facilities for construction personnel. When parking needs exceed on site capacity, provide additional off site facilities.
- E. Maintain existing construction, and restore to original or specified condition at completion of Work.

3.14 REMOVAL

- A. Remove temporary utilities, equipment, facilities, and services when construction needs can be met by use of permanent construction or upon completion of Project.
- B. Remove foundations and underground installations; grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing and permanent facilities used during construction to original or to specified condition.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
PRODUCT REQUIREMENTS**

SECTION 01 6000 – Page 1 of 2

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Products.
 - 2. Transportation and handling.
 - 3. Storage and protection.
 - 4. Reuse of existing materials.
 - 5. Product options.
- B. Related Sections:
 - 1. Section 01 2500 - Substitution Procedures.

1.2 PRODUCTS

- A. Provide interchangeable components by the same manufacturer for identical items.
- B. Do not use products containing asbestos, lead, or other known hazardous materials.
- C. Do not reuse materials and equipment removed from existing construction in completed Work, except as specifically permitted by the Contract Documents.

1.3 TRANSPORTATION AND HANDLING

- A. Coordinate delivery of Products to prevent conflict with Work and adverse conditions at site.
- B. Transport and handle Products in accordance with manufacturer's instructions.
- C. Promptly inspect shipments to ensure that Products comply with requirements of Contract Documents, are undamaged, and quantities are correct.
- D. Provide equipment and personnel to handle products by methods to prevent damage.

1.4 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturer's instructions with manufacturer's seals and labels intact and legible.
- B. Store Products on site unless prior written approval to store off site has been obtained from Owner.
- C. Store Products subject to damage by elements in weathertight enclosures. Maintain temperature and humidity within ranges required by manufacturer's instructions.
- D. Exterior Storage:
 - 1. Store fabricated Products above ground; prevent soiling and staining.
 - 2. Cover products subject to deterioration with impervious sheet coverings; provide ventilation to prevent condensation.
 - 3. Store loose granular materials in well drained area on solid surfaces; prevent mixing with foreign matter.
- E. Arrange storage areas to permit access for inspection. Periodically inspect stored products to verify that products are undamaged and in acceptable condition.

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT PRODUCT REQUIREMENTS

SECTION 01 6000 – Page 2 of 2

1.5 REUSE OF EXISTING MATERIALS

- A. Carefully remove, handle, protect, and store Products.
- B. Clean and refinish Products to original or specified condition.
- C. Restore operable components to working condition.
- D. Arrange and pay for transportation, storage, and handling of Products requiring off site storage, restoration, or renovation.

1.6 PRODUCT OPTIONS

- A. Products specified by reference standard only:
 - 1. Select any Product meeting the specified standard.
 - 2. Submit Product Data to substantiate compliance of proposed Product with specified requirements.
- B. Products specified by naming two or more acceptable Products: Select any named Product.
- C. Products specified by stating that the Contract Documents are based on a Product by a single manufacturer followed by the statement "Equivalent products by the following manufacturers are acceptable":
 - 1. Select the specified Product or a Product by a named manufacturer having equivalent or superior characteristics to the specified Product and meeting the requirements of the Contract Documents.
 - 2. If the specified Product is not selected, submit Product Data to substantiate compliance of proposed Product with specified requirements.
 - 3. The specified Product establishes the required standard of quality.
- D. Products specified by naming one or more Products followed by "or approved substitute" or similar statement:
 - 1. Submit a substitution request under provisions of Section 01 2500 for Products not listed.
 - 2. The specified Product establishes the required standard of quality.
- E. Products specified by naming one or more Products or manufacturers followed by the statement "Substitutions: Under provisions of Division 01":
 - 1. Submit a substitution request under provisions of Section 01 2500 for Products not listed.
 - 2. The specified Product establishes the required standard of quality.
- F. Products specified by naming one Product followed by the statement "Substitutions: Not permitted": Substitutions will not be allowed.
- G. Products specified by required performance or attributes, without naming a manufacturer or Product:
 - 1. Select any Product meeting specified requirements.
 - 2. Submit Product Data to substantiate compliance of proposed Product with specified requirements.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
FIELD ENGINEERING**

SECTION 01 7123 – Page 1 of 2

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Survey and field engineering.
 - 2. Submittals.
 - 3. Records.
- B. Provide and pay for field engineering services required for Project:
 - 1. Survey work required in execution of Work.
- C. Work includes preparation of an Existing Grade Topo Map Survey to confirm existing grades are as indicated herein.
- D. Work includes existing building pad soils compaction tests and any required corrective action.
- E. Other professional engineering services specified or required to execute Contractor's construction methods.
- F. Original undisturbed site geotechnical report is available from the Owner on request.

1.2 QUALIFICATIONS

- A. Surveyor: Qualified land surveyor, licensed in State in which project is located.
- B. Soils Engineer: Registered professional engineer of discipline required for specific service on Project. Licensed in State in which project is located.

1.3 SUBMITTALS

- A. Submit documentation to verify accuracy of field engineering work upon Engineer or Architect's request.
- B. Submit certification that elevations and locations of improvements are in conformance with Contract Documents.

1.4 SURVEY REFERENCE POINTS

- A. Existing horizontal and vertical control points for project are those designated on Drawings.
- B. Locate, verify, and protect control points prior to beginning Work; preserve permanent reference points during construction.

1.5 PROJECT SURVEY REQUIREMENTS

- A. Establish minimum of two permanent bench marks on site, referenced to survey control points. Record locations on Project Record Documents.
- B. Establish lines and levels, locate and lay out, by instrumentation:
 - 1. Site improvements:
 - a. Stakes for grading, fill, and topsoil placement.
 - b. Utility slopes and invert elevations.
 - 2. Building foundation and column locations, floor elevations, and other controlling dimensions.
 - 3. Controlling lines and levels required for mechanical and electrical trades.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
FIELD ENGINEERING**

SECTION 01 7123 – Page 2 of 2

- C. Verify property corners, easements, building setbacks, and horizontal control dimensions with information contained in Contract Documents.
- D. Promptly notify Engineer or Architect of any errors or discrepancies noted; await instructions prior to proceeding with Work.

1.6 RECORDS

- A. Maintain accurate log of control and survey work.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT CONSTRUCTION WASTE MANAGEMENT

SECTION 01 7419 – Page 1 of 2

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Construction waste management goals, plan, and records.

1.2 WASTE MANAGEMENT GOALS

- A. Reuse, salvage, or recycle non-hazardous waste materials.
- B. Minimize waste sent to landfills and incinerators.
- C. Prioritize non-hazardous construction waste management in following order:
 - 1. Reduce amount of waste generated.
 - 2. Reuse material through on-site reuse or off-site salvaging, including sale or donation.
 - 3. Recycle material including diverting materials for secondary uses whenever economically feasible.
 - 4. Dispose of materials with no practical use or economic benefit at landfill.

1.3 WASTE MANAGEMENT

- A. Pro-actively manage construction and demolition waste:
 - 1. Practice efficient waste management when sizing, cutting, and installing products.
 - 2. Use all reasonable means to divert construction and demolition waste from landfills and incinerators, and to facilitate recycling and reuse.
 - 3. Return unused products and overages to supplier, or donate to non-profit group.
 - 4. Carefully install products; avoid removal of ill-timed and poorly installed products.
 - 5. Use centralized cutting areas to facilitate waste collection.
 - 6. Deliver, store, and handle products to prevent damage.
- B. Require subcontractors and suppliers to participate in waste management efforts.
- C. Construction waste includes:
 - 1. Products from demolition and removal, excluding excavated soil, and land-clearing debris.
 - 2. Excess and unusable construction products.
 - 3. Packaging materials for construction products.
 - 4. Other materials generated during construction process but not incorporated into the Work.
- D. Give consideration to:
 - 1. Availability of viable recycling markets.
 - 2. Condition of materials.
 - 3. Ability to provide material in suitable condition and in quantities acceptable to available markets.
 - 4. Time constraints imposed by internal project completion mandates.
- E. Be responsible for implementation of special programs involving rebates and similar incentives related to recycling of waste.
- F. Revenues and other savings obtained for salvage and recycling accrue to Contractor.
- G. Ensure that firms and facilities used for recycling, reuse, and disposal have legal permits for intended uses.

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CONSTRUCTION WASTE MANAGEMENT**

SECTION 01 7419 – Page 2 of 2

1.4 QUALITY ASSURANCE

- A. Review and discuss waste management plan implementation and progress at Preconstruction Conference and Progress Meetings.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Designate separate areas to facilitate separation of materials for potential recycling, salvage, reuse and return.
- B. Clearly identify areas and receptacles.
- C. Keep storage areas and receptacles clean and orderly; prevent contamination of materials.
- D. Monitor storage areas; correct problems and implement preventative measures.

1.6 TRAINING

- A. Provide training of waste management methods to be used at appropriate stages of Project.
- B. Require participation of all subcontractors.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 WASTE COLLECTION

- A. Provide containers and storage areas to facilitate waste management, clearly identified.
- B. Handle recyclable materials to prevent contamination by incompatible products and materials.
- C. Separate materials by:
 - 1. Placing into marked separate containers, then transporting to recycling facility.
 - 2. Placing into single container, then transporting to recycling facility for separation.

3.2 DISPOSAL

- A. Dispose of nonhazardous waste materials that cannot be reused, recycled, or salvaged at licensed landfill or incinerator.
- B. Handle, store, and dispose of hazardous wastes in accordance with applicable codes, ordinances, rules, and regulations.

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
CLOSEOUT PROCEDURES**

SECTION 01 7700 – Page 1 of 4

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Closeout procedures.
 - 2. Final cleaning.
 - 3. Adjusting.
 - 4. Project record documents.
 - 5. Operation and maintenance data.
 - 6. Warranties.
 - 7. Spare parts and maintenance materials.
 - 8. Starting of systems.
 - 9. Demonstration and instructions.

1.2 CLOSEOUT PROCEDURES

- A. Final Inspection:
 - 1. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with the Contract Documents and ready for Engineer or Architect's inspection.
- B. Submit Final Application for Payment showing original Contract Sum, adjustments, previous payments, retainage withheld from previous payments, and sum remaining due.
- C. Closeout Submittals:
 - 1. Evidence of compliance with requirements of governing authorities.
 - 2. Certificate of Occupancy.
 - 3. Project Record Documents.
 - 4. Operation and Maintenance Data.
 - 5. Warranties.
 - 6. Keys and keying schedule.
 - 7. Spare parts and maintenance materials.
 - 8. Evidence of payment of Subcontractors and suppliers.
 - 9. Final lien waiver.
 - 10. Certificate of insurance for products and completed operations.
 - 11. Consent of Surety to final payment.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean surfaces exposed to view:
 - 1. Clean glass.
 - 2. Remove temporary labels, stains and foreign substances.
 - 3. Polish transparent and glossy surfaces.
 - 4. Vacuum carpeted surfaces; damp mop hard surface flooring.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean or replace filters of operating equipment.
- E. Clean debris from roofs and drainage systems.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT CLOSEOUT PROCEDURES

SECTION 01 7700 – Page 2 of 4

- G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.4 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain following record documents on site; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Material Safety Data Sheets.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Make entries neatly and accurately.
- E. Label each set or volume with title "PROJECT RECORD DOCUMENTS", project title, and description of contents.
 - 1. Organize contents according to Project Manual table of contents.
 - 2. Provide table of contents for each volume.
- F. Drawings: Mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Drawings.
- G. Specifications: Mark each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- H. Shop Drawings: Mark each item to record actual construction including:
 - 1. Field changes of dimension and detail.
 - 2. Details not on original Shop Drawings.
- I. Submit two printed copies, also submit electronically in Adobe PDF format.

1.6 OPERATION AND MAINTENANCE DATA

- A. Identify as "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT CLOSEOUT PROCEDURES

SECTION 01 7700 – Page 3 of 4

- B. Contents:
 - 1. Directory: List names, addresses, and telephone numbers of Engineer or Architect, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Operation and maintenance instructions: Arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
 - 3. Project documents and certificates including:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Copies of warranties and bonds.
- C. Submittal:
 - 1. Submit two printed copies, also submit electronically in Adobe PDF format at least 15 days prior to final inspection.
 - 2. Engineer or Architect will notify Contractor of any required revisions after final inspection.
 - 3. Revise content of documents as required prior to final submittal.
 - 4. Submit two copies of revised documents, and submit revised documents electronically in Adobe PDF format within 10 days after final inspection.

1.7 WARRANTIES

- A. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.
- B. Include Table of Contents.
- C. Submit two printed copies, also submit electronically in Adobe PDF format along with final Application for Payment.
- D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

1.8 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.
- B. Deliver to Project site in location as directed; obtain receipt prior to final payment.

1.9 STARTING OF SYSTEMS

- A. Notify Owner and Engineer or Architect at least seven days prior to startup of each system or piece of equipment.

SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT CLOSEOUT PROCEDURES

SECTION 01 7700 – Page 4 of 4

- B. Prior to beginning startup verify that:
 - 1. Lubrication has been performed.
 - 2. Drive rotation, belt tension, control sequences, tests, meter readings, and electrical characteristics are within manufacturer's requirements.
 - 3. Utility connections and support components are complete and tested.
- C. Execute start-up under supervision of applicable manufacturer's representative or Contractor's personnel in accordance with manufacturers' instructions.
- D. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to startup, and to supervise placing equipment or system in operation.
- E. Submit written report that equipment or system has been properly installed and is functioning correctly.

1.10 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Utilize Operation and Maintenance Manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed upon times, at equipment location.
- E. Prepare and insert additional data in Operation and Maintenance Manuals when need for additional data becomes apparent during instruction.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

**SHELBY COUNTY PUBLIC SAFETY RADIO TOWERS PROJECT
EROSION AND SEDIMENT CONTROL**

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PART I – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of the Contract including General and Supplementary Conditions and General Requirements apply to the work specified in this section.
- B. Federal, State and Local Codes shall apply to the control of storm water runoff and siltation from the site.

1.2 SUMMARY

- A. Furnish all labor, equipment, materials and services necessary for the construction of and maintaining project BMP's. Included is the installation of any additional BMP's which may become necessary due to site conditions and inspection reports as ordered by the Engineer/Construction Manager.
- B. The Contractor is solely responsible for controlling runoff and siltation from the project site, throughout all areas of the project site and all adjacent sites which may be damaged by sediment transport and deposition during construction.
- C. An erosion control plan is included in the plans. Prior to any construction activities, the Contractor must totally implement and maintain the BMP's. Full implementation of the Construction Best Management Practice Plan and/or erosion control plan is a priority of this project and is a requirement of the Contractor. The Contractor shall abide by the regulations given in the ADEM Administrative Code, Chapter 335-6-12.
- D. The Owner and/or their representative, at their discretion, shall perform or employ to perform written weekly site inspections of the total project areas. The person doing the inspections and written reports must be a Qualified Credentialed Inspector (QCI). Any rain event exceeding $\frac{3}{4}$ inch over a 24 hour period shall require a special inspection and written reports. All reports shall be copied to the Owner or their designated representative.

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- E. All maintenance and re-installation of existing BMP's shall be the responsibility of the Contractor and at no additional cost to the Owner. New BMP's required and not on the Erosion and Sediment Control Plan or specifications shall be the responsibility of the Contractor at no expense to the Owner.
- F. The contractor shall be responsible for storm water runoff and sediment control on the project site until final completion of the project and/or at the satisfaction of the Owner.
- G. The Owner, Engineer and their employees shall be held harmless from any issues resulting from any violations.

1.3 QUALITY ASSURANCE

- A. Reference Codes and Standards: Comply with applicable provisions and recommendations of the following:
 - 1) Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas.
 - 2) The Erosion and Sediment Control plan.
 - 3) Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction (2022) Edition, Section 665 Temporary Erosion and Sediment Control and Section 107.21 Stormwater Management, Spill Prevention and Debris Removal.
- B. Pre-Construction Conference for Earthwork, Site Clearing, and Erosion and Sediment Control shall be conducted at the Project site prior to beginning work. Representatives of the Contractor, Engineer and/or Architect will be present to discuss execution of this portion of the work.

1.4 PROJECT CONDITIONS

- A. It shall be the Contractor's sole responsibility to inspect the existing site conditions to determine any discrepancies which would affect his scope of work and to notify the Engineer/Architect in writing of any such discrepancies prior to beginning work.

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PART 2 – PRODUCTS

Acceptable Manufacturers: All products used shall be in compliance acceptable to the guidelines as set forth by the ALDOT Standard Specifications (2022) Edition, Section 665 Temporary Soil Erosion and Sediment Control and Section 659 Rolled Erosion Control Products.

2.1 MATERIALS

- A. Rolled Erosion Control Products (RECP) – Use products, materials and guidelines as noted in ALDOT Standard Specifications (2022) Edition, Section 659 for all applicable slopes. Follow guidelines noted in ALDOT 2022 Standard Specifications for different slopes and uses of rolled erosion control products (RECP).
- B. Temporary Rip Rap: Shall be class 2 unless noted otherwise on the plans. Riprap shall meet the requirement given in ALDOT Standard Specifications (2022) Edition, Section 814.
- C. Hay Bales shall contain a minimum of 5 cubic feet of material and having a weight of not less than 35 pounds with a minimum length of 3 feet.
- D. Silt Fence shall be constructed of a geotextile filter supported between posts with a wire mesh backing. Silt fence shall meet the requirements given in AASHTO M 288. The geotextile filter shall meet the requirements given in (ALDOT 2022) Section 810.01. All silt fences shall be Type “A” as noted on the plans.
- E. Inlet Protection shall be manufactured devices consisting of filter fabric held in place by a rigid frame. The frame should be strong enough to support the weight of the silt that accumulates on the filter. The use of sand bags, wattles, silt fence and hay bales must be approved by the Engineer in advance of use.
- F. Temporary Gravel Construction Entrance shall consist of a minimum layer of 6 inches deep of ALDOT Number 4 or approved equal coarse aggregate atop filter fabric as specified in the Alabama handbook.
- G. Ditch Checks may be constructed of any combination of rock, sand bags, hay bales, wattles and silt fence or any other approved material at locations as shown on the plans. Materials used must meet ALDOT Standard Specifications (2022) Edition.

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PART 3 – EXECUTION

3.1 INSTALLATION OF CBMPP OR EROSION AND SEDIMENT CONTROL PLAN

- A. Implement and construct the Construction Best Management Practices Plan (CBMPP) and/or erosion control plan as required. Perform such work and use materials noted and as set forth by the guidelines of the Alabama Handbook and ALDOT Standard Specifications 2022 Edition for Temporary Erosion and Sediment Control, Section 665.
- B. Protect the project site, streams, lakes, reservoirs, drainage systems and adjacent property owners from contamination of siltation and storm water runoff or harmful materials.
- C. Additional BMP's or required maintenance of existing BMP's shall be the responsibility of the contractor. Additional BMP's, and required maintenance of existing BMP's, shall be determined by the Owner's/Engineer's QCI/QCP or other applicable agent's inspection reports and as directed by the Engineer.
- D. The installation of silt fences shall be in conformance with the silt fence manufacturer's recommendations. All silt fences shall be properly keyed into the earth at the toe. All silt fence shall be maintained to function properly and cleaned of silt accumulation at proper intervals.
- E. Hay Bales shall be installed using key ways cut into grade or aggregate fill bedding as required. All hay bales shall be properly oriented and staked. Silt trapped by hay bale installation shall be removed and properly disposed of at proper intervals.
- F. Riprap shall be placed in accordance with ALDOT Standard Specifications (2022) Edition, Section 610 for class 2 riprap. All riprap installation shall be as directed by the Engineer or as indicated on the plans. The contractor shall maintain all riprap protection throughout the project timeline until the project is accepted. Any material displaced by any cause prior to acceptance of the project shall be replaced at the Contractor's expense. All riprap placed in unauthorized locations without prior approval of the Engineer shall be considered waste and placed at no cost to the owner.
- G. Erosion Control Netting shall be placed in accordance with ALDOT Standard Specifications (2022) Edition, Section 659. All areas to be covered by erosion control netting shall be as shown on the plans or as field conditions necessitate. Follow the

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guidelines for applicable slope requirements. Note differences between temporary and permanent products.

- H. Inlet Protection shall be installed at locations and in accordance with the requirements shown on the plans for the appropriate stages of construction or as directed by the Engineer. All products shall be installed as per manufacturer's recommendations.
- I. Ditch checks shall be constructed at locations shown on the plans and BMP requirements or as directed by the engineer. Materials and products used may include rock, sand bags, hay bales, silt fence, wattles or other approved materials necessary to control sediment runoff and siltation. Silt trapped by check dams shall be removed and properly disposed of during periodic checking and maintenance.
- J. Dust Control is the responsibility of the Contractor and may be required at any time including weekends and holidays. The contractor shall prevent visible dust from leaving the project site by effective means as approved by the Engineer.
- K. All temporary soil erosion and sediment control BMP's shall be removed from the project site when no longer needed or as shown otherwise on the plans, BMP requirements, or as directed by the Engineer. Removal of temporary controls shall be only after permanent controls are in place and providing the controls of soil erosion and sediment control of the project site. Permanent control must be effective before the removal of all temporary BMP's happens. The removal of all temporary soil erosion and sediment control BMP's shall be the responsibility of the Contractor.
- L. Outlet Protection shall be as shown on the plans or as directed by the Engineer. They shall be installed in accordance with the details shown on the plans and as soon as practicable after the completion of the drainage structures.
- M. Storm Water Detention Basin shall be installed and erected as indicated on the plans. All materials used shall be in accordance with ADEM Guidelines and the maintenance of the Storm Water Detention Basin shall be the sole responsibility of the Contractor.
- N. After stabilization of the disturbed areas have been achieved, the Contractor shall remove and dispose of all temporary BMP's and dress out those areas to the proper line and grades.

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- O. Permanent Storm Water Detention Basin shall be cleaned out, dressed out, surrounding areas seeded and mulched, etc., and general area free of any garbage, debris, or any items which should not be left onsite.
- P. A final inspection of all BMP's will be performed by the Engineer/Architect representatives and Contractor personnel near the date of Substantial Completion. Any and all deficiencies noted shall be corrected by the Contractor at no additional cost to the Owner prior to Final Acceptance of the contract.
- Q. Contractor shall be required to maintain BMP's for a period of 45 days after date of Final Acceptance with the time frame beginning at the date of Final Acceptance.

3.2 CLEANUP AND FINAL ACCEPTANCE

- A. All trash and surplus undesirable material of every description resulting from work shall be removed from the site.
- B. At the time of final acceptance of work performed under the contract, the work covered by this section shall be complete in every respect and in proper operating and/or functioning condition. Any defects discovered in the system subsequent to this inspection shall have been corrected. Final acceptance shall not be complete until all work has been inspected and accepted by Architect/Engineer and local authority having jurisdiction. All utilities to be maintained by local authorities shall be accepted by letter with original being submitted to Architect/Engineer.
- C. All existing improvements such as, but not limited to, lawns, drives, pavements, sidewalks, and any other improvement destroyed or damaged as a result of the work performed shall be restored to its original or better condition at Contractor's expense at no additional cost to the Owner before final acceptance is granted.

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CAST-IN-PLACE CONCRETE**

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PART 1 - GENERAL

1.1 SUMMARY:

- A. Section Includes:
 - 1. Formwork.
 - 2. Reinforcing.
 - 3. Cast-in place concrete including mix design, placement procedures, and finishes.
- B. Cast-in-place concrete includes the following:
 - 1. Foundations and footings.
 - 2. Slabs-on-grade.
- C. Related Documents: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- D. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
 - 1. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others if requested by Engineer or Architect.
 - 2. Shop drawings for reinforcement detailing fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, bent bar diagrams, and arrangement of concrete reinforcement. Include special reinforcing required for openings through concrete structures.
 - 3. Shop drawings for formwork indicating fabrication and erection of forms for specific finished concrete surfaces. Show form construction including jointing, special form joints or reveals, location and pattern of form tie placement, and other items that affect exposed concrete visually. Formwork drawings shall bear the seal and signature of a Professional Engineer registered in the State of Alabama.
 - 4. Engineer or Architect's review is for general architectural applications and features only. Designing formwork for structural stability and efficiency is Contractor's responsibility.
 - 5. Samples of materials as requested by Engineer or Architect, including names, sources, and descriptions, as follows:
 - a. Color finishes.
 - b. Normal weight aggregates.
 - c. Reglets.
 - d. Waterstops.
 - e. Vapor retarder/barrier.
 - 6. Laboratory test reports for concrete materials and mix design test.
 - 7. Material certificates in lieu of material laboratory test reports when permitted by Engineer or Architect. Material certificates shall be signed by manufacturer and Contractor, certifying that each material

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item complies with or exceeds specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements.

8. Minutes of preinstallation conference.

1.2 QUALITY ASSURANCE:

- A. Codes and Standards: Comply with provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 1. ACI 301, "Specifications for Structural Concrete for Buildings".
 2. ACI 302, "Guide for Concrete Floor and Slab Construction".
 3. ACI 304, "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete".
 4. ACI 305, "Hot Weather Concreting".
 5. ACI 306, "Cold Weather Concreting".
 6. ACI 309, "Guide for Consolidation of Concrete".
 7. ACI 311, "Recommended Practice for Concrete Inspection".
 8. ACI 318, "Building Code Requirements for Reinforced Concrete".
 9. ACI 347, "Recommended Practice for Concrete Formwork".
 10. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."
 11. American Welding Society, AWS D1.4 "Structural Welding Code - Reinforcing Steel".
- B. Concrete Testing Service: Engage a testing agency acceptable to Engineer or Architect to perform material evaluation tests and to design concrete mixes.
 1. Refer to Division 1 Section "Special Conditions" for additional information and requirements.
- C. Materials and installed work may require testing and retesting at any time during progress of Work. Tests, including retesting of rejected materials for installed Work, shall be done at Owner's expense.
- D. Pre-installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings" and the following:
 1. At least 35 days prior to submitting design mixes, conduct a meeting to review detailed requirements for preparing concrete design mixes and to determine procedures for satisfactory concrete operations. Review requirements for submittals, status of coordinating work, and availability of materials. Establish preliminary work progress schedule and procedures for materials inspection, testing, and certifications. Require representatives of each entity directly concerned with cast-in-place concrete to attend conference, including, but not limited to, the following:
 - a. Contractor's superintendent.
 - b. Agency responsible for concrete design mixes.
 - c. Agency responsible for field quality control.
 - d. Ready-mix concrete producer.
 - e. Concrete subcontractor.
 - f. Primary admixture manufacturers.

PART 2 - PRODUCTS

2.1 FORM MATERIALS:

- A. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials to provide continuous, straight, smooth, exposed surfaces. Care shall be taken with the formwork on the bottom of the slabs, which will be exposed ceilings, to avoid the need for patching or repairs following the removal of the formwork. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.
 - 1. Use overlaid plywood complying with U.S. Product Standard PS-1 "A-C or B-B High Density Overlaid Concrete Form," Class I.
 - 2. Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood," Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.
- B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or another acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Form Release Agent: Provide commercial formulation form release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- D. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units that will leave no metal closer than -1/2 inches to the plane 1 of the exposed concrete surface.
- E. Provide ties that, when removed, will leave holes not larger than 1 inch in diameter in the concrete surface.

2.2 REINFORCING MATERIALS:

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- B. Steel Wire: ASTM A 82, plain, cold-drawn steel.
- C. Welded Wire Fabric: ASTM A 185, welded steel wire fabric.
- D. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar- type supports complying with CRSI specifications.
 - 1. For slabs-on-grade, use concrete bricks or supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or

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stainless steel (CRSI, Class 2).

- E. Bar and Rod Mats: ASTM A 184 "Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement".
- F. Threaded Dowels: Continuous threaded high-strength steel bars equal to "Lasstud" by Richmond Screw Anchor Co., Inc. Provide inserts compatible with dowels, designed for ultimate pull-out force indicated on the drawings.
- G. Mechanical Splices: Equal to "Cadweld Rebar Splices", as manufactured by Erico Products, Inc., "C" Series, for developing 125% of minimum ASTM specified yield strengths, unless otherwise noted on drawings.
- H. Steel Shapes, Plates and Rods: Conform to ASTM A 36, "Specification for Structural Steel".
- I. Do Not Weld Reinforcing Steel: Unless specifically noted on drawings. If welding is shown, conform to latest revision of AWS D12.1, "Reinforcing Steel Welding Code of the American Welding Society". Perform all welding with certified welders qualified per AWS.

2.3 CONCRETE MATERIALS:

- A. Portland Cement: ASTM C 150, Type I.
 - 1. Use one brand of cement throughout Project unless otherwise acceptable to Engineer or Architect.
- B. Fly Ash: ASTM C 618, Type F.
 - 1. Limit use of fly ash to not exceed 25 percent of cement content by weight.
- C. Normal-Weight Aggregates: ASTM C 33 and as specified. Provide aggregates from a single source for exposed concrete.
 - 1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.
- D. Water: Potable.
- E. Admixtures, General: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
- F. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Air-Tite, Cormix Construction Chemicals.
 - b. Air-Mix or Perma-Air, Euclid Chemical Co.
 - c. Darex AEA or Daravair, W.R. Grace & Co.
 - d. MB-VR or Micro-Air, Master Builders, Inc.
 - e. Sealtight AEA, W.R. Meadows, Inc.
 - f. Sika AER, Sika Corp.
- G. Water-Reducing Admixture: ASTM C 494, Type A.

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- 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. PSI N, Cormix Construction Chemicals.
 - b. Eucon WR-75, Euclid Chemical Co.
 - c. WRDA, W.R. Grace & Co.
 - d. Pozzolith Normal or Polyheed, Master Builders, Inc.
 - e. Plastocrete 161, Sika Corp.

- H. High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Eucon 37, Euclid Chemical Co.
 - b. WRDA 19 or Daracem, W.R. Grace & Co.
 - c. Rheobuild or Polyheed, Master Builders, Inc.
 - d. Sikament 300, Sika Corp.

- I. Water-Reducing, Accelerating Admixture: ASTM C 494, Type E.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Accelguard 80, Euclid Chemical Co.
 - b. Daraset, W.R. Grace & Co.
 - c. Pozzutec 20, Master Builders, Inc.

- J. Water-Reducing, Retarding Admixture: ASTM C 494, Type D.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Eucon Retarder 75, Euclid Chemical Co.
 - b. Daratard-17, W.R. Grace & Co.
 - c. Pozzolith R, Master Builders, Inc.
 - d. Protard, Prokrete Industries.
 - e. Plastiment, Sika Corporation.

2.4 RELATED MATERIALS:

- A. Reglets: Where sheet flashing or bituminous membranes are terminated in reglets, provide reglets of not less than 0.0217-inch-thick (26-gage) galvanized sheet steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.

- B. Dovetail Anchor Slots: Hot-dip galvanized sheet steel, not less than 0.0336 inch thick (22 gage) with bent tab anchors. Fill slot with temporary filler or cover face opening to prevent intrusion of concrete or debris.

- C. Waterstops: Provide strip applied, flat, dumbbell-type or centerbulb-type waterstops at construction joints and other joints as indicated. Size to suit joints.
 - 1. Flexible Butyl Rubber Strip Applied Waterstops:
 - a. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 - 1. Swellstop, as manufactured by Greenstreak.
 - 2. Synkoflex.

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2. Rubber Waterstops: Corps of Engineers CRD-C 513.
 - a. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 1. The Burke Co.
 2. Progress Unlimited.
 3. Williams Products, Inc.
 3. Polyvinyl Chloride Waterstops: Corps of Engineers CRD-C 572.
 - a. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 1. The Burke Co.
 2. Greenstreak Plastic Products Co.
 3. W.R. Meadows, Inc.
 4. Progress Unlimited.
 5. Schlegel Corp.
 6. Vinylex Corp.
- D. Vapor Barrier, General Use (except as indicated below):
- a. Product: Plastic vapor barrier. Include manufacturer's recommended adhesive or pressure-sensitive tape for sealing joints, laps and penetrations, preformed boots for penetrations, and all other components required for a complete, proper and vaporproof installation.
 - 1) Classification: Must exceed ASTM E 1745 Class "A".
 - 2) Permeance: ASTM E96: 0.03 perms or less.
 - 3) Thickness: Not less than 10 mils.
 - b. Manufacturer/Product:
 - 1) "Moistop Ultra 10", Fortifiber Building Systems Group.
 - 2) "Perminator 10 mil", W.R. Meadows
 - 3) "Griffolyn Type-105", Reef Industries, Inc.
 - 4) "Stego Wrap Class A", Stego Industries, LLC.
 - 5) "VaporBlock VB10", Raven Inc.
 - 6) "Viper Vaporcheck 10-mil", Insulation Solutions, Inc.
 - c. Locations for Use: Continuous below all new and opened building slabs, and other structural slabs, porches, stoops, pads, covered (below roofs) areas, etc., on grade, and turned-down to tops of footings.
- E. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- F. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
1. Waterproof paper.
 2. Polyethylene film.
 3. Polyethylene-coated burlap.
- G. Typical Special Sealing and Curing Compound at Interior Concrete Floors which will Remain Exposed in Completed Construction – EXCEPT NOT FOR FLOORS TO BE STAINED:
1. Product/Manufacturer: "Ashford Formula", as manufactured by Curecrete Chemical Company, Inc.; Springville, UT; Phone: 800-998-5664 or (801) 489- 5663.
 2. Provide materials, preparation and installation of the following product, in strict compliance with manufacturer's current written

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instructions and recommendations.

- H. Coordinate the use (or non-use) of membrane-forming compounds with the suppliers of finishes to be provided on concrete surfaces. Do not use membrane-forming compounds at locations where they may have a detrimental effect on the permanent installation of the finish materials, floor coverings, their adhesives, setting beds, etc. At such locations, utilize only dissipating type compounds.
- I. Liquid Membrane-Forming Curing Compound: Liquid-type membrane-forming curing compound complying with ASTM C 309, Type I, Class A.
- J. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Spartan-Cote, The Burke Co.
 - b. Day-Chem Cure and Seal, Dayton Superior Corp.
 - c. Eucocure, Euclid Chemical Co.
 - d. Horn Clear Seal, A.C. Horn, Inc.
 - e. L&M Cure R, L&M Construction Chemicals, Inc.
 - f. Masterkure, Master Builders, Inc.
 - g. CS-309, W.R. Meadows, Inc.
 - h. Kure-N-Seal, Sonneborn-Chemrex.
- K. V.O.C. Compliant Acrylic Curing and Sealing Type (30 Percent): Liquid type membrane- forming curing compound complying with ASTM C 309, Type 1, Class A and B. Provide 30 percent solids minimum, for surfaces indicated to be sealed.
- L. Safe Cure and Seal: 30 percent (J-19), Dayton Superior Inc.
- M. Evaporation Control:
 - 1. Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Eucobar, Euclid Chemical Co.
 - 2. E-Con, L&M Construction Chemicals, Inc.
 - 3. Confilm, Master Builders, Inc.
- N. V.O.C. Compliant Evaporation Control: Sure Film (J-74), Dayton Superior Inc.
- O. Underlayment Compound: Free-flowing, self-leveling, pumpable, cement-based compound for applications from 1 inch thick to feathered edges.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. K-15, Ardex, Inc.
 - b. LevelLayer II, Dayton Superior Corp.
 - c. Flo-Top, Euclid Chemical Co.
 - d. Gyp-Crete, Gyp-Crete Corp.
 - e. Levelex, L&M Construction Chemicals, Inc.

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- f. Underlayment 110, Master Builders, Inc.
 - g. Thoro Underlayment Self-Leveling, Thoro System Products.
- P. Bonding Agent: Polyvinyl acetate or acrylic base.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Polyvinyl Acetate (Interior Only):
 - 1. Superior Concrete Bonder, Dayton Superior Corp.
 - 2. Euco Weld, Euclid Chemical Co.
 - 3. Weld-Crete, Larsen Products Corp.
 - 4. Everweld, L&M Construction Chemicals, Inc.
 - 5. Ready Bond, Symons Corp.
 - b. Acrylic or Styrene Butadiene:
 - 1. Acrylic Bondcrete, The Burke Co.
 - 2. Day-Chem Ad Bond, Dayton Superior Corp.
 - 3. SBR Latex, Euclid Chemical Co.
 - 4. Daraweld C, W.R. Grace & Co.
 - 5. Hornweld, A.C. Horn, Inc.
 - 6. Everbond, L&M Construction Chemicals, Inc.
 - 7. Acryl-Set, Master Builders Inc.
 - 8. Intralok, W.R. Meadows, Inc.
 - 9. Sonocrete, Sonneborn-Chemrex.
- Q. Epoxy Adhesive: ASTM C 881, two-component material suitable for use on dry or damp surfaces. Provide material type, grade, and class to suit Project requirements.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Resi-Bond (J-58), Dayton Superior.
 - b. Euco Epoxy System #452 or #620, Euclid Chemical Co.
 - c. Epoxite Binder 2390, A.C. Horn, Inc.
 - d. Epabond, L&M Construction Chemicals, Inc.
 - e. Concsive Standard Liquid, Master Builders, Inc.
 - f. Rezi-Weld 1000, W.R. Meadows, Inc.
 - g. Sikadur 32 Hi-Mod, Sika Corp.
- R. Interior Epoxy Sealer: Use a maximum 35 percent type.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Epoxy-Plus; Dayton Superior Inc.
 - b. Eucopoxy 1; Euclid Chemical
 - c. Oauerseal 30E; Non-Crete, Inc.
 - d. Rescon R117; Symons Corp.
 - e. Son-No-Mar; Sonneborn, Div./Chem Rex Inc.
 - f. Super Seal 35; L & M Const. Chem. Co.
- S. V.O.C. Compliant Urethane Sealer:
 - 1. Day Chem Urethane V.O.C. (J-39); Dayton Superior Inc.

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2.5 PROPORTIONING AND DESIGNING MIXES:

- A. A. Prepare design mixes for each type and strength of concrete by either laboratory trial mixtures or field experience methods as specified in ACI 318-05 Section 5.3. If trial mixtures method used, use an independent testing facility acceptable to Engineer or Architect for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing, unless otherwise acceptable to Engineer or Architect.
- B. Trial mix designs and strength tests, made by qualified independent material laboratory, in accordance with ACI 318-05 Section 5.3 are required for the following types of concrete:
 - 1. Normal weight concrete with specified strength in excess of 4000 psi.
 - 2. All concrete designs for which a suitable experience record is not available.
- C. Mix design based on a record of past performance in accordance with ACI 318-05 Section 5.3, may be provided by qualified concrete supplier or precast concrete manufacturer for concrete designs. Mix design shall be certified by an independent testing laboratory.
- D. All concrete mix designs shall include the following information:
 - 1. Proportions of cement, fine and coarse aggregate and water.
 - 2. Water/cement ratio, design strength, slump and air content.
 - 3. Type of cement and aggregates.
 - 4. Type and dosage of all admixtures.
 - 5. Type, color and dosage of integral coloring compounds, where applicable.
 - 6. Special requirements for pumping.
 - 7. Any special characteristics of the mix which require precautions in the mixing, placing or finishing techniques to achieve the finished product specified.
- E. Submit written reports to Engineer or Architect of each proposed mix for each class of concrete at least 15 days prior to start of Work. Do not begin concrete production until proposed mix designs have been reviewed by Engineer or Architect.
- F. Design mixes to provide normal weight concrete with the following properties as indicated on drawings and schedules:
 - 1. 4000-psi, 28-day compressive strength.
 - 2. 3000-psi, 28-day compressive strength.
- G. Water-Cement Ratio: Provide concrete for following conditions with maximum water- cement (W/C) ratios as follows:
 - 1. Subjected to freezing and thawing: W/C 0.45.
 - 2. Subjected to deicers/watertight: W/C 0.40.
 - 3. Subjected to brackish water, salt spray, or deicers: W/C 0.40.
- H. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:

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1. Ramps and sloping surfaces: Not more than 3 inches.
 2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
 3. Concrete containing high-range water-reducing admixture (superplasticizer): Not more than 8 inches after adding admixture to site-verified 2-to-3-inch slump concrete.
 4. Other concrete: Not more than 5 inches or less than 3 inches.
- I. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by Engineer or Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Engineer or Architect before using in Work.

2.6 ADMIXTURES:

- A. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
- B. Use accelerating admixture in concrete slabs placed at ambient temperatures below 50 deg.F (10 deg.C).
- C. Use high-range water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water-cement ratios below 0.50.
- D. Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within the following limits:
 1. Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure:
 - a. 5.0 percent (moderate exposure); 6.0 percent (severe exposure) for 3/4- inch maximum aggregate.
 - b. 5.5 percent (moderate exposure); 7.0 percent (severe exposure) for 1/2- inch maximum aggregate.
- E. Other concrete not exposed to freezing, thawing, or hydraulic pressure, or to receive a surface hardener: 2 to 4 percent air. Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements of ASTM C 94, and as specified.
 1. When air temperature is between 85 deg.F (30 deg.C) and 90 deg.F (32 deg.C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 deg.F (32 deg.C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Coordinate the installation of joint materials, vapor retarder/barrier, and other related materials with placement of forms and reinforcing steel.

3.2 FORMS:

- A. General: Design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Formwork drawings shall bear the seal and signature of a Professional Engineer registered in the State of Alabama. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits:
 - 1. Provide Class A tolerances for concrete surfaces exposed to view.
 - 2. Provide Class C tolerances for other concrete surfaces.

Care shall be taken with the formwork on the bottom of the slabs, which will be exposed ceilings, to avoid the need for patching or repairs following the removal of the formwork.

- B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in the Work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent cement paste from leaking.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like for easy removal.
- D. Provide temporary openings for clean-outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

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- F. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.
- G. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.3 VAPOR RETARDER/BARRIER INSTALLATION:

- A. General: Place vapor retarder/barrier sheeting in position with longest dimension parallel with direction of pour.
- B. Lap joints 6 inches and seal with manufacturer's recommended mastic or pressure- sensitive tape.

3.4 PLACING REINFORCEMENT:

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as specified.
 - 1. Avoiding cutting or puncturing vapor retarder/barrier during reinforcement placement and concreting operations. Repair damages before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Engineer or Architect.
- D. Place reinforcement to maintain minimum coverages as indicated for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS:

- A. Construction Joints: Locate and install construction joints so they do not impair strength or appearance of the structure, as acceptable to Engineer or Architect.

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- B. Provide keyways at least 1-1/2 inches deep in construction joints in walls and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as indicated otherwise. Do not continue reinforcement through sides of strip placements.
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- E. Waterstops: Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint. Support and protect exposed waterstops during progress of Work. Field-fabricate joints in waterstops according to manufacturer's printed instructions.
- F. Isolation Joints in Slabs-on-Grade: Construct isolation joints in slabs-on-grade at points of contact between slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Joint fillers and sealants are specified in Section 07900, "Sealants and Joint Fillers".
- G. Contraction (Control) Joints in Slabs-on-Grade: Construct contraction joints in slabs-on- grade to form panels of patterns as shown. Use saw cuts 1/8 inch wide by one-fourth of slab depth or inserts 1/4 inch wide by one-fourth of slab depth, unless otherwise indicated.
 - 1. Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.
 - 2. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate.
 - 3. If joint pattern is not shown, provide joints not exceeding 15 feet in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays).
 - 4. Joint fillers and sealants are specified in Division 7 Section "Joint Sealants."

3.6 INSTALLING EMBEDDED ITEMS:

- A. General: Set and build into formwork anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached.
- B. Install reglets to receive top edge of foundation sheet waterproofing and to receive through- wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, relieving angles, and other conditions.

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- C. Install dovetail anchor slots in concrete structures as indicated on drawings.
- D. Forms for Slabs: Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.

3.7 PREPARING FORM SURFACES:

- A. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before placing reinforcement.
- B. Do not allow excess form-coating material to accumulate in forms or come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply according to manufacturer's instructions.
 - 1. Coat steel forms with a nonstaining, rust-preventative material. Rust-stained steel formwork is not acceptable.

3.8 CONCRETE PLACEMENT:

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. General: Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation at its final location.
- D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
 - 1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete complying with ACI 309.
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix to segregate.

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- E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until completing placement of a panel or section.
 - 1. Consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners.
 - 2. Bring slab surfaces to correct level with a straightedge and strike off. Use bull floats or darbies to smooth surface free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 - 3. Maintain reinforcing in proper position on chairs during concrete placement.
- F. Cold-Weather Placement: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- G. When air temperature has fallen to or is expected to fall below 40 deg.F (4 deg.C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg.F (10 deg.C) and not more than 80 deg.F (27 deg.C) at point of placement.
 - 1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
- H. Hot-Weather Placement: When hot weather conditions exist that would impair quality and strength of concrete, place concrete complying with ACI 305 and as specified.
 - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg.F (32 deg.C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
 - 3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.
 - 4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, as acceptable to Engineer or Architect.

3.9 FINISHING FORMED SURFACES:

- A. Rough-Formed Finish: Provide a rough-formed finish on formed concrete surfaces not exposed to view in the finished Work or concealed by other construction. This is the concrete surface having texture imparted by form-

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facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.

- B. Smooth-Formed Finish: Provide a smooth-formed finish on formed concrete surfaces exposed to view or to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or another similar system. This is an as-cast concrete surface obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Care shall be taken with the formwork on the bottom of the slabs, which will be exposed ceilings, to avoid the need for patching or repairs following the removal of the formwork. Repair and patch defective areas with fins and other projections completely removed and smoothed.
- C. Smooth-Rubbed Finish: Provide smooth-rubbed finish on scheduled concrete surfaces that have received smooth-formed finish treatment not later than 1 day after form removal.
 - 1. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.10 MONOLITHIC SLAB FINISHES:

- A. Scratch Finish: Apply scratch finish to monolithic slab surfaces to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and where indicated.
 - 1. After placing slabs, finish surface to tolerances specified in Section 3.11. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set with stiff brushes, brooms, or rakes.
- B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified; slab surfaces to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo; and where indicated.
 - 1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to tolerances specified in Section 3.11. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

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- C. Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or another thin film-finish coating system.
 - 1. After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances specified in Section 3.11. Grind smooth any surface defects that would telegraph through applied floor covering system.
- D. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply a trowel finish as specified, then immediately follow by slightly scarifying the surface with a fine broom.
- E. Nonslip Broom Finish: Apply a nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 - 1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer or Architect before application.

3.11 MISCELLANEOUS CONCRETE ITEMS:

- A. Filling In: Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as specified to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

3.12 CONCRETE CURING AND PROTECTION:

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

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- C. Curing Methods: Cure concrete by curing compound, by moist curing, by moisture- retaining cover curing, or by combining these methods, as specified.
1. Provide moisture curing by the following methods:
 - a. Keep concrete surface continuously wet by covering with water.
 - b. Use continuous water-fog spray.
 - c. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4-inch lap over adjacent absorptive covers.
 2. Provide moisture-retaining cover curing as follows:
 - a. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 3. Apply curing compound on exposed interior slabs and on exterior slabs, walks, and curbs as follows:
 - a. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - b. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.
- D. Curing Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces, by moist curing with forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
- E. Curing Unformed Surfaces: Cure unformed surfaces, including slabs, floor topping, and other flat surfaces, by applying the appropriate curing method.
1. Final cure concrete surfaces to receive finish flooring with a moisture-retaining cover, unless otherwise directed.

3.13 REMOVING FORMS:

- A. General: Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg.F (10 deg.C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.

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- B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.
- C. Form-facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

3.14 REUSING FORMS:

- A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable to Engineer or Architect.

3.15 CONCRETE SURFACE REPAIRS:

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removing forms, when acceptable to Engineer or Architect.
- B. Mix dry-pack mortar, consisting of one part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing.
 - 1. Cut out honeycombs, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
 - 2. For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- C. Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Engineer or Architect. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast

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cement cone plugs secured in place with bonding agent.

1. Repair concealed formed surfaces, where possible, containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.
1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
 2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.]
 3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to Engineer or Architect.
 4. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
- E. Perform structural repairs with prior approval of Engineer or Architect for method and procedure, using specified epoxy adhesive and mortar.
- F. Repair methods not specified above may be used, subject to acceptance of Engineer or Architect.

3.16 QUALITY CONTROL TESTING DURING CONSTRUCTION:

- A. General: The Owner will employ a testing agency to perform tests and to submit test reports.
- B. Sampling and testing for quality control during concrete placement may include the following, as directed by Engineer or Architect.
 1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - a. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.
 - b. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each

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- type of air-entrained concrete.
 - c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg.F (4 deg.C) and below, when 80 deg.F (27 deg.C) and above, and one test for each set of compressive-strength specimens.
 - d. Compression Test Specimen: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
- C. Compressive-Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yd. plus additional sets for each 50 cu. yd. more than the first 25 cu. yd. of each concrete class placed in any one day, or for each 5000 sq ft of surface are placed; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
 - 1. Any additional cylinder required by the Contractor for early strength gain tests for form stripping or post-tensioning are Contractor's responsibility and shall be paid for by Contractor.
 - 2. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
 - 3. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
 - 4. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi.
 - 5. Test results will be reported in writing to Engineer or Architect, Structural Engineer, ready-mix producer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.
 - 6. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
 - 7. Additional Tests: The testing agency will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Engineer or Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

END OF SECTION

THOMPSON RADIO TOWER SITE
2195 WARRIOR PKWY ALABASTER, AL 35007



Legend





-  Tower Base
-  Tower Site
-  Easement (50' Ingress/Egress & Utility)



DOGWOOD RADIO TOWER SITE
2705 HWY 22 MONTEVALLO, AL 35115

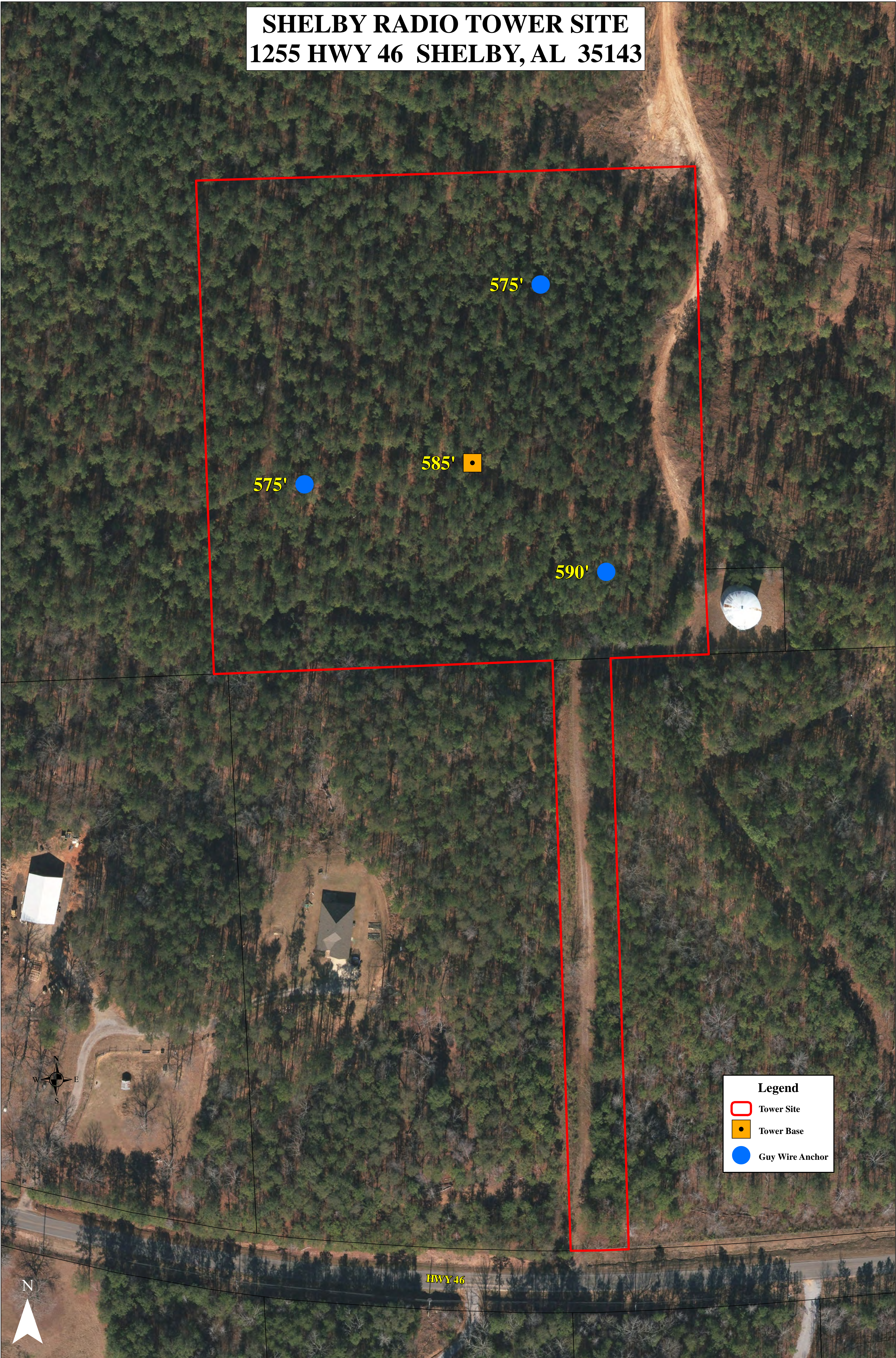


Legend




-  Tower Base
-  Guy Wire Anchor
-  Easement (50' Ingress/Egress & Utility)
-  Tower Site



SHELBY RADIO TOWER SITE
1255 HWY 46 SHELBY, AL 35143



Legend

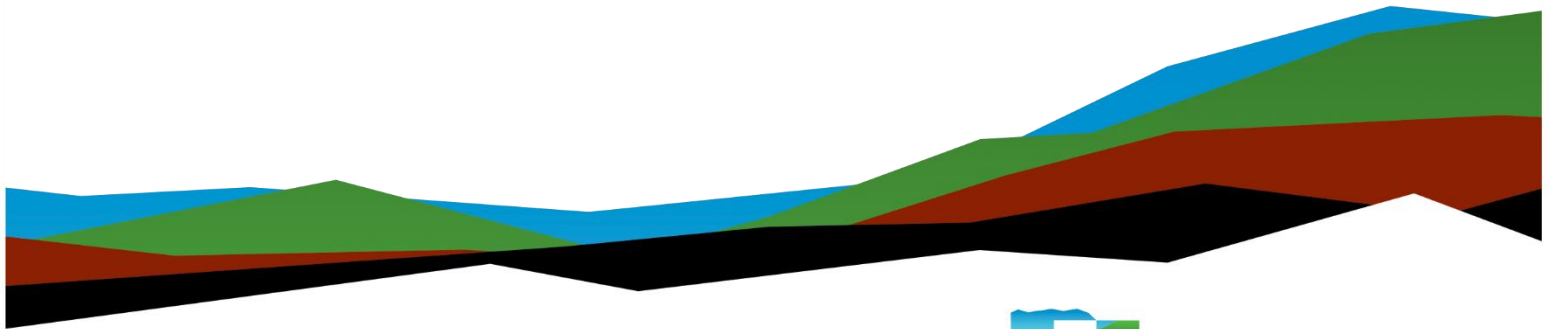
-  Tower Site
-  Tower Base
-  Guy Wire Anchor

Shelby County Radio Tower Thompson Site Geotechnical Engineering Report

November 1, 2023 | Terracon Project No. E1235193

Prepared for:

Shelby County Department of Facilities and General Services
280 McDow Road
Columbiana, Alabama 35051





2147 Riverchase Office Road
Birmingham, Alabama 35244
P (205) 942-1289
Terracon.com

November 1, 2023

Shelby County Department of Facilities and General Services
280 McDow Road
Columbiana, Alabama 35051

Attn: Mr. Trey Gauntt, P.E.
Chief Facilities Management Officer

Re: Geotechnical Engineering Report
Shelby County Radio Tower – Thompson Site
Warrior Parkway
Alabaster, AL
Terracon Project No. E1235193

Dear Mr. Gauntt:

We have completed the scope of Geotechnical Engineering services for the above referenced project in general accordance with Terracon Proposal No. PE1235193 dated October 5, 2023. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations 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

Bryan C. Ritenour, P.E.
Senior Engineer

Matthew S. McCullough, P.E.
Manager, Geotechnical Services

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Exploration and Testing Procedures
Site Location and Exploration Plans
Exploration and Laboratory Results
Supporting Information

Note: This report was originally delivered in a web-based format. **Blue 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  logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed Shelby County radio tower to be located off Warrior Parkway in Alabaster, AL. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

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

The geotechnical engineering Scope of Services for this project included the advancement of one test boring (T-1), laboratory testing, engineering analysis, and preparation of this report. Information contained in this report should not be used for design, construction, and planning of crane foundations or crane subgrade support.

Illustrations showing the site and approximate boring location are shown on the [Site Location](#) and [Exploration Plan](#), respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring log in the [Exploration Results](#) section.

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	The site location and tower information were provided by Mr. Trey Gauntt via email.
Project Description	The project will consist of a new 250 feet tall self-supported radio tower.
Maximum Loads	Based on the furnished information, we anticipate the following structural loads at the tower foundation: <ul style="list-style-type: none">■ Maximum axial downward load less than 345 kips■ Maximum overturning moment load less than 6,400 kip-feet

Item	Description
	<ul style="list-style-type: none"> Maximum shear load less than 49 kips (shear)
Grading/Slopes	No grading plan has been provided. Finish grades are assumed to be within 2 feet of the existing ground surface.

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading limits, as modifications to our recommendations may be necessary.

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
Parcel Information	<p>The project site is located along Warrior Parkway near Thompson High School in Alabaster, AL.</p> <p>Latitude/Longitude (approximate) 33.2188° N, 86.8493° W (See Exhibit D)</p>
Existing Improvements	None
Current Ground Cover	Wooded prior to tree removal by Shelby County
Existing Topography	Relatively level at tower location
Site Geology	<p>Published maps from the Geological Survey of Alabama indicate that the proposed site is underlain by carbonate rocks of the Knox Group. Over long periods of geologic time (i.e., thousands of years) carbonate rocks are susceptible to dissolution as groundwater moves through cracks and fissures in the rock. As dissolution progresses, cavities are formed within the rock mass. Sinkholes are formed as overburden soils filter into the solution cavities.</p> <p>During our field exploration we looked for visual signs of surface subsidence indicative of sinkhole activity. No evidence of sinkhole activity was observed during our reconnaissance of the site. However, several ancient sinkholes were found during</p>

Item	Description
	<p>exploration of the Thomson High School in 2014. The surface depressions appeared to be ancient sinkholes likely on the order of hundreds of years old. No sinkholes that appeared to be recently formed were observed during our field exploration of the Thompson High School campus.</p> <p>It should be noted that this study does not preclude the possibility of future sinkhole occurrence within the area. Even an extensive drilling or geophysical exploration program could not rule out the possibility of future sinkhole formation at the site. The owner must accept that there is some degree of risk in developing over carbonate rock geology.</p>

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 the site. Conditions observed at the boring location are indicated on the individual log. The individual log can be found in the [Exploration Results](#) and the GeoModel can be found in the [Figures](#) attachment 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 the boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	Surface Layer	Topsoil (About 6" thick)
2	Native Sandy Lean Clay	Contains varying amounts of chert gravel, brown, very stiff
3	Native Cherty Soils	Consists of chert gravel, cobbles, and seams, contains some lean clay seams, brown, very dense

The boring was advanced in the dry using a continuous solid stem flight auger drilling technique that allows short term groundwater observations to be made while drilling. Groundwater was not encountered within the maximum drilling depth at the time of our field exploration. Groundwater conditions may be different at the time of construction.

Groundwater conditions may change because of seasonal variations in rainfall, runoff, and other conditions not apparent at the time of drilling. Long-term groundwater monitoring was outside the scope of services for this project.

Seismic Site Class

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 soil/bedrock properties observed at the site and as described on the exploration logs and results, our professional opinion is for that a **Seismic Site Classification of C** be considered for the project. The boring was extended to a maximum depth of 27.5 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

Geotechnical Overview

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test boring, provided that the recommendations provided in this report are implemented in the design and construction phases of this project.

Beneath the surface material (about 6 inches of topsoil), boring T-1 encountered very stiff native Sandy Lean Clay (CL) containing varying chert content to a depth of about 2 feet below the existing ground surface.

Beneath the Sandy Lean Clay (CL), boring T-1 encountered very dense native soils consisting mostly of chert gravel, cobbles, and seams with intermittent lean clay seams. The dense chert resulted in auger refusal at a depth of about 27.5 feet below the ground surface.

Based on the conditions encountered and estimated load-settlement relationships, the proposed self-supported tower can be supported on a shallow mat foundation bearing in very dense native cherty soils at a depth of 3 feet, or deeper, or drilled shaft foundation(s) extending to greater depths below the existing ground surface.

The near surface soils could become unstable with typical earthwork and construction traffic, especially after precipitation events. The effective drainage should be completed

early in the construction sequence and maintained after construction to avoid potential issues. Additional site preparation recommendations, including subgrade improvement and fill placement, are provided in the **Earthwork** section.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration Results**), 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 be limited to minor cuts and fills to level the site and could include stripping of the topsoil/vegetation, excavations, and limited engineered fill placement. The following sections provide recommendations for use in the preparation of the site.

Site Preparation

After removal of the topsoil, stumps and root mats, and prior to fill placement the exposed subgrade should be densified using a heavy vibratory roller having a maximum static weight of 12,000 lbs. and capable of exerting a minimum impact energy of 20,000 lbs.

After densification/compaction as described above, the subgrade should be proofrolled with an adequately loaded vehicle such as a fully-loaded tandem-axle dump truck. The proofrolling should be performed under the observation of the Geotechnical Engineer or their representative. Areas excessively deflecting under the proofroll should be delineated and subsequently addressed by the Geotechnical Engineer. Such areas should either be removed, further densified in place, or stabilized by other methods discussed in the following sections, depending on site and weather conditions. Excessively wet or dry material should either be removed or moisture conditioned and recompacted. Compacted structural fill soils should then be placed to the proposed design grade and the moisture content and compaction of subgrade soils should be maintained until foundation or pavement construction.

Based upon the subsurface conditions determined from the geotechnical exploration, subgrade soils exposed during construction are anticipated to be relatively workable; however, the workability of the subgrade may be affected by precipitation, repetitive construction traffic or other factors. If unworkable conditions develop, workability may be improved by scarifying and drying.

Some moisture conditioning (i.e., drying) of the existing soils should be anticipated for onsite soils to be reused. Furthermore, soils failing the proofroll test may require

additional reworking and drying to be stabilized in place, especially if earthwork is performed during the winter months.

Excavation

Published maps from the Geological Survey of Alabama indicate that the proposed site is underlain by the Knox Group rock formation. The Knox bedrock consists of a medium to thick bedded cherty dolomite interbedded with thin to medium bedded chert. The cherty dolomite bedrock of the Knox weathers to a cherty clay soil containing isolated dense chert beds and boulders. The bedrock surface is often highly irregular and often lies in excess of 100 feet below the ground surface. Bedrock of the Knox Group was not encountered in the deep cuts made to grade the adjacent Thompson High School Campus. However, large hard chert boulders are commonly encountered during excavations into the Knox. Such large chert boulders were encountered during grading of the adjacent Thompson High School campus.

We anticipate that excavations into the dense chert will require a large excavator with rock teeth. Also, dense chert seams and boulders will require a jack hammer attached to the excavator.

The bottom of excavations should be thoroughly cleaned of loose soils and disturbed materials prior to backfill placement and/or construction.

Soil Stabilization

While the subgrade is generally anticipated to be stable after the initial exposure and compaction, unstable subgrades may develop in areas subjected to repetitive construction traffic or if earthwork is performed during the wetter and cooler periods of the year. Methods of subgrade improvement could include scarification, moisture conditioning and recompaction or removal of unstable materials. The appropriate method of improvement, if required, would be dependent on factors such as schedule, weather, the size of area to be stabilized, and the nature of the instability. More detailed recommendations can be provided during construction as the need for subgrade stabilization occurs. Performing site grading operations during warm seasons and dry periods would help reduce the amount of subgrade stabilization required.

Further evaluation of the need and recommendations for subgrade stabilization can be provided during construction as the geotechnical conditions are exposed.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill.

Reuse of On-Site Soil: Excavated on-site soil may be reused as fill. Material property requirements for on-site soil for use as structural fill are noted in the table below:

Property	Structural Fill
Composition	Free of deleterious material
Maximum particle size	4 inches
Fines content	Not limited
Plasticity	Liquid Limit less than 50 Plasticity index less than 25
GeoModel Layer Expected to be Suitable ¹	2 and 3

1. Based on subsurface exploration.

Imported Fill Materials: Imported fill materials should meet the following material property requirements. Regardless of its source, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade.

Soil Type ¹	USCS Classification	Acceptable Parameters (for Structural Fill)
Low Plasticity Cohesive	CL, CL-ML ML, SM, SC	Liquid Limit less than 50 Plasticity index less than 25
Granular	GW, GP, GM, GC, SW, SP, SM, SC	Less than 50% passing No. 200 sieve

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. Additional geotechnical consultation should be provided prior to use of uniformly graded gravel on the site.

Fill Placement and Compaction Requirements

Structural fill should meet the following compaction requirements.

Item	Structural Fill
Maximum Lift Thickness	8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used
Minimum Compaction Requirements ¹	98% of max.
Water Content Range ¹	Low plasticity cohesive: -2% to +2% of optimum Granular: -3% to +3% of optimum

1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698).

Utility Trench Backfill

On-site materials are considered suitable for backfill of utility and pipe trenches, provided the material is free of organic matter and deleterious substances. However, material used as trench backfill should comply with the pipe manufacturer or governing municipality's requirements.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. The backfill should satisfy the gradation requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

Grading and Drainage

All grades must provide effective drainage away from the structure during and after construction and should be maintained throughout the life of the structure. Water retained next to the structure can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential foundation movements.

Exposed ground should be sloped and maintained at a minimum 5% away from the structure for at least 10 feet beyond the perimeter of the structure. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After construction and landscaping have been completed, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically inspected and adjusted, as necessary, as part of the structure's maintenance program. Where paving or flatwork abuts the structure, a maintenance

program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Earthwork Construction Considerations

Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of grade-supported. 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 recompacted.

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.

Construction Observation and Testing

The earthwork efforts should be observed by the Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation, topsoil, and pavements as well as proofrolling and mitigation of unsuitable areas delineated by the proofroll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended 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 1,500 square feet of compacted fill. Where not specified by local ordinance, one density and water content test should be performed for every 50 linear feet of compacted utility trench backfill and a minimum of one test performed for every 12 vertical inches of compacted backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, 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

In our opinion, the self-supported tower can be supported on a shallow foundation system bearing in the very dense native cherty clay soils at a depth of 3 feet or lower below the existing ground surface. If the site has been prepared in accordance with the requirements noted in [Earthwork](#), the following design parameters are applicable for shallow foundations.

Shallow Foundation Design Parameters – Compressive Loads

Item	Description
Maximum Net Allowable Bearing Pressure ^{1, 2}	3,000 psf - foundations bearing on dense, or very dense cherty native soils
Required Bearing Stratum ³	GeoModel Layer 3
Minimum Foundation Dimensions	Per IBC 1809.7
Ultimate Passive Resistance ⁴ (equivalent fluid pressures)	330 pcf (cohesive backfill) 460 pcf (crushed stone)
Sliding Resistance ⁵	0.35 ultimate coefficient of friction
Minimum Embedment below Existing Grade ⁶	36 inches below the existing ground surface elevation
Estimated Total Settlement from Structural Loads ²	Less than about 1 inch
Estimated Differential Settlement ^{2, 7}	About 1/2 of total settlement

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. 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](#). Additional geotechnical consultation will be necessary if higher loads are anticipated.
3. Unsuitable or soft soils should be overexcavated and replaced with lean concrete.
4. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Assumes no hydrostatic pressure. Apply a factor of safety of at least 1.5 when designing for lateral force resistance.

5. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Frictional resistance for granular materials is dependent on the bearing pressure which may vary due to load combinations.
6. Embedment below the existing ground surface elevation is necessary to reach the dense or very dense native cherty soil.
7. Differential settlements are noted for equivalent-loaded foundations and bearing elevation as measured over a span of 50 feet.

Shallow Foundation Design Parameters – Overturning and Uplift Loads

Shallow foundations subjected to overturning loads should be proportioned such that the resultant eccentricity is maintained in the center-third of the foundation (e.g., $e < b/6$, where b is the foundation width). This requirement is intended to keep the entire foundation area in compression during the extreme lateral/overturning load event. Foundation oversizing may be required to satisfy this condition.

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils with consideration to the IBC basic load combinations.

Item	Description
Soil Moist Unit Weight	120 pcf
Soil Effective Unit Weight¹	60 pcf
Soil weight included in uplift resistance	Soil included within the prism extending up from the top perimeter of the footing at an angle of 20 degrees from vertical to ground surface

1. Effective (or buoyant) unit weight should be used for soil above the foundation level and below a water level. The high groundwater level should be used in uplift design as applicable.

Shallow Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the observation 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.

Sensitive soils exposed at the surface of footing excavations may require surficial compaction with hand-held dynamic compaction equipment prior to placing structural

fill, steel, and/or concrete. Should surficial compaction not be adequate, construction of a working surface consisting of either crushed stone or a lean concrete mud mat may be required prior to the placement of reinforcing steel and construction of foundations.

If unsuitable bearing soils are observed at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and lean concrete backfill should be used to restore the bearing elevation.

Deep Foundations

The proposed tower can be founded on straight shaft drilled shaft foundation(s). Engineering values below are for use in designing drilled straight-shaft foundations.

Drilled Shaft Design Parameters

Engineering values for each soil strata encountered by our the boring at the tower location are presented in the following table for use in designing drilled straight-shaft foundations. Also, we have attached the recommended passive pressure diagram.

Depth Below Existing Grade ¹	Material	Allowable End Bearing Pressure (psf)	Allowable Side Friction (psf)	S _u (psf) ²	φ ²	γ' (pcf) ²	Strain at 50% (ε ₅₀)	Horizontal Subgrade Modulus (k) (pci)
0 – 2	Sandy Lean Clay with Sand	---	---	---	---	---	---	---
2-10	Dense to Very Dense Native Chert Soils	---	750	3,000	32	120	0.004	800
10-27.5	Dense to Very Dense Native Chert Soils	5,000	750	3,000	32	120	0.004	800

1. See Boring Log for more details on Stratigraphy.
2. Definition of Terms:
S_u: Undrained shear strength
φ: Internal friction angle
γ': Effective unit weight

The estimated design parameters presented in the tables above and on the attached passive pressure diagrams are applicable for the soils encountered at the specific boring location. The end bearing, skin friction, and passive resistance are allowable parameters with factors of safety of 3, 2, and 2, respectively. The estimated values given in the table are based on our boring and past experience with similar soil types. Lateral resistance and friction in the upper 2 feet should be ignored due to the potential effects

of frost action, desiccation, and drilling disturbance. Drilled straight-shaft foundations should extend at least 10 feet below the existing ground surface in order to use the recommended allowable end bearing pressures.

Shafts should be adequately reinforced as designed by the Structural Engineer for both tension and shear to sufficient depths. Buoyant unit weights of the soil and concrete should be used in the calculations below the highest anticipated groundwater elevation.

Drilled shafts should have a minimum (center-to-center) spacing of three diameters. Closer spacing may require a reduction in axial load capacity.

Post-construction settlements of drilled shafts designed and constructed as described in this report are estimated to range from about $\frac{1}{2}$ to $\frac{3}{4}$ inch. Differential settlement between individual shafts is expected to be $\frac{1}{2}$ to $\frac{2}{3}$ of the total settlement.

Drilled Shaft Construction Considerations

The drilling contractor should be experienced in the subsurface conditions observed at the site, and the excavations should be performed with equipment capable of providing a clean bearing surface. The drilled straight-shaft foundation system should be installed in general accordance with the procedures presented in "Drilled Shafts: Construction Procedures and Design Methods," FHWA Publication No. FHWA-NHI 18-024.

The contractor is generally expected to use conventional "dry" techniques for installation of the drilled shaft. Subsurface water levels are influenced by seasonal and climatic conditions, which result in fluctuations in subsurface water elevations. Additionally, it is common for water to be present after periods of significant rainfall. Contractors should be prepared to dewater shaft excavations.

To prevent collapse of the sidewalls and/or to control groundwater seepage, the use of temporary steel casing is recommended for construction of the drilled shaft foundations. While withdrawing casing, care should be exercised to maintain concrete inside the casing at a sufficient level to resist earth and hydrostatic pressures acting on the casing exterior. Arching of the concrete, loss of seal and other problems can occur during casing removal and result in contamination of the drilled shaft. These conditions should be considered during the design and construction phases. Placement of loose soil backfill should not be permitted around the casing prior to removal.

Use of a telescoping casing arrangement can be considered to avoid handling long casing lengths. The lower casing should be of sufficient length and stiffness and have an appropriate cutting edge to allow it to be firmly seated into the bedrock to seal out groundwater. Excess water should be evacuated from the casing to place concrete in the "dry."

Care should be taken to not disturb the sides and bottom of the excavation during construction. The bottom of the shaft excavation should be free of loose material before concrete placement. Concrete should be placed as soon as possible after the foundation excavation is completed, to reduce potential disturbance of the bearing surface.

The drilled shaft installation process should be performed under the observation of the Geotechnical Engineer. The Geotechnical Engineer should document the shaft installation process including soil/rock and groundwater conditions observed, consistency with expected conditions, and details of the installed shaft.

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. Variations will occur 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 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 effect 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. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. 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.

Geotechnical Engineering Report

Shelby County Radio Tower – Thompson Site | Alabaster, AL
November 1, 2023 | Terracon Project No. E1235193

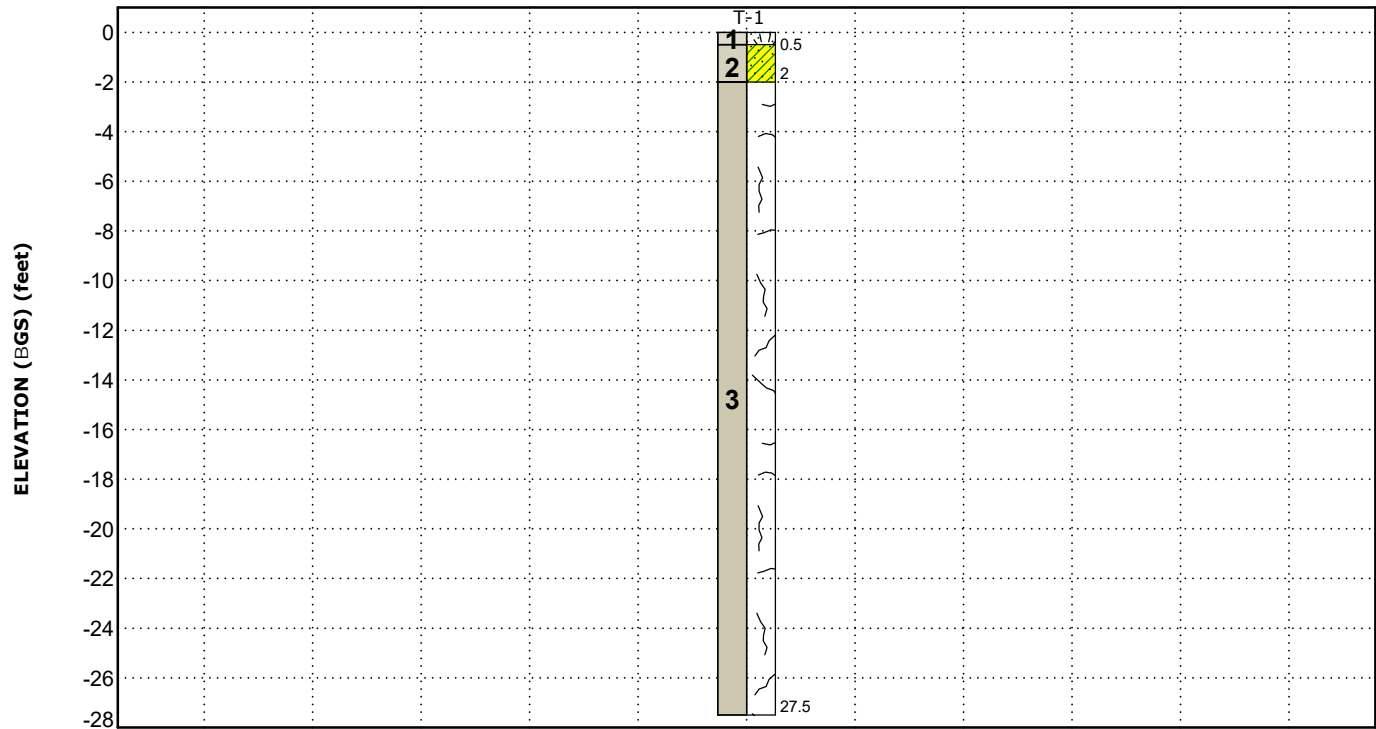


Figures




Contents:

GeoModel
Passive Pressure Diagram

GeoModel



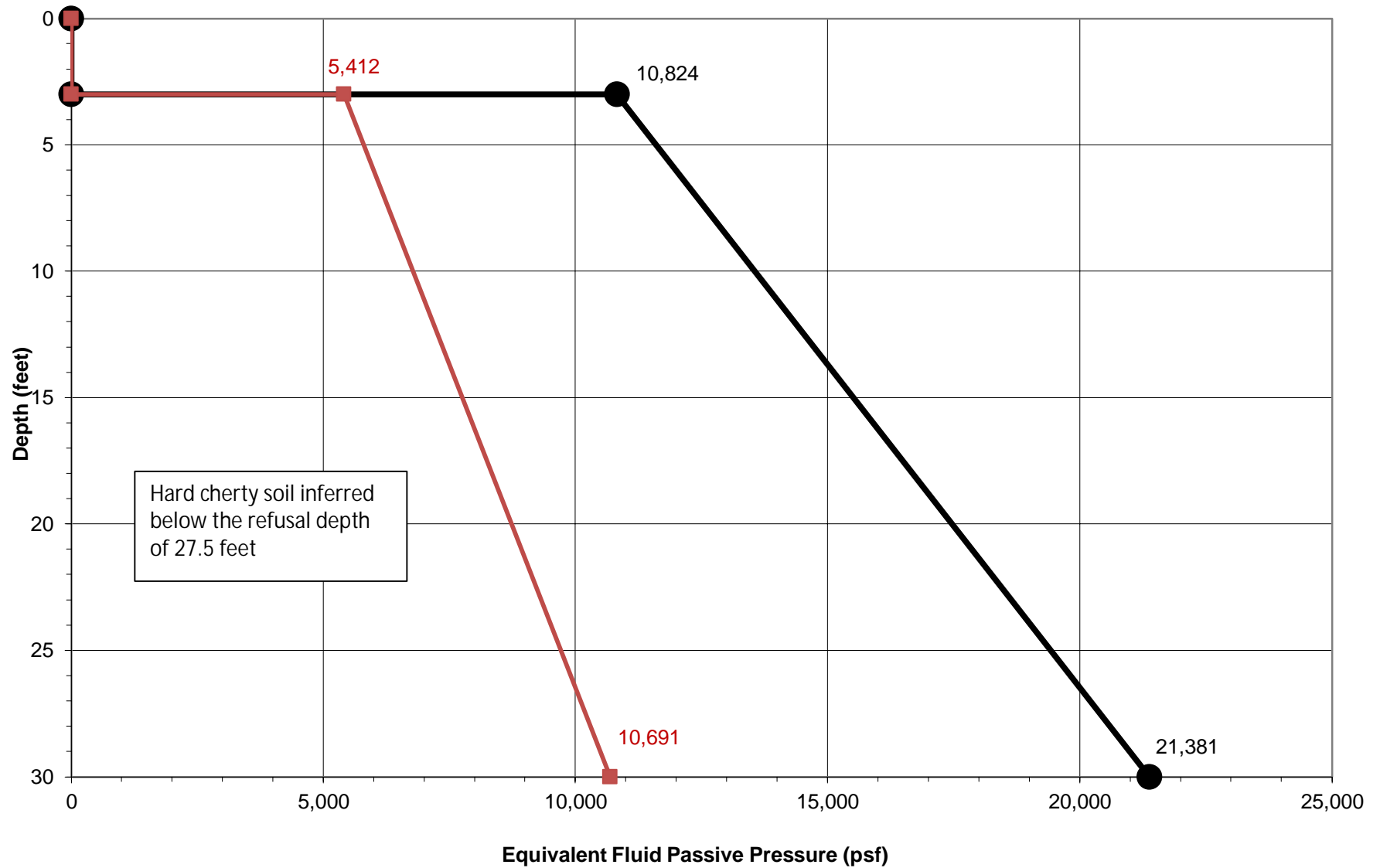
This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description	Legend	
1	Surface Layer	Topsoil (About 6" thick)	 Topsoil	 Sandy Lean Clay
2	Native Sandy Lean Clay	Contains varying amounts of chert gravel, brown, very stiff	 Chert	
3	Native Cherty Soils	Consists of chert gravel, cobbles, and seams, contains some lean clay seams, brown, very dense		

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.

Passive Pressure Diagram for Boring T-1

—●— Ultimate —■— Allowable (FOS=2.0)



Geotechnical Engineering Report

Shelby County Radio Tower – Thompson Site | Alabaster, AL
November 1, 2023 | Terracon Project No. E1235193



Attachments

Exploration and Testing Procedures

Field Exploration

Number of Borings	Approximate Boring Depth (feet)	Location
1	27.5	Base of Tower As Identified by Shelby County

Boring Layout and Elevations: The boring was located at the tower base as staked by Shelby County.

Subsurface Exploration Procedures: We advanced the boring with a truck-mounted, rotary drill rig using continuous flight augers (solid stem and/or hollow stem, as necessary, depending on soil conditions). Four samples were obtained in the upper 10 feet of the boring and at intervals of 5 feet thereafter. In the split-barrel sampling procedure, 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 log at the test depths. For safety purposes, the boring was backfilled with auger cuttings after completion.

We also observed the borehole while drilling and at the completion of drilling for the presence of groundwater. The groundwater levels are shown on the attached boring log.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring log. 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 a field boring log as part of the drilling operations. These field log included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. The final boring log was prepared from the field log. The final boring log represent the Geotechnical Engineer's interpretation of the field log and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

- Moisture Content
- Percent Passing 200 Sieve

The laboratory testing program often included examination of soil samples by an engineer. Based on the results of our field and laboratory programs, 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.

Geotechnical Engineering Report

Shelby County Radio Tower – Thompson Site | Alabaster, AL
November 1, 2023 | Terracon Project No. E1235193



Site Location



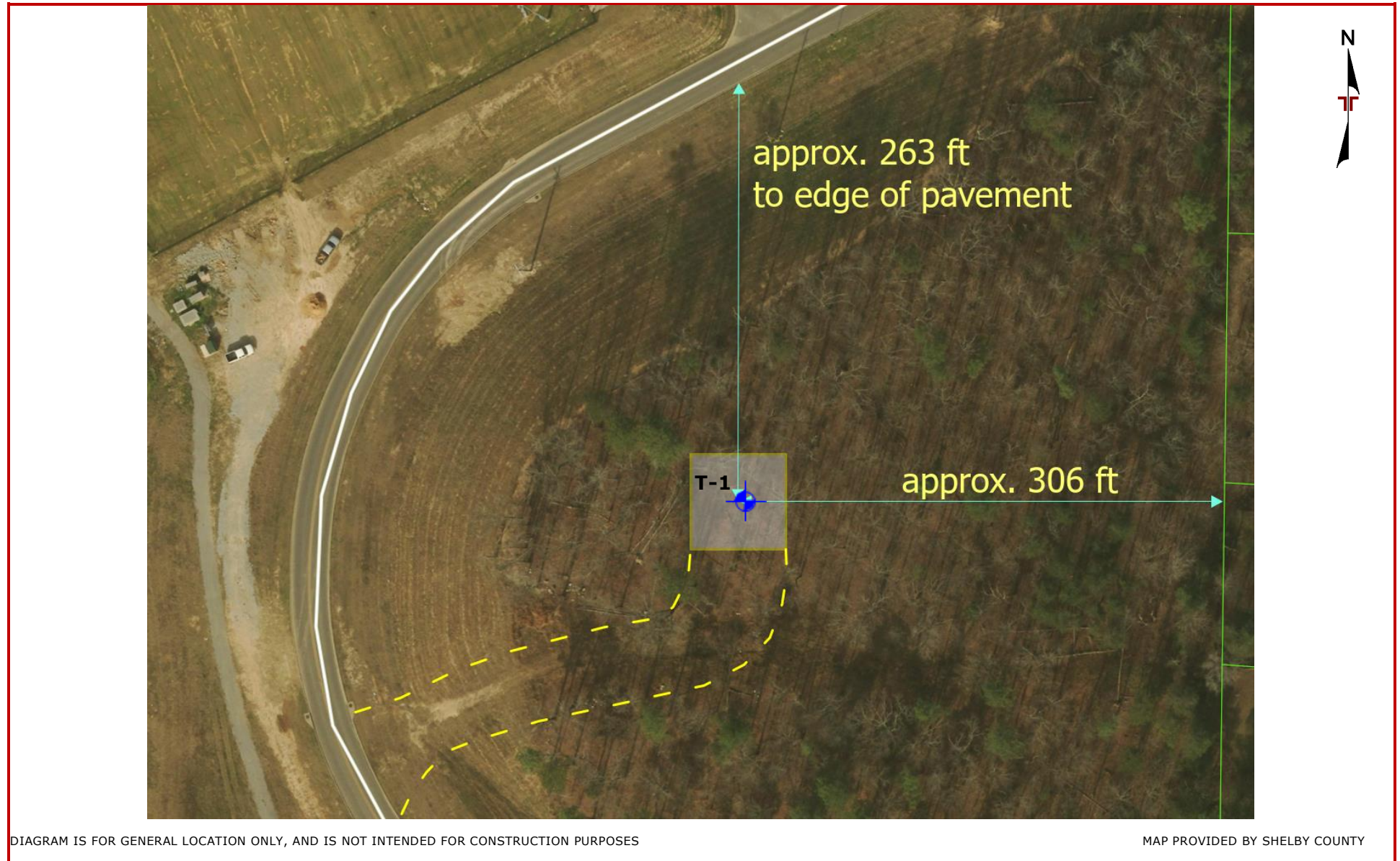
Geotechnical Engineering Report

Shelby County Radio Tower – Thompson Site | Alabaster, AL

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Exploration Plan






Exploration and Laboratory Results

Contents:

Boring Log (T-1)

Note: All attachments are one page unless noted above.

Boring Log No. T-1

Model Layer	Graphic Log	Location: See Exploration Plan	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
								LL-PL-PI	
1		0.5 TOPSOIL (6")							
2		SANDY LEAN CLAY (CL) , with chert gravel, brown, very stiff				2-7-11 N=18			
		2.0 CHERT , with lean clay (CL) seams, sand, gravel and cobbles, brown, very dense				50/6" N=50+	6.8		
3			5			25-50/2" N=50+	11.0		
						50/1" N=50+	6.9		
			10			50/1" N=50+	7.4		35
			15			50/1" N=50+	12.9		
			20			21-30-50/3" N=50+	17.3		
			25			12-50/5" N=50+			
		27.5 Auger Refusal at 27.5 Feet							

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.

Water Level Observations
No water observed during drilling

Drill Rig
CME-45

Notes

Advancement Method
Continuous flight auger

Driller
Smith Drilling

Logged by
BCR

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Boring Started
10-20-2023

Boring Completed
10-20-2023

Supporting Information






Contents:

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.

General Notes

Sampling	Water Level	Field Tests
 Standard Penetration Test	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time  Cave In Encountered <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>	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. 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.

Strength Terms

Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	Standard Penetration or N-Value (Blows/Ft.)	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

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification	
				Group Symbol	Group Name ^B
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F
			$Cu < 4$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ ^E	GP	Poorly graded gravel ^F
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}
			Fines classify as CL or CH	GC	Clayey gravel ^{F, G, H}
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	SW	Well-graded sand ^I
			$Cu < 6$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ ^E	SP	Poorly graded sand ^I
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots above "A" line ^J	CL	Lean clay ^{K, L, M}
			$PI < 4$ or plots below "A" line ^J	ML	Silt ^{K, L, M}
		Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OL	Organic clay ^{K, L, M, N} Organic silt ^{K, L, M, O}
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K, L, M}
			PI plots below "A" line	MH	Elastic silt ^{K, L, M}
		Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OH	Organic clay ^{K, L, M, P} Organic silt ^{K, L, M, Q}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C 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.

^D 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.

$$^E \quad Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

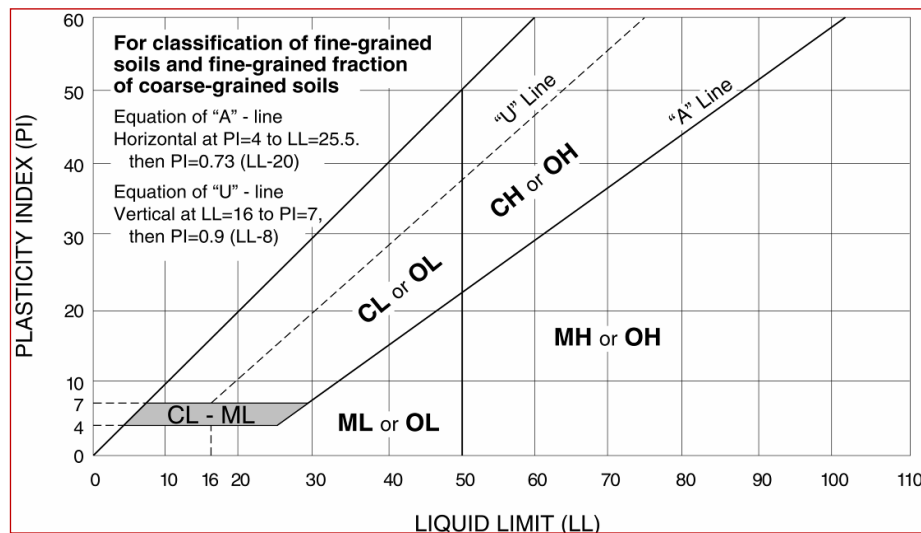
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



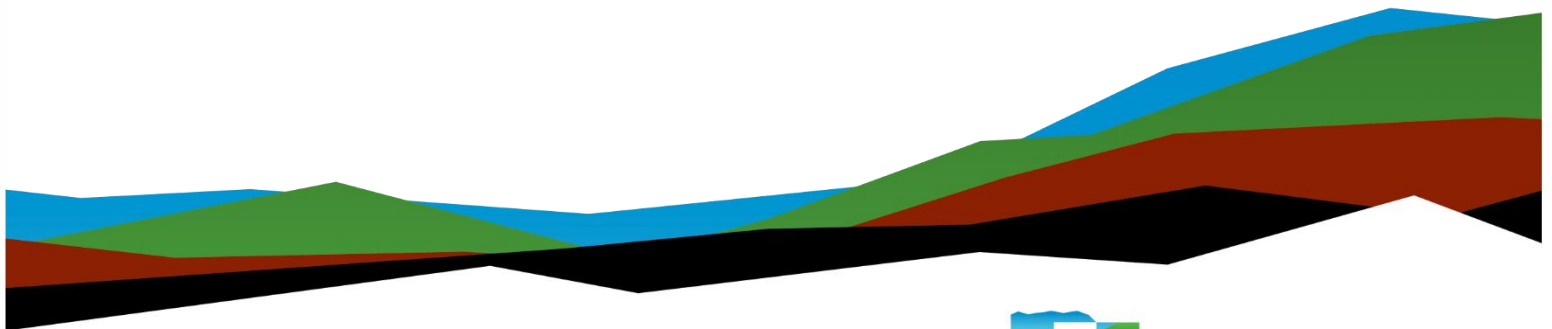
Dogwood Guyed Tower

Geotechnical Engineering Report

April 5, 2024 | Terracon Project No. E1235215

Prepared for:

Shelby County Department of Facilities And General Services
280 McDow Road
Columbiana, AL 35051



Nationwide
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- Facilities
- Environmental
- Geotechnical
- Materials



2147 Riverchase Office Road
Hoover, Alabama 35244
P (205) 942-1289
Terracon.com

April 5, 2024

Shelby County Department of Facilities And General Services
280 McDow Road
Columbiana, Al 35051

Attn: Mr. Trey Gauntt, P.E.
Chief Facilities Management Officer

Re: Geotechnical Engineering Report
Dogwood Guyed Tower
Maylene, Shelby County, Alabama
Terracon Project No. E1235215

Dear Mr. Gauntt:

We have completed the scope of Geotechnical Engineering services for the above referenced project in general accordance with Terracon Proposal No. PE1235215 dated November 2, 2023. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations 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

Bryan Ritenour, P.E.
Senior Engineer

Matthew S. McCullough, P.E.
Geotechnical Department Manager



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- Exploration and Testing Procedures
- Site Location and Exploration Plans
- Exploration and Laboratory Results
- Supporting Information

Note: This report was originally delivered in a web-based format. **Blue 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  Terracon logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Report Summary

Topic ¹	Overview Statement ²
Project Description	330-foot-tall, guyed communications tower Estimated maximum loads: <ul style="list-style-type: none">■ Tower – Axial: 100 kips, Shear: 27.5 kips■ Guy Anchors – Uplift: 97 kips, Horizontal: 52.3 kips
Geotechnical Characterization	Layers of clayey sand, lean clay, and fat clay underlain with silty sand Groundwater not observed during our exploration
Earthwork	Earthwork may be performed to prepare a soil pad for construction of foundations
Shallow Foundations	As planned, shallow foundations may be used for tower support Allowable bearing pressure: 4,500 psf Expected settlements: < 1-inch total, < ½-inch differential
Drilled Piers	Drilled piers may be considered for support of the tower. Design parameters for drilled piers are provided in Drilled Piers .
Deadman Anchors	Design parameters for deadman anchors provided in this section
General Comments	This section contains important information about the limitations of this geotechnical engineering report.

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.
2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed Guyed Tower to be located in the Dogwood community near Maylene, Shelby County, Alabama. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Seismic site classification per IBC
- Site preparation and earthwork
- Foundation design and construction
- Guy wire anchor design parameters

The geotechnical engineering Scope of Services for this project included the advancement of 4 test borings, laboratory testing, engineering analysis, and preparation of this report.

Drawings showing the site and boring locations are shown on the [Site Location](#) and [Exploration Plan](#), respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in the [Exploration Results](#) section.

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	The site location and tower information were provided by Mr. Trey Gauntt via email.
Project Description	The project will consist of a new 330 feet tall guyed radio tower.
Maximum Loads	Based on the furnished information, we anticipate the following structural loads at the tower foundation: <ul style="list-style-type: none">■ Tower: Maximum axial downward 100 kips■ Tower: Maximum torque 2,539 lb-ft

Item	Description
	<ul style="list-style-type: none"> ■ Guy Anchor: Maximum vertical uplift 36 kips ■ Guy Anchor: Maximum horizontal 42 kips
Grading/Slopes	No grading plan has been provided. Finish grades are assumed to be within 2 feet of the existing ground surface. No fill will be placed at the tower nor anchor locations.

Terracon should be notified if any of the above information is inconsistent with the planned construction as modifications to our recommendations may be necessary.

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
Parcel Information	<p>The project site is located off Setco Mine Road and CR-22 in Maylene, Shelby County, Alabama.</p> <p>Latitude/Longitude (approximate) 33.1649° N, 86.8843° W (See Exhibit D)</p>
Existing Improvements	None
Current Ground Cover	Recently cleared woods and bare ground access roads
Existing Topography	Relatively level to gently sloping at tower and guy locations
Local Geology	Published maps from the Geological Survey of Alabama indicate that the project site is underlain by the upper part of the Pottsville Formation. The upper Pottsville contains Interbedded dark-gray shale, siltstone, medium-gray sandstone, and coal in cyclic sequences. Abandoned underground coal mineworks exist in some areas of Shelby County underlain by the Pottsville Formation. A study to address the potential for abandoned mining in the area of the proposed tower site was beyond the scope of our services.

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 the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the [Exploration Results](#) and the GeoModel can be found in the [Figures](#) attachment 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	Existing Fill	Lean clay with varying amounts of sand, low consistency (N=4 bpf)
2	Native Lean Clay	Lean Clay (CL) with varying sand content, soft (N=4 bpf)
3	Native Clay And Silt	Lean Clay (CL) and Silt (ML) with varying amounts of sand, very stiff to hard
4	Native Silty Sand	Silty Sand (SM) with varying amounts of gravel, dense to very dense
5	Native Sandstone	Highly weathered, tan

Groundwater Conditions

The boreholes were observed while drilling and immediately after completion for the presence and level of groundwater. However, groundwater was not observed in any of our borings while drilling or immediately after completion of drilling.

The absence of groundwater in the borings does not necessarily mean the borings terminated above groundwater, or the water levels summarized above are stable groundwater levels. A relatively long period may be necessary for a groundwater level to develop and stabilize in a borehole. Long-term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels.

Seismic Site Class

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 soil properties observed at the site and as described on the exploration logs and results, our professional opinion is that a **Seismic Site Classification of C** be considered for the project. Subsurface explorations at this site were extended to a maximum depth of about 19 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

Geotechnical Overview

The grading plan was not available at the time of this report. That information should be provided to Terracon so that our recommendations can be reviewed and revised if necessitated by the proposed grading plan.

The subsurface materials generally consisted of lean clay, sandy lean clay, and silty sand with varying gravel content. Weathered sandstone was encountered in the last sample of boring A-3. Groundwater was not encountered within the maximum depths explored during or at the completion of drilling.

The near surface soils could become unstable with typical earthwork and construction traffic, especially after precipitation events. Effective drainage should be established early in the construction sequence and maintained after construction to avoid potential issues. If possible, the grading should be performed during the warmer and drier times of the year. If grading is performed during the winter months, an increased risk for possible undercutting and replacement of unstable subgrade will persist. Additional site preparation recommendations, including subgrade improvement and fill placement, are provided in the [Earthwork](#) section.

Shallow or deep foundation systems can be used for the proposed tower and anchors. The [Shallow Foundations](#) section addresses support of the tower and anchors bearing on stable native soil. As an alternate, the tower could be supported on drilled piers. The [Drilled Pier Foundations](#) section addresses support of the tower and anchors on drilled piers.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the [Exploration Results](#)), engineering analyses, and our current understanding of the proposed project. The [General Comments](#) section provides an understanding of the report limitations.

Earthwork

Earthwork was performed to prepare a soil pad for construction of foundations. Any fill should be compacted as needed to support the construction equipment. It appears that about 3 feet of fill was placed at the anchor location corresponding to boring A-2. We understand that no additional fill will be placed to grade the tower nor anchors locations. However, fill may be placed over the tower foundation or anchor blocks.

The performance of the foundations will not only be dependent upon the quality of construction but also upon the stability of the moisture content of bearing soil beneath the foundation. We recommend that positive drainage be established adjacent to all foundations so ponding of rainfall near the foundations does not occur. Accumulations of water near the foundations may cause significant moisture variations in the soils adjacent to the foundations, increasing the potential to weaken the soils or cause vertical movements of the foundations.

Fill Placement and Compaction Requirements

Approved on-site should meet the following compaction requirements.

Item	Structural Fill
Maximum Lift Thickness	8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used
Minimum Compaction Requirements ¹	98% of maximum standard Proctor dry density
Water Content Range ¹	Low Plasticity Cohesive: -2% to +2% of optimum High plasticity cohesive: 0 to +3% of optimum Granular: -3% to +3% of optimum

1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698).

Earthwork Construction Considerations

Shallow excavations for the proposed foundations are anticipated to be accomplished with large excavators. The site should be graded to prevent ponding of surface water on the prepared subgrades or in excavations.

Although not observed during our field exploration, during seasons of significant rainfall, the groundwater table could affect efforts.

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.

Construction Observation and Testing

The earthwork efforts should be observed by a qualified Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation, topsoil, etc.) and mitigation of unstable areas delineated by the proofroll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by a qualified 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 two tests per lift of fill.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, 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	Individual Column
Maximum Net Allowable Bearing Pressure, Total Load ^{1, 2}	3,000 psf
Required Bearing Stratum³	Very stiff to hard native lean clay or dense native silty sand (Geomodel Layers 2 and 3) Bearing stratum to be verified by Terracon
Maximum Foundation Dimensions	6 feet by 6 feet (square)
Ultimate Passive Resistance⁴ (equivalent fluid pressures)	330 pcf
Sliding Resistance⁵	0.35 ultimate coefficient of friction
Minimum Embedment below Finished Grade⁶	5 feet
Estimated Total Settlement from Structural Loads²	About 1 inch
Estimated Differential Settlement^{2, 7}	About 1/2 of total settlement

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. 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](#). Additional geotechnical consultation will be necessary if higher loads are anticipated.
3. Unsuitable or soft soils should be overexcavated and replaced with lean concrete.
4. Use of passive earth pressures requires the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Assumes no hydrostatic pressure. The upper 3 feet of soil should be ignored for lateral support.
5. Can be used to compute sliding resistance where foundations are placed on suitable soil. Frictional resistance for granular materials is dependent on the bearing pressure which may vary due to load combinations. For fine-grained materials, lateral resistance using cohesion should not exceed ½ the dead load.

6. Embedment necessary to minimize the effects of seasonal water content variations and due to ignoring the upper 3 feet of soil for lateral support. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
7. Differential settlements are noted for equivalent-loaded foundations and bearing elevation as measured over a span of 50 feet.

Design Parameters – Overturning and Uplift Loads

Shallow foundations subjected to overturning loads should be proportioned such that the resultant eccentricity is maintained in the center-third of the foundation (e.g., $e < b/6$, where b is the foundation width). This requirement is intended to keep the entire foundation area in compression during the extreme lateral/overturning load event. Foundation oversizing may be required to satisfy this condition.

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils with consideration to the IBC basic load combinations.

Item	Description
Soil Moist Unit Weight^{1,2}	120 pcf
Soil weight included in uplift resistance^{1,2}	Soil included within the prism extending up from the top perimeter of the footing at an angle of 20 degrees from vertical to ground surface

1. Effective (or buoyant) unit weight should be used for soil above the foundation level and below a water level. The high groundwater level should be used in uplift design as applicable.
2. For approved on-site soils (Geomodel Layers 2, 3, and 4) used as engineered fill above the anchor and placed in accordance with the Fill Placement and Compaction Requirements section.

Shallow Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the observation 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.

Sensitive soils exposed at the surface of footing excavations may require surficial compaction with hand-held dynamic compaction equipment prior to placing steel and/or

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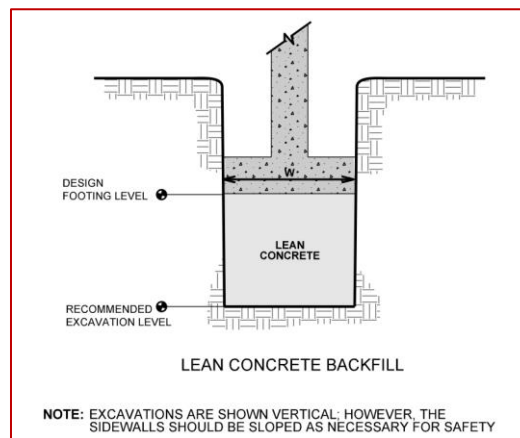
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concrete. Should surficial compaction not be adequate, construction of a working surface consisting of either crushed stone or a lean concrete mud mat may be required prior to the placement of reinforcing steel and construction of foundations.

If unsuitable bearing soils are observed at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. The lean concrete replacement zone is illustrated on the sketch below.



Deep Foundations

The proposed tower can be founded on straight shaft drilled shaft foundation(s). Engineering values below are for use in designing drilled straight-shaft foundations.

Drilled Shaft Design Parameters

Engineering values for each soil strata encountered by our the boring at the tower location are presented in the following table for use in designing drilled straight-shaft foundations. Also, we have attached the recommended passive pressure diagram.

Material ^{2,3}	Allowable End Bearing Pressure (psf)	Allowable Side Friction (psf)	S_u (psf) ³	ϕ ³	γ' (pcf) ³	Strain at 50% (ϵ_{50})	Horizontal Subgrade Modulus (k) (pci)
Any Type Of Material In Exclusion Zone (0 – 3')	---	---	---	---	---	---	---
Geomodel Layer 3	3,000	400	2,000	---	120	0.005	300
Geomodel Layer 4	3,000	500	---	32	120	---	200
Geomodel Layer 5	4,000	700	3,000	32	120	0.004	500

1. See Geomodel and Boring Logs
2. All materials in the upper 3 feet should be ignored for end bearing and lateral support.
3. Definition of Terms:
 - S_u : Undrained shear strength
 - ϕ : Internal friction angle
 - γ' : Effective unit weight

The estimated design parameters presented in the tables above are applicable for the soils encountered at the specific boring location. The end bearing, skin friction, and passive resistance are allowable parameters with factors of safety of 3, 2, and 2, respectively. The estimated values given in the table are based on our borings and past experience with similar soil types. Lateral resistance and friction in the upper 3 feet should be ignored due to the potential effects of frost action, desiccation, drilling disturbance, and unstable soils. Drilled straight-shaft foundations should extend at least 10 feet below the existing ground surface in order to use the recommended allowable end bearing pressures.

Shafts should be adequately reinforced as designed by the Structural Engineer for both tension and shear to sufficient depths. Buoyant unit weights of the soil and concrete should be used in the calculations below the highest anticipated groundwater elevation.

Drilled shafts should have a minimum (center-to-center) spacing of three diameters. Closer spacing may require a reduction in axial load capacity.

Post-construction settlements of drilled shafts designed and constructed as described in this report are estimated to range from about $\frac{1}{2}$ to $\frac{3}{4}$ inch. Differential settlement between individual shafts is expected to be $\frac{1}{2}$ to $\frac{3}{4}$ of the total settlement.

Drilled Shaft Construction Considerations

The drilling contractor should be experienced in the subsurface conditions observed at the site, and the excavations should be performed with equipment capable of providing a clean bearing surface. The drilled straight-shaft foundation system should be installed in general accordance with the procedures presented in "Drilled Shafts: Construction Procedures and Design Methods," FHWA Publication No. FHWA-NHI 18-024.

The contractor is generally expected to use conventional "dry" techniques for installation of the drilled shaft. Subsurface water levels are influenced by seasonal and climatic conditions, which result in fluctuations in subsurface water elevations. Additionally, it is common for water to be present after periods of significant rainfall. Contractors should be prepared to dewater shaft excavations.

To prevent collapse of the sidewalls and/or to control groundwater seepage, the use of temporary steel casing is recommended for construction of the drilled shaft foundations. While withdrawing casing, care should be exercised to maintain concrete inside the casing at a sufficient level to resist earth and hydrostatic pressures acting on the casing exterior. Arching of the concrete, loss of seal and other problems can occur during casing removal and result in contamination of the drilled shaft. These conditions should be considered during the design and construction phases. Placement of loose soil backfill should not be permitted around the casing prior to removal.

Use of a telescoping casing arrangement can be considered to avoid handling long casing lengths. The lower casing should be of sufficient length and stiffness and have an appropriate cutting edge to allow it to be firmly seated into the bedrock to seal out groundwater. Excess water should be evacuated from the casing to place concrete in the "dry."

Care should be taken to not disturb the sides and bottom of the excavation during construction. The bottom of the shaft excavation should be free of loose material before

concrete placement. Concrete should be placed as soon as possible after the foundation excavation is completed, to reduce potential disturbance of the bearing surface.

The drilled shaft installation process should be performed under the observation of the Geotechnical Engineer. The Geotechnical Engineer should document the shaft installation process including soil/rock and groundwater conditions observed, consistency with expected conditions, and details of the installed shaft.

Deadman Anchors

Uplift and horizontal loads at the anchor locations will be resisted by the overburden pressure of the weight of the concrete anchor, soil above the anchor, passive pressure of the soil in contact with the tower-side face of the anchor, and the frictional resistance between the bottom of the anchor and undisturbed native soil. The following table can be used to size the deadman anchors.

Item	Description
Bearing Stratum³	Very stiff to hard native lean clay or dense native silty sand (Geomodel Layers 2 and 3)
Ultimate passive pressure^{1,2,3}	330 psf
Coefficient of sliding friction²	0.35
Unit weight of soil over deadman anchor⁴	120 pcf

1. Assumes sides of the excavation for the anchor are nearly vertical and the concrete is placed neatly against these vertical faces for the passive earth pressure to be valid. If the loaded side is sloped or benched and then backfilled, the allowable passive pressure will be significantly reduced.
2. A minimum factor of safety of 1.5 should be considered.
3. The upper 3 feet of soil overburden should be ignored for end bearing and lateral support. Use of passive earth pressures requires the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Assumes no hydrostatic pressure.

4. For approved on-site soils (Geomodel Layers 2, 3, and 4) used as engineered fill above the anchor and placed in accordance with the Fill Placement and Compaction Requirements section.

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. Variations will occur 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 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 affect 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. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface

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water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. 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.

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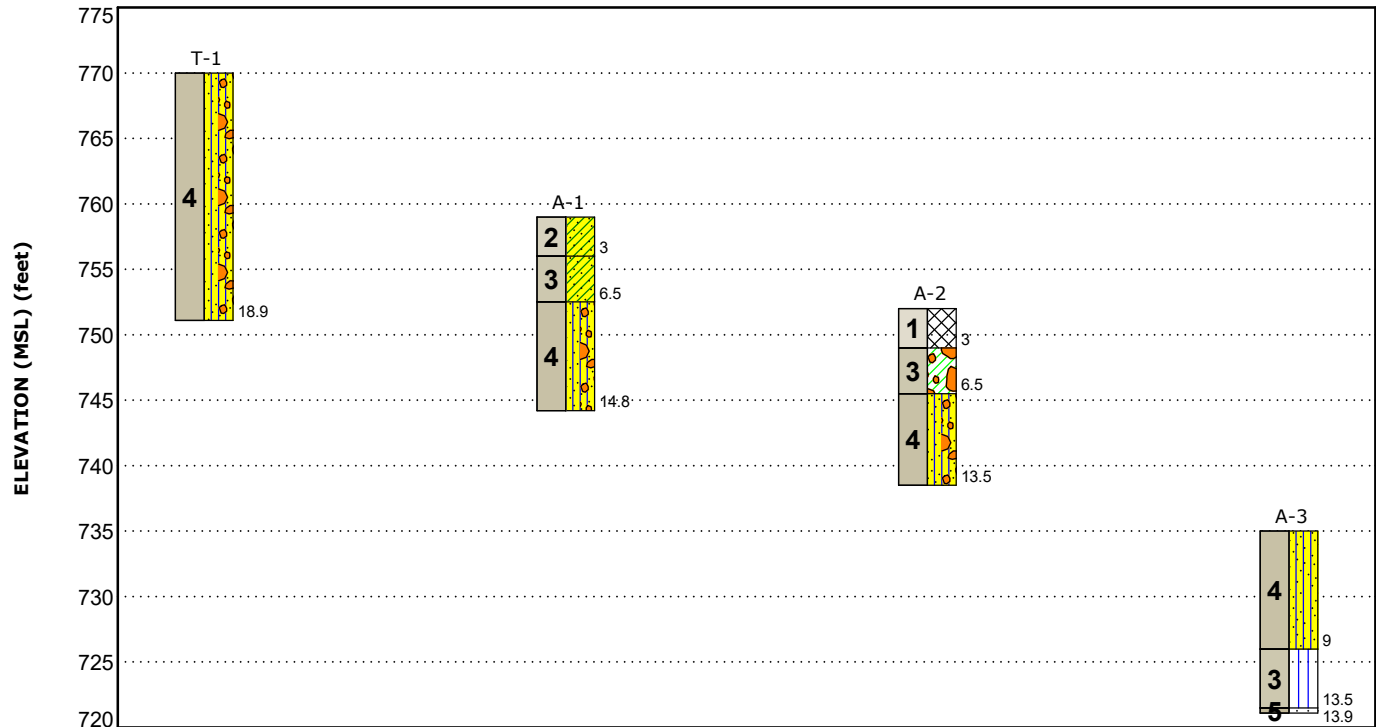


Figures

Contents:

GeoModel

GeoModel



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	Legend	
1	Existing Fill	Lean clay with varying amounts of sand, low consistency (N=4 bpf)	Silty Sand with Gravel	Sandy Lean Clay
2	Native Lean Clay	Lean Clay (CL) with varying sand content, soft (N=4 bpf)	Fill	Gravelly Lean Clay
3	Native Clay And Silt	Lean Clay (CL) and Silt (ML) with varying amounts of sand, very stiff to hard	Silty Sand	Silt
4	Native Silty Sand	Silty Sand (SM) with varying amounts of gravel, dense to very dense	Sandstone	
5	Native Sandstone	Highly weathered, tan		

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.

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Attachments

Exploration and Testing Procedures

Field Exploration

Boring Designation	Approximate Boring Depth (feet)	Location
T-1	18.9	Planned tower center area
A-1, A-2, A-3	13.5 to 14.8	Planned guy anchor areas

Boring Layout and Elevations: The tower and guy anchor locations were staked in the field by Shelby County. Approximate ground surface elevations were provided by Shelby County.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted rotary drill rig using continuous flight augers (solid stem). Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound conventional safety 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. For safety purposes, all borings were backfilled with auger cuttings after their completion.

We also observed the boreholes while drilling and at the completion of drilling for the presence of groundwater. Groundwater was not observed at these times in the boreholes.

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 observed 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.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

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- Moisture Content
- Percent Passing No. 200 Sieve
- Atterberg Limits

The laboratory testing program often included examination of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

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Site Location and Exploration Plans

Contents:

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above.

Site Location

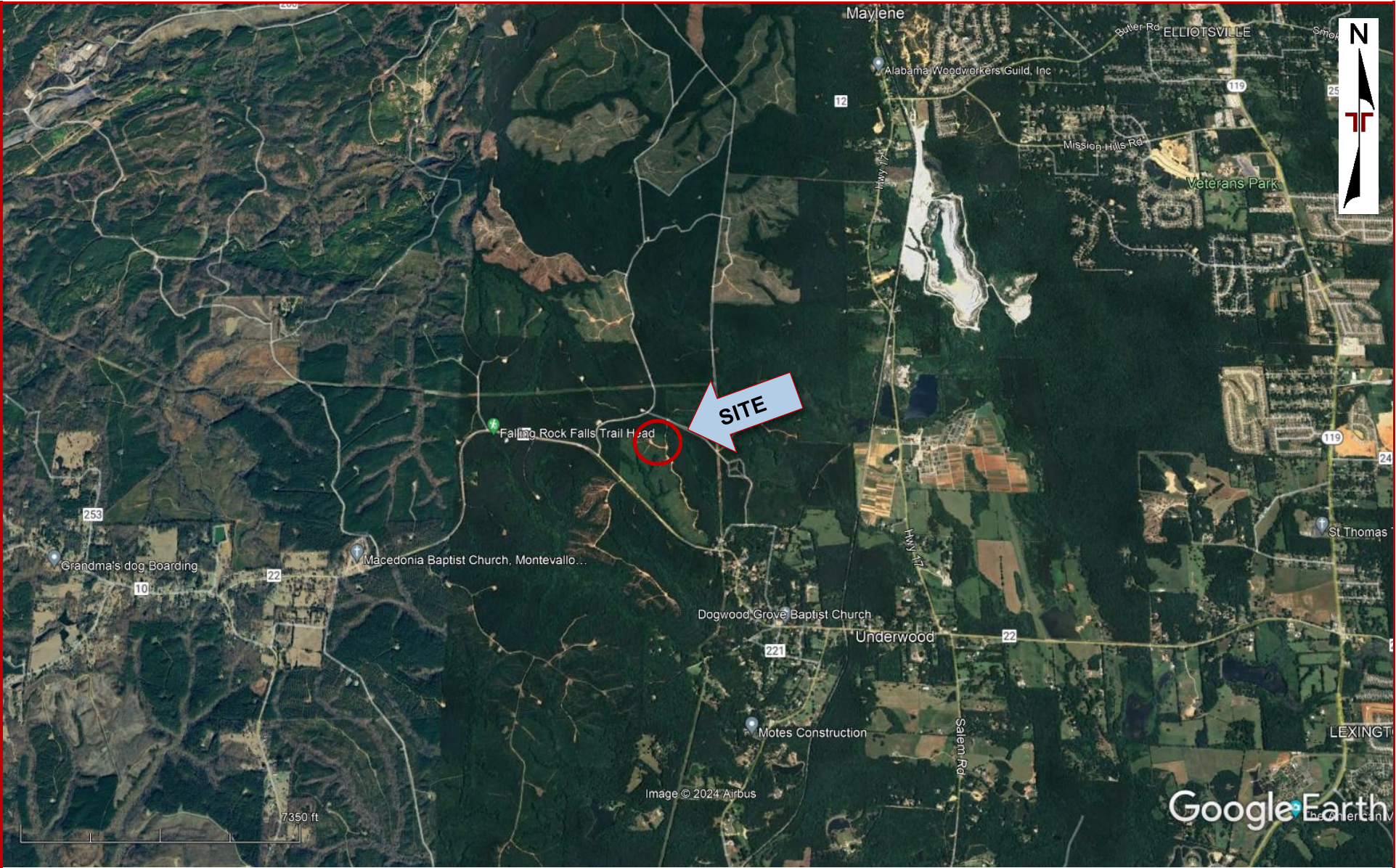


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY GOOGLE EARTH

Exploration Plan



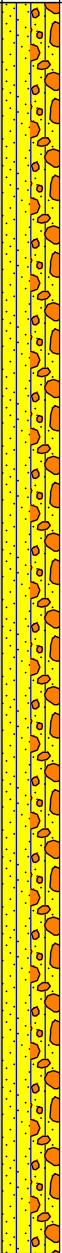
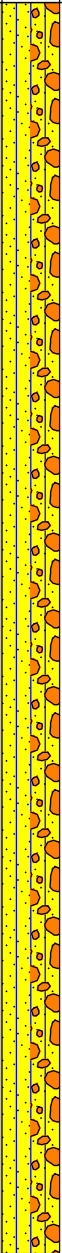
Exploration and Laboratory Results

Contents:

Boring Logs (T-1, A-1, A-2, and A-3)

Note: All attachments are one page unless noted above.

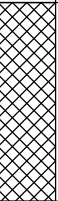

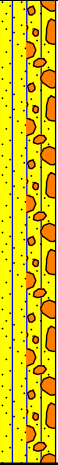
Boring Log No. T-1

Model Layer	Graphic Log	Location: See Exploration Plan		Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
									LL-PL-PI	
		Depth (Ft.)	Elevation.: 770 (Ft.)							
4		SILTY SAND WITH GRAVEL (SM), red, very dense								
				5			22-50/6" N=50+	18.2		
							30-50/6" N=50+	14.3		
		becomes brown								
							30-50/6" N=50+	8.2		
		becomes dense and red brown		10			12-14-25 N=39	16.0		
		becomes very dense								
				15			25-50/4" N=50+			
		18.9	751.1				50/5" N=50+			
Boring Terminated at 18.9 Feet										

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.	Water Level Observations No water observed during drilling	Drill Rig CME 45
		Driller Smith Drilling
Notes	Advancement Method Continuous flight auger	Logged by THB
	Abandonment Method Boring backfilled with auger cuttings upon completion.	Boring Started 03-14-2024 Boring Completed 03-14-2024

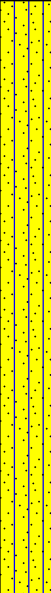


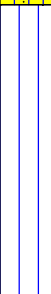



Model Layer	Graphic Log	Location: See Exploration Plan Depth (Ft.) Elevation.: 759 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
								LL-PL-PI	
2		SANDY LEAN CLAY (CL) , with rootlets, red, soft							
		3.0 756		X		1-2-2 N=4	19.8	33-17-16	66
3		SANDY LEAN CLAY (CL) , red, hard							
		6.5 752.5	5	X		8-14-16 N=30	17.1		
				X		33-50/6" N=50+	12.2		
4		SILTY SAND WITH GRAVEL (SM) , red, very dense becomes dense	10	X		13-22-25 N=47	10.8		
		becomes very dense		X		18-40-50/3" N=50+			
		14.8 744.2							
		Boring Terminated at 14.8 Feet							

Boring Log No. A-2

Model Layer	Graphic Log	Location: See Exploration Plan		Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
		Depth (Ft.)	Elevation.: 752 (Ft.)						LL-PL-PI	
1		FILL - LEAN CLAY , red								
		3.0	749				2-2-2 N=4	20.4		
3		SANDY LEAN CLAY (CL) , red, very stiff to hard								
		6.5	745.5	5			3-7-10 N=17	14.3		
4		SILTY SAND WITH GRAVEL (SM) , red, very dense					18-30-50/6" N=50+	13.5		
							50/1" N=50+			
				10						
							50/5" N=50+			
		13.5 becomes light brown	738.5					8.6		
Boring Terminated at 13.5 Feet										

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.	Water Level Observations No water observed during drilling	Drill Rig CME 45
		Driller Smith Drilling
Notes	Advancement Method Continuous flight auger	Logged by THB
	Abandonment Method Boring backfilled with auger cuttings upon completion.	Boring Started 03-14-2024 Boring Completed 03-14-2024

Boring Log No. A-3

Model Layer	Graphic Log	Location: See Exploration Plan		Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines			
		Depth (Ft.)	Elevation.: 735 (Ft.)						LL-PL-PI				
4		SILTY SAND (SM) , red, dense		5			12-14-16 N=30						
		trace gravel, yellow red, very dense											
		becomes dense						30-50/6" N=50+			9.0		
								8-16-16 N=32			13.7		
3		SILT (ML) , pink with gray, hard		10			10-13-18 N=31	23.5					
5		13.5	721.5				50/5" N=50+	14.3					
		13.9	721.1				Boring Terminated at 13.9 Feet						

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.	Water Level Observations No water observed during drilling	Drill Rig CME 45
		Driller Smith Drilling
Notes	Advancement Method Continuous flight auger	Logged by THB
	Abandonment Method Boring backfilled with auger cuttings upon completion.	Boring Started 03-14-2024 Boring Completed 03-14-2024

Supporting Information






Contents:

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.

General Notes

Sampling	Water Level	Field Tests
 Standard Penetration Test	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time  Cave In Encountered 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.	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

Descriptive Soil Classification
Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes
Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. 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.

Strength Terms				
Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	Standard Penetration or N-Value (Blows/Ft.)	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

Relevance of Exploration and Laboratory Test Results
Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification	
				Group Symbol	Group Name ^B
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E	GW	Well-graded gravel ^F
			Cu < 4 and/or [Cc < 1 or Cc > 3.0] ^E	GP	Poorly graded gravel ^F
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}
			Fines classify as CL or CH	GC	Clayey gravel ^{F, G, H}
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E	SW	Well-graded sand ^I
			Cu < 6 and/or [Cc < 1 or Cc > 3.0] ^E	SP	Poorly graded sand ^I
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots above "A" line ^J	CL	Lean clay ^{K, L, M}
			PI < 4 or plots below "A" line ^J	ML	Silt ^{K, L, M}
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay ^{K, L, M, N} Organic silt ^{K, L, M, O}
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K, L, M}
			PI plots below "A" line	MH	Elastic silt ^{K, L, M}
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay ^{K, L, M, P} Organic silt ^{K, L, M, Q}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C 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.

^D 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 $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

^F If soil contains ≥ 15% sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains ≥ 15% gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

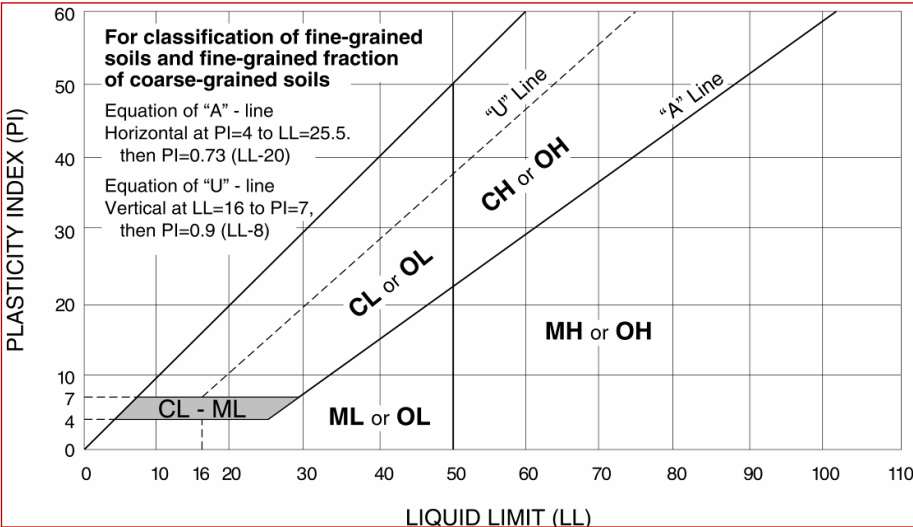
^M If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

^N PI ≥ 4 and plots on or above "A" line.

^O PI < 4 or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



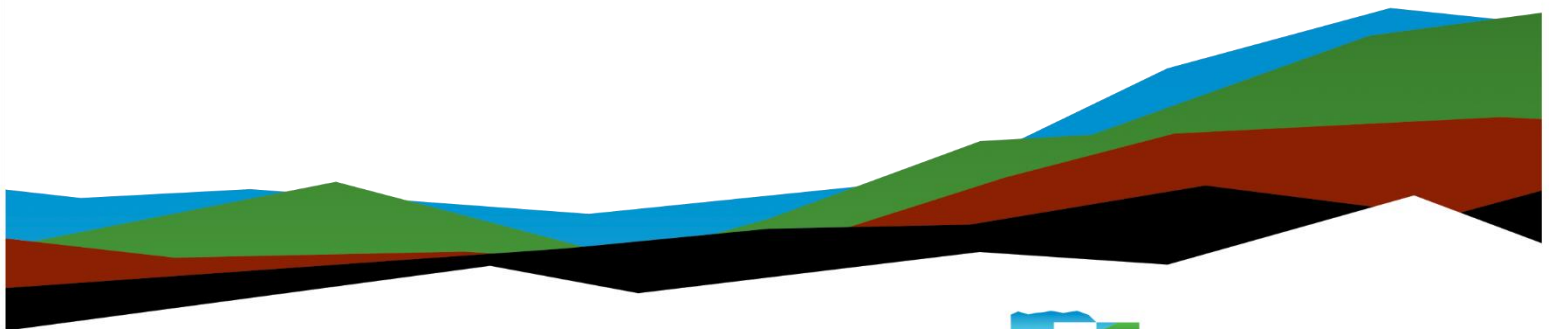
Shelby Guyed Tower

Geotechnical Engineering Report

April 9, 2024 | Terracon Project No. E1235217

Prepared for:

Shelby County Department of Facilities And General Services
280 McDow Road
Columbiana, AL 35051



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April 9, 2024

Shelby County Department of Facilities And General Services
280 McDow Road
Columbiana, Al 35051

Attn: Mr. Trey Gauntt, P.E.
Chief Facilities Management Officer

Re: Geotechnical Engineering Report
Shelby Guyed Tower
Shelby, Shelby County, Alabama
Terracon Project No. E1235217

Dear Mr. Gauntt:

We have completed the scope of Geotechnical Engineering services for the above referenced project in general accordance with Terracon Proposal No. PE1235217 dated November 7, 2023. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations 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

Bryan Ritenour, P.E.
Senior Engineer

Matthew S. McCullough, P.E.
Geotechnical Department Manager



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- Exploration and Testing Procedures
- Site Location and Exploration Plans
- Exploration and Laboratory Results
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Note: This report was originally delivered in a web-based format. **Blue 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  logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed Guyed Tower to be located in the Shelby community of Shelby County, Alabama. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Seismic site classification per IBC
- Site preparation and earthwork
- Foundation design and construction
- Guy wire anchor design parameters

The geotechnical engineering Scope of Services for this project included the advancement of 4 test borings, laboratory testing, engineering analysis, and preparation of this report.

Drawings showing the site and boring locations are shown on the [Site Location](#) and [Exploration Plan](#), respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in the [Exploration Results](#) section.

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	The site location and tower information were provided by Mr. Trey Gauntt via email.
Project Description	The project will consist of a new 330 feet tall guyed radio tower.
Maximum Loads	Based on the furnished information, we anticipate the following structural loads at the tower foundation: <ul style="list-style-type: none">■ Tower: Maximum axial downward 100 kips■ Tower: Maximum torque 2,539 lb-ft■ Guy Anchor: Maximum vertical uplift 36 kips

Item	Description
	<ul style="list-style-type: none"> ■ Guy Anchor: Maximum horizontal 42 kips
Grading/Slopes	No grading plan has been provided. Finish grades are assumed to be within 2 feet of the existing ground surface. Some fill was placed to grade the access roads to the anchor locations and the perimeter of the tower pad. However, we understand that no fill has been, nor will be, placed below the actual tower or anchor foundations. Engineered fill could be placed over the foundations to help resist uplift forces.

Terracon should be notified if any of the above information is inconsistent with the planned construction as modifications to our recommendations may be necessary.

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
Parcel Information	<p>The project site is located off CR-46 near the Shelby community in Shelby, Shelby County, Alabama.</p> <p>Latitude/Longitude (approximate) 33.0864° N, 86.5547° W (See Site Location)</p>
Existing Improvements	None
Current Ground Cover	Bare ground
Existing Topography	Relatively level to gently sloping at tower and guy locations

Item	Description
Local Geology	<p>Published maps from the Geological Survey of Alabama indicate that the project site lies near the contact of the Parkwood Formation/Floyd Shale Undifferentiated and the Knox Group Undifferentiated. The Parkwood Formation consists of interbedded medium to dark-gray shale and light to medium-gray sandstone and the Floyd Shale consists of dark-gray shale, thin beds of sandstone, limestone and chert.</p> <p>The Knox Group Undifferentiated consists of light-gray to light-brown sandy dolomite, dolomitic limestone, and limestone. The Knox Group Undifferentiated feature carbonate-based rock geology and are therefore soluble in slightly acidic groundwater. Weathering is typified by a chemical solutioning process that progresses along joints, fractures and bedding planes in the bedrock. Internal erosion can also occur around chert cobbles and boulders within the soil mass. This process often results in a highly irregular rock profile that contains deep weathered slots filled with soft soils. Voids or caves may also be present in the bedrock. The weathering of the bedrock and subsequent collapse or erosion of the overburden into these openings results in what is referred to as karst topography. Any construction in karst topography is accompanied by some degree of risk for future internal soil erosion and ground subsidence that could affect the stability of the proposed structure. Although no evidence of sinkhole activity was observed during our subsurface exploration on the proposed site, it should be noted that this study does not preclude the possibility of future sinkhole occurrence within the area. Even an extensive drilling exploration program could not rule out the possibility of future sinkhole formation at the site.</p>

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 the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the [Exploration Results](#) and the GeoModel can be found in the [Figures](#) attachment 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	Existing Fill	Sandy lean clay with varying amounts of sand, (N=10 bpf), boring A-3 only
2	Native Sandy Lean Clay	Sandy Lean Clay (CL), generally red, very stiff to hard
3	Native Clayey Sand	Clayey Sand (SC) with varying amounts of chert gravel, frequent hard chert seams, very dense

Groundwater Conditions

The boreholes were observed while drilling and immediately after completion for the presence and level of groundwater. However, groundwater was not observed in any of our borings while drilling or immediately after completion of drilling. We note that groundwater measurements were not taken in boring T-1 at completion of diamond bit coring due to water being introduced during the coring procedures.

The absence of groundwater in the borings does not necessarily mean the borings terminated above groundwater, or the water levels summarized above are stable groundwater levels. A relatively long period may be necessary for a groundwater level to develop and stabilize in a borehole. Long-term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels.

Seismic Site Class

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 soil properties observed at the site and as described on the exploration logs and results, our professional opinion is that a **Seismic Site Classification of C** be considered for the project. Subsurface explorations at this site were extended to a maximum depth of about 25 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or

geophysical testing may be performed to confirm the conditions below the current boring depth.

Geotechnical Overview

A grading plan was not available at the time of this report. If grading is planned at the tower or anchor locations, that information should be provided to Terracon so that our recommendations can be reviewed and revised if necessitated by the proposed grading plan.

The subsurface materials generally consisted of sandy lean clay and clayey sand with chert gravel and frequent hard chert seams of varying thickness. The hard chert seams resulted in auger refusal at depths ranging from about 5 to 9 feet below the ground surface. Boring T-1 was extended using diamond bit coring techniques to penetrate the hard chert seams. Groundwater was not encountered within the maximum depths explored during or at the completion of drilling. We note that groundwater measurements were not taken in boring T-1 at completion of coring due to water being introduced during the coring procedures.

The near surface soils could become unstable with typical earthwork and construction traffic, especially after precipitation events. Effective drainage should be established early in the construction sequence and maintained after construction to avoid potential issues. If possible, the grading should be performed during the warmer and drier times of the year. If grading is performed during the winter months, an increased risk for possible undercutting and replacement of unstable subgrade will persist. Additional site preparation recommendations, including subgrade improvement and fill placement, are provided in the [Earthwork](#) section.

Shallow or deep foundation systems can be used for the proposed tower and anchors. The [Shallow Foundations](#) section addresses support of the tower and anchors bearing on stable native soil. As an alternate, the tower could be supported on drilled shafts. The [Deep Foundations](#) section addresses support of the tower and anchors on drilled shafts.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the [Exploration Results](#)), engineering analyses, and our current understanding of the proposed project. The [General Comments](#) section provides an understanding of the report limitations.

Earthwork

Earthwork was performed to prepare a soil pad for construction of foundations. Any fill should be compacted as needed to support the construction equipment. We understand that no fill will be required to grade the tower nor anchors locations. However, fill may be placed over the tower foundation or anchor blocks.

The performance of the foundations will not only be dependent upon the quality of construction but also upon the stability of the moisture content of bearing soil beneath the foundation. We recommend that positive drainage be established adjacent to all foundations so ponding of rainfall near the foundations does not occur. Accumulations of water near the foundations may cause significant moisture variations in the soils adjacent to the foundations, increasing the potential to weaken the soils or cause vertical movements of the foundations.

Fill Placement and Compaction Requirements

Approved on-site should meet the following compaction requirements.

Item	Structural Fill
Maximum Lift Thickness	8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used
Minimum Compaction Requirements ¹	98% of maximum standard Proctor dry density
Water Content Range ¹	Low Plasticity Cohesive: -2% to +2% of optimum High plasticity cohesive: 0 to +3% of optimum Granular: -3% to +3% of optimum

1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698).

Earthwork Construction Considerations

Excavations into the material containing the hard chert seams will require large excavators with jack hammering attachments. If drilled piers are used, the contractor should be prepared to use coring or rock augers to penetrate the hard chert seams. The site should be graded to prevent ponding of surface water on the prepared subgrades or in excavations.

Although not observed during our field exploration, during seasons of significant rainfall, the groundwater table could affect efforts.

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.

Construction Observation and Testing

The earthwork efforts should be observed by a qualified Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation, topsoil, etc.) and mitigation of unstable areas delineated by the proofroll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by a qualified 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 two tests per lift of fill.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, 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	Individual Column
Maximum Net Allowable Bearing Pressure, Total Load ^{1, 2}	3,000 psf
Required Bearing Stratum³	Very stiff to hard native lean clay or native clayey sand (Geomodel Layers 2 and 3) Bearing stratum to be verified by Terracon
Maximum Foundation Dimensions	6 feet by 6 feet (square)
Ultimate Passive Resistance⁴ (equivalent fluid pressures)	330 pcf
Sliding Resistance⁵	0.35 ultimate coefficient of friction
Minimum Embedment below Finished Grade⁶	5 feet
Estimated Total Settlement from Structural Loads²	About 1 inch
Estimated Differential Settlement^{2, 7}	About 1/2 of total settlement

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. 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](#). Additional geotechnical consultation will be necessary if higher loads are anticipated.
3. Unsuitable or soft soils should be overexcavated and replaced with lean concrete.
4. Use of passive earth pressures requires the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Assumes no hydrostatic pressure. The upper 3 feet of soil should be ignored for lateral support. Apply a factor of safety of at least 1.5.
5. Can be used to compute sliding resistance where foundations are placed on suitable soil. Frictional resistance for granular materials is dependent on the bearing pressure which may vary due to load combinations. For fine-grained materials, lateral resistance using cohesion should not exceed ½ the dead load.

6. Embedment necessary to minimize the effects of seasonal water content variations and due to ignoring the upper 3 feet of soil for lateral support. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
7. Differential settlements are noted for equivalent-loaded foundations and bearing elevation as measured over a span of 50 feet.

Design Parameters – Overturning and Uplift Loads

Shallow foundations subjected to overturning loads should be proportioned such that the resultant eccentricity is maintained in the center-third of the foundation (e.g., $e < b/6$, where b is the foundation width). This requirement is intended to keep the entire foundation area in compression during the extreme lateral/overturning load event. Foundation oversizing may be required to satisfy this condition.

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils with consideration to the IBC basic load combinations.

Item	Description
Soil Moist Unit Weight^{1,2}	120 pcf
Soil weight included in uplift resistance^{1,2}	Soil included within the prism extending up from the top perimeter of the footing at an angle of 20 degrees from vertical to ground surface

1. Effective (or buoyant) unit weight should be used for soil above the foundation level and below a water level. The high groundwater level should be used in uplift design as applicable.
2. For approved on-site soils (Geomodel Layers 2, 3, and 4) used as engineered fill above the anchor and placed in accordance with the Fill Placement and Compaction Requirements section.

Shallow Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the observation 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.

Sensitive soils exposed at the surface of footing excavations may require surficial compaction with hand-held dynamic compaction equipment prior to placing steel and/or

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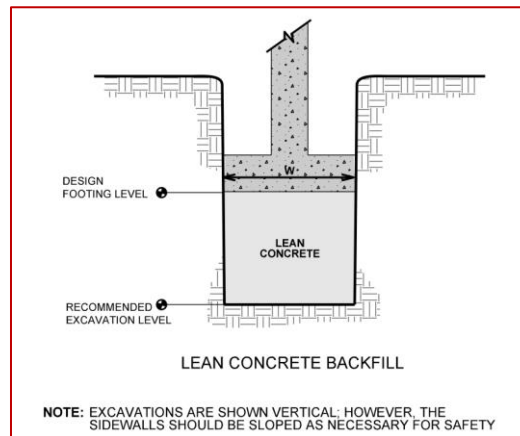
Shelby Guyed Tower | Shelby, Shelby County, Alabama

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concrete. Should surficial compaction not be adequate, construction of a working surface consisting of either crushed stone or a lean concrete mud mat may be required prior to the placement of reinforcing steel and construction of foundations.

If unsuitable bearing soils are observed at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. The lean concrete replacement zone is illustrated on the sketch below.



Deep Foundations

The proposed tower can be founded on straight shaft drilled shaft foundation(s). Engineering values below are for use in designing drilled straight-shaft foundations.

Drilled Shaft Design Parameters

Engineering values for each soil strata encountered by our the boring at the tower location are presented in the following table for use in designing drilled straight-shaft foundations. Also, we have attached the recommended passive pressure diagram.

Material ^{2,3}	Allowable End Bearing Pressure (psf)	Allowable Side Friction (psf)	S_u (psf) ³	ϕ ³	γ' (pcf) ³	Strain at 50% (ϵ_{50})	Horizontal Subgrade Modulus (k) (pci)
Any Type Of Material In Exclusion Zone (0 – 3')	---	---	---	---	---	---	---
Geomodel Layer 2	3,000	400	2,000	--	120	0.005	200
Geomodel Layer 3	3,000	500	---	32	120	---	250

1. See Geomodel and Boring Logs
2. All materials in the upper 3 feet should be ignored for end bearing and lateral support.
3. Definition of Terms:
 - S_u : Undrained shear strength
 - ϕ : Internal friction angle
 - γ' : Effective unit weight

The estimated design parameters presented in the tables above are applicable for the soils encountered at the specific boring location. The end bearing, skin friction, and passive resistance are allowable parameters with factors of safety of 3, 2, and 2, respectively. The estimated values given in the table are based on our borings and past experience with similar soil types. Lateral resistance and friction in the upper 3 feet should be ignored due to the potential effects of frost action, desiccation, drilling disturbance, and unstable soils. Drilled straight-shaft foundations should extend at least 10 feet below the existing ground surface in order to use the recommended allowable end bearing pressures.

Shafts should be adequately reinforced as designed by the Structural Engineer for both tension and shear to sufficient depths. Buoyant unit weights of the soil and concrete should be used in the calculations below the highest anticipated groundwater elevation.

Drilled shafts should have a minimum (center-to-center) spacing of three diameters. Closer spacing may require a reduction in axial load capacity.

Post-construction settlements of drilled shafts designed and constructed as described in this report are estimated to range from about $\frac{1}{2}$ to $\frac{3}{4}$ inch. Differential settlement between individual shafts is expected to be $\frac{1}{2}$ to $\frac{3}{4}$ of the total settlement.

Drilled Shaft Construction Considerations

The drilling contractor should be experienced in the subsurface conditions observed at the site, and the excavations should be performed with equipment capable of providing a clean bearing surface. The drilled straight-shaft foundation system should be installed in general accordance with the procedures presented in "Drilled Shafts: Construction Procedures and Design Methods," FHWA Publication No. FHWA-NHI 18-024.

The contractor is generally expected to use conventional "dry" techniques for installation of the drilled shaft. Subsurface water levels are influenced by seasonal and climatic conditions, which result in fluctuations in subsurface water elevations. Additionally, it is common for water to be present after periods of significant rainfall. Contractors should be prepared to dewater shaft excavations.

To prevent collapse of the sidewalls and/or to control groundwater seepage, the use of temporary steel casing is recommended for construction of the drilled shaft foundations. While withdrawing casing, care should be exercised to maintain concrete inside the casing at a sufficient level to resist earth and hydrostatic pressures acting on the casing exterior. Arching of the concrete, loss of seal and other problems can occur during casing removal and result in contamination of the drilled shaft. These conditions should be considered during the design and construction phases. Placement of loose soil backfill should not be permitted around the casing prior to removal.

Use of a telescoping casing arrangement can be considered to avoid handling long casing lengths. The lower casing should be of sufficient length and stiffness and have an appropriate cutting edge to allow it to be firmly seated into the bedrock to seal out groundwater. Excess water should be evacuated from the casing to place concrete in the "dry."

Care should be taken to not disturb the sides and bottom of the excavation during construction. The bottom of the shaft excavation should be free of loose material before

concrete placement. Concrete should be placed as soon as possible after the foundation excavation is completed, to reduce potential disturbance of the bearing surface.

The drilled shaft installation process should be performed under the observation of the Geotechnical Engineer. The Geotechnical Engineer should document the shaft installation process including soil/rock and groundwater conditions observed, consistency with expected conditions, and details of the installed shaft.

Deadman Anchors

Uplift and horizontal loads at the anchor locations will be resisted by the overburden pressure of the soil above the anchor, passive pressure of the soil in contact with the tower-side face of the anchor, and the frictional resistance between the bottom of the anchor and undisturbed native soil. The following table can be used to size the deadman anchors.

Item	Description
Bearing Stratum³	Very stiff to hard native lean clay or dense or very dense native clayey sand with hard chert seams (Geomodel Layers 2 and 3)
Ultimate passive pressure^{1,3}	330 psf
Coefficient of sliding friction²	0.35
Unit weight of soil over deadman anchor³	120 pcf

1. Assumes sides of the excavation for the anchor are nearly vertical and the concrete is placed neatly against these vertical faces for the passive earth pressure to be valid. If the loaded side is sloped or benched and then backfilled, the allowable passive pressure will be significantly reduced.
2. A minimum factor of safety of 1.5 should be considered in sliding.
3. The upper 3 feet of soil overburden should be ignored for end bearing and lateral support. Use of passive earth pressures requires the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Assumes no hydrostatic pressure.

Item	Description
3.	For approved on-site soils (Geomodel Layers 1, 2, and 3) used as engineered fill above the anchor and placed in accordance with the Fill Placement and Compaction Requirements section.

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. Variations will occur 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 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 affect 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. Construction and site development have the potential to affect adjacent properties. Such

impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. 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.

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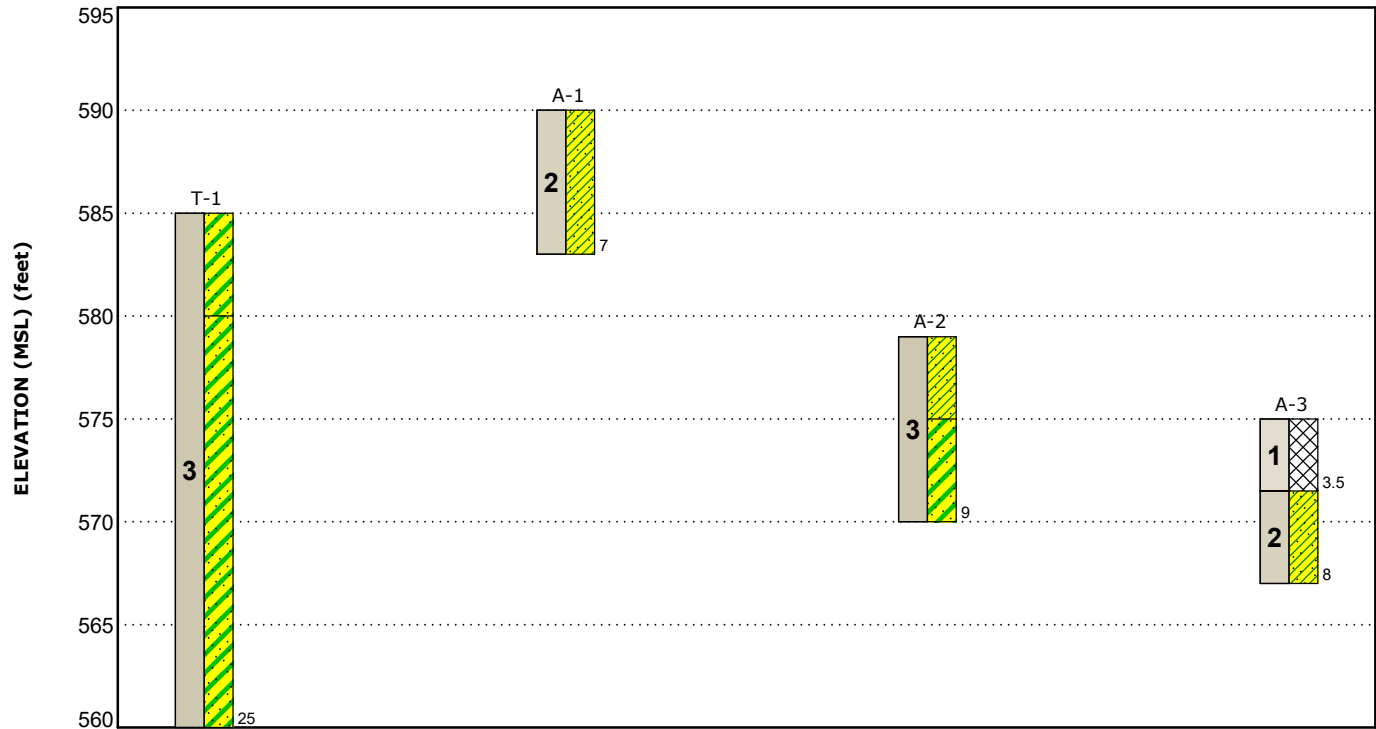


Figures

Contents:

GeoModel

GeoModel



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	Legend	
1	Existing Fill	Sandy lean clay with varying amounts of sand, (N=10 bpf), boring A-3 only	Clayey Sand	Sandy Lean Clay
2	Native Sandy Lean Clay	Sandy Lean Clay (CL), generally red, very stiff to hard	Fill	
3	Native Clayey Sand	Clayey Sand (SC) with varying amounts of chert gravel, frequent hard chert seams, very dense		

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.

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Attachments

Exploration and Testing Procedures

Field Exploration

Boring Designation	Approximate Boring Depth (feet)	Location
T-1	25	Planned tower center area
A-1, A-2, A-3	7 to 9	Planned guy anchors areas

Boring Layout and Elevations: The tower and guy anchor locations were staked in the field by Shelby County. Approximate ground surface elevations were provided by Shelby County.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted rotary drill rig using continuous flight augers (solid stem). Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound conventional safety 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. For safety purposes, all borings were backfilled with auger cuttings after their completion.

Boring T-1 was extended into the clayey sand with hard chert seams using diamond bit coring techniques generally in accordance with ASTM D-2113-83, using a power rotary drill rig. The rock coring procedure consisted of placing a casing within the overburden soils in order to prevent the borehole from collapsing.

We also observed the boreholes while drilling and at the completion of drilling for the presence of groundwater. Groundwater was not observed at these times in the boreholes. We note that groundwater measurements were not taken in boring T-1 at completion of coring due to water being introduced during the rock coring procedures.

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 observed 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

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interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

- Moisture Content
- Percent Passing No. 200 Sieve
- Atterberg Limits

The laboratory testing program often included examination of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

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Site Location and Exploration Plans

Contents:

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above.

Site Location

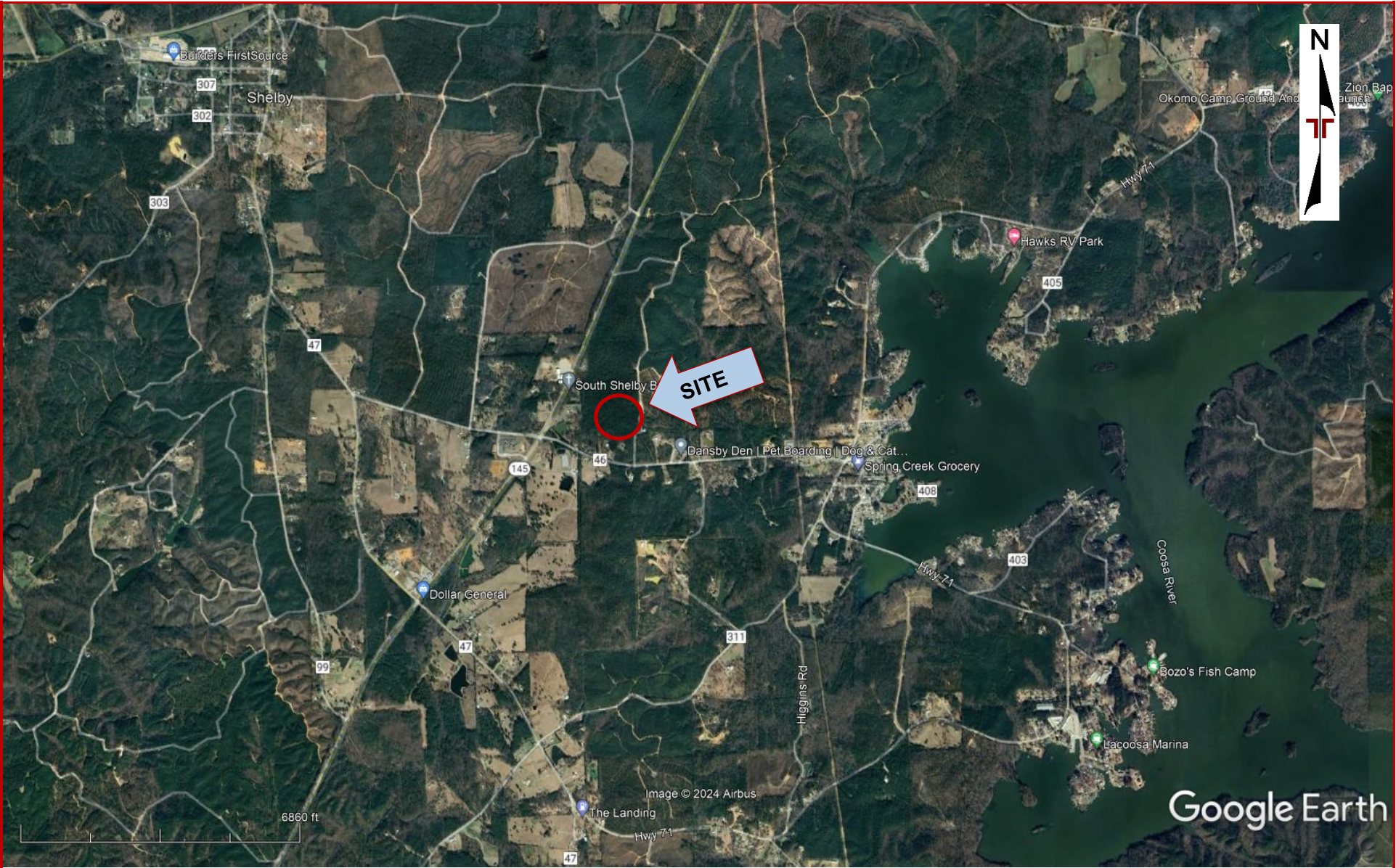


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY GOOGLE EARTH

Exploration Plan




Exploration and Laboratory Results

Contents:

Boring Logs (T-1 and A-1 through A-3)


Note: All attachments are one page unless noted above.

Boring Log No. T-1

Model Layer	Graphic Log	Location: See Exploration Plan	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
								LL-PL-PI	
3		Depth (Ft.) Elevation.: 585 (Ft.) CLAYEY SAND (SC) , with chert gravel, red pink, medium dense							
						5-10-11 N=21	13.7	43-19-24	33
		5.0 Auger refusal at 5' on hard chert seam - Coring initiated 580 CLAYEY SAND (SC) , with frequent hard chert seams, brown to light gray, very dense	5			8-50/6" N=50+	17.8		
		Note: Boring advanced from 5' to 25' using diamond bit coring. There was no recovery, no water loss, consistent feed rate and water pressure, color of wash water pink to brown to light gray.	10						
			15						
			20						
			25						
		25.0 Boring Terminated at 25 Feet 560							

Notes	See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).	Water Level Observations No water observed during drilling	Drill Rig CME 45
	See Supporting Information for explanation of symbols and abbreviations.		
		Advancement Method Continuous flight auger / NQ coring	Driller Smith Drilling
		Abandonment Method Boring backfilled with auger cuttings upon completion.	Logged by THB
			Boring Started 03-12-2024
			Boring Completed 03-12-2024

Boring Log No. A-1

Model Layer	Graphic Log	Location: See Exploration Plan	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
								LL-PL-PI	
2		Depth (Ft.)	Elevation.: 590 (Ft.)						
		SANDY LEAN CLAY (CL) , with chert gravel, red pink, very stiff							
		becomes hard	5		X	6-8-12 N=20	15.0		
					X	11-24-16 N=40	17.1		
		7.0	583						
		Auger Refusal on Presumed Hard Chert Seam of Geomodel Layer 3 at 7 Feet							


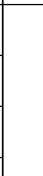

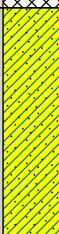
Notes	See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).	Water Level Observations No water observed during drilling	Drill Rig CME 45
	See Supporting Information for explanation of symbols and abbreviations.		
		Advancement Method Continuous flight auger	Driller Smith Drilling
		Abandonment Method Boring backfilled with auger cuttings upon completion.	Logged by THB
			Boring Started 03-12-2024
			Boring Completed 03-12-2024

Boring Log No. A-2

Model Layer	Graphic Log	Location: See Exploration Plan		Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
		Depth (Ft.)	Elevation.: 575 (Ft.)						LL-PL-PI	
3		<u>SANDY LEAN CLAY (CL)</u> , with chert gravel, red, very stiff		5			4-5-12 N=17	38.4		
		4.0	575				20-50/4" N=50+			
		<u>CLAYEY SAND (SC)</u> , with frequent hard chert seams, brown to light gray, very dense					50/1" N=50+			
		9.0	570				50/1" N=50+			
		<i>Auger Refusal on Hard Chert Seam of Geomodel Layer 3 at 9 Feet</i>								

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.	Water Level Observations No water observed during drilling	Drill Rig CME 45
		Driller Smith Drilling
Notes	Advancement Method Continuous flight auger	Logged by THB
		Boring Started 03-12-2024
	Abandonment Method Boring backfilled with auger cuttings upon completion.	Boring Completed 03-12-2024

Boring Log No. A-3

Model Layer	Graphic Log	Location: See Exploration Plan		Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits	Percent Fines
		Depth (Ft.)	Elevation.: 575 (Ft.)						LL-PL-PI	
1		FILL - SANDY LEAN CLAY , red		5			2-4-6 N=10	25.4		
		3.5	571.5				5-8-14 N=22	20.9		
2		SANDY LEAN CLAY (CL) , with chert gravel, red pink, very stiff to hard contains hard chert seams								
		8.0	567							
Auger Refusal on Presumed Hard Chert Seam of Geomodel Layer 3 at 8 Feet										

Notes	See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).	Water Level Observations No water observed during drilling	Drill Rig CME 45
	See Supporting Information for explanation of symbols and abbreviations.		
		Advancement Method Continuous flight auger	Driller Smith Drilling
		Abandonment Method Boring backfilled with auger cuttings upon completion.	Logged by THB
			Boring Started 03-12-2024
			Boring Completed 03-12-2024

Supporting Information







Contents:

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.

General Notes

Sampling	Water Level	Field Tests
 Rock Core  Standard Penetration Test	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time  Cave In Encountered <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>	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

Descriptive Soil Classification
Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes
Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. 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.

Strength Terms				
Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	Standard Penetration or N-Value (Blows/Ft.)	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

Relevance of Exploration and Laboratory Test Results
Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification		
				Group Symbol	Group Name ^B	
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E	GW	Well-graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	Cu < 4 and/or [Cc < 1 or Cc > 3.0] ^E	GP	Poorly graded gravel ^F	
			Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}	
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	Fines classify as CL or CH	GC	Clayey gravel ^{F, G, H}	
			Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E	SW	Well-graded sand ^I	
		Sands with Fines: More than 12% fines ^D	Cu < 6 and/or [Cc < 1 or Cc > 3.0] ^E	SP	Poorly graded sand ^I	
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}	
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}	
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI > 7 and plots above "A" line ^J	CL	Lean clay ^{K, L, M}	
			PI < 4 or plots below "A" line ^J	ML	Silt ^{K, L, M}	
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay ^{K, L, M, N}	
			Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K, L, M}
				PI plots below "A" line	MH	Elastic silt ^{K, L, M}
			Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay ^{K, L, M, P}
					Organic silt ^{K, L, M, Q}	
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat	

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C 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.

^D 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 $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

^F If soil contains ≥ 15% sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains ≥ 15% gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

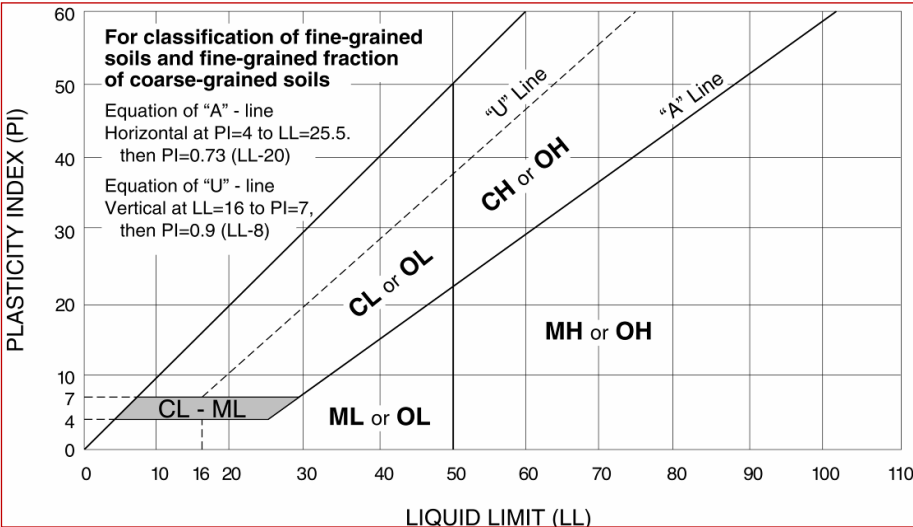
^M If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

^N PI ≥ 4 and plots on or above "A" line.

^O PI < 4 or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.





UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
ANTENNA STRUCTURE REGISTRATION



OWNER: Shelby County Commission

FCC Registration Number (FRN):0009871252

ATTN: Phil Burns Shelby County Commission PO BOX 467 200 West College St	Antenna Structure Registration Number 1327231
	Issue Date 02/06/2024
Location of Antenna Structure 2105 Warrior PKWY Alabaster, AL 35007 County: SHELBY	Ground Elevation (AMSL) 200.0 meters
	Overall Height Above Ground (AGL) 77.0 meters
Latitude 33- 13- 07.5 N	Longitude 086- 50- 59.0 W
NAD83	
Overall Height Above Mean Sea Level (AMSL) 277.0 meters	
Center of Array Coordinates N/A	
Type of Structure LTOWER Lattice Tower	
Painting and Lighting Requirements: FAA Chapters 4, 6, 15 Paint and Light in Accordance with FAA Circular Number 70/7460-1M Conditions:	

This registration is effective upon completion of the described antenna structure and notification to the Commission. **YOU MUST NOTIFY THE COMMISSION WITHIN 5 DAYS OF COMPLETION OF CONSTRUCTION OR CANCELLATION OF YOUR PROJECT, please file FCC Form 854.** To file electronically, connect to the antenna structure registration system by pointing your web browser to <https://www.fcc.gov/antenna-structure-registration>. Electronic filing is required. Use purpose code "NT" for notification of completion of construction; use purpose code "CA" to cancel your registration.

The Antenna Structure Registration is not an authorization to construct radio facilities or transmit radio signals. It is necessary that all radio equipment on this structure be covered by a valid FCC license or construction permit.

You must immediately provide a copy of this Registration to all tenant licensees and permittees sited on the structure described on this Registration (although not required, you may want to use Certified Mail to obtain proof of receipt), and display your Registration Number at the site. See reverse for important information about the Commission's Antenna Structure Registration rules.

You must comply with all applicable FCC obstruction marking and lighting requirements, as set forth in Part 17 of the Commission's Rules (47 C.F.R. Part 17). These rules include, but are not limited to:

- **Posting the Registration Number:** The Antenna Structure Registration Number must be displayed in a conspicuous place so that it is readily visible near the base of the antenna structure. Materials used to display the Registration Number must be weather-resistant and of sufficient size to be easily seen at the base of the antenna structure. Exceptions exist for certain historic structures. See 47 C.F.R. 17.4(g)-(h).
- **Inspecting lights and equipment:** The obstruction lighting must be observed at least every 24 hours in order to detect any outages or malfunctions. Lighting equipment, indicators, and associated devices must be inspected at least once every three months.
- **Reporting outages and malfunctions:** When any top steady-burning light or a flashing light (in any position) burns out or malfunctions, the outage must be reported to the nearest FAA Flight Service Station, unless corrected within 30 minutes. The FAA must again be notified when the light is restored. The owner must also maintain a log of these outages and malfunctions.
- **Maintaining assigned painting:** The antenna structure must be repainted as often as necessary to maintain good visibility.
- **Complying with environmental rules:** If you certified that grant of this registration would not have a significant environmental impact, you must nevertheless maintain all pertinent records and be ready to provide documentation supporting this certification and compliance with the rules, in the event that such information is requested by the Commission pursuant to 47 C.F.R. 1.1307(d).
- **Updating information:** The owner must notify the FCC of proposed modifications to this structure; of any change in ownership; or, within 30 days of dismantlement of the structure.

Copies of the Code of Federal Regulations (which contain the FCC's antenna structure registration rules, 47 C.F.R Part 17) are available from the Government Printing Office (GPO). To purchase CFR volumes, call (202) 512-1800. For GPO Customer Service, call (202) 512-1803. For additional FCC information, consult the Antenna Homepage on the internet at <https://www.fcc.gov/antenna-structure-registration> or call (877) 480-3201 (TTY 717-338-2824).



**UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
ANTENNA STRUCTURE REGISTRATION**



OWNER: Shelby County Commission

FCC Registration Number (FRN): 0009871252

ATTN: Phil Burns Shelby County Commission PO BOX 467 200 West College St	Antenna Structure Registration Number 1327230		
	Issue Date 02/06/2024		
Location of Antenna Structure 2705 HWY 22 Montevallo, AL 35115 County: SHELBY	Ground Elevation (AMSL) 245.0 meters		
	Overall Height Above Ground (AGL) 93.0 meters		
Latitude 33- 09- 53.6 N	Longitude 086- 53- 03.4 W	NAD83	Overall Height Above Mean Sea Level (AMSL) 338.0 meters
Center of Array Coordinates N/A			Type of Structure GTOWER Guyed Structure Used for Communication Purposes
Painting and Lighting Requirements: FAA Chapters 4, 8, 15 Paint and Light in Accordance with FAA Circular Number 70/7460-1M Conditions:			

This registration is effective upon completion of the described antenna structure and notification to the Commission. **YOU MUST NOTIFY THE COMMISSION WITHIN 5 DAYS OF COMPLETION OF CONSTRUCTION OR CANCELLATION OF YOUR PROJECT**, please file FCC Form 854. To file electronically, connect to the antenna structure registration system by pointing your web browser to <https://www.fcc.gov/antenna-structure-registration>. Electronic filing is required. Use purpose code "NT" for notification of completion of construction; use purpose code "CA" to cancel your registration.

The Antenna Structure Registration is not an authorization to construct radio facilities or transmit radio signals. It is necessary that all radio equipment on this structure be covered by a valid FCC license or construction permit.

You must immediately provide a copy of this Registration to all tenant licensees and permittees sited on the structure described on this Registration (although not required, you may want to use Certified Mail to obtain proof of receipt), and display your Registration Number at the site. See reverse for important information about the Commission's Antenna Structure Registration rules.

You must comply with all applicable FCC obstruction marking and lighting requirements, as set forth in Part 17 of the Commission's Rules (47 C.F.R. Part 17). These rules include, but are not limited to:

- **Posting the Registration Number:** The Antenna Structure Registration Number must be displayed in a conspicuous place so that it is readily visible near the base of the antenna structure. Materials used to display the Registration Number must be weather-resistant and of sufficient size to be easily seen at the base of the antenna structure. Exceptions exist for certain historic structures. See 47 C.F.R. 17.4(g)-(h).
- **Inspecting lights and equipment:** The obstruction lighting must be observed at least every 24 hours in order to detect any outages or malfunctions. Lighting equipment, indicators, and associated devices must be inspected at least once every three months.
- **Reporting outages and malfunctions:** When any top steady-burning light or a flashing light (in any position) burns out or malfunctions, the outage must be reported to the nearest FAA Flight Service Station, unless corrected within 30 minutes. The FAA must again be notified when the light is restored. The owner must also maintain a log of these outages and malfunctions.
- **Maintaining assigned painting:** The antenna structure must be repainted as often as necessary to maintain good visibility.
- **Complying with environmental rules:** If you certified that grant of this registration would not have a significant environmental impact, you must nevertheless maintain all pertinent records and be ready to provide documentation supporting this certification and compliance with the rules, in the event that such information is requested by the Commission pursuant to 47 C.F.R. 1.1307(d).
- **Updating information:** The owner must notify the FCC of proposed modifications to this structure; of any change in ownership; or, within 30 days of dismantlement of the structure.

Copies of the Code of Federal Regulations (which contain the FCC's antenna structure registration rules, 47 C.F.R Part 17) are available from the Government Printing Office (GPO). To purchase CFR volumes, call (202) 512-1800. For GPO Customer Service, call (202) 512-1803. For additional FCC information, consult the Antenna Homepage on the internet at <https://www.fcc.gov/antenna-structure-registration> or call (877) 480-3201 (TTY 717-338-2824).



UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
ANTENNA STRUCTURE REGISTRATION



OWNER: Shelby County Commission

FCC Registration Number (FRN): 0009871252

ATTN: Phil Burns Shelby County Commission PO BOX 467 200 West College ST	Antenna Structure Registration Number 1327232
	Issue Date 02/06/2024
Location of Antenna Structure 1255 HWY 46 Shelby, AL 35143 County: SHELBY	Ground Elevation (AMSL) 180.0 meters
	Overall Height Above Ground (AGL) 93.0 meters
Latitude 33- 05- 11.8 N	Longitude 086- 33- 18.1 W
NAD83	
Overall Height Above Mean Sea Level (AMSL) 273.0 meters	
Center of Array Coordinates N/A	
Type of Structure GTOWER Guyed Structure Used for Communication Purposes	
Painting and Lighting Requirements: FAA Chapters 4, 6, 15 Paint and Light in Accordance with FAA Circular Number 70/7460-1M	
Conditions:	

This registration is effective upon completion of the described antenna structure and notification to the Commission. **YOU MUST NOTIFY THE COMMISSION WITHIN 5 DAYS OF COMPLETION OF CONSTRUCTION OR CANCELLATION OF YOUR PROJECT**, please file FCC Form 854. To file electronically, connect to the antenna structure registration system by pointing your web browser to <https://www.fcc.gov/antenna-structure-registration>. Electronic filing is required. Use purpose code "NT" for notification of completion of construction; use purpose code "CA" to cancel your registration.

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- **Inspecting lights and equipment:** The obstruction lighting must be observed at least every 24 hours in order to detect any outages or malfunctions. Lighting equipment, indicators, and associated devices must be inspected at least once every three months.
- **Reporting outages and malfunctions:** When any top steady-burning light or a flashing light (in any position) burns out or malfunctions, the outage must be reported to the nearest FAA Flight Service Station, unless corrected within 30 minutes. The FAA must again be notified when the light is restored. The owner must also maintain a log of these outages and malfunctions.
- **Maintaining assigned painting:** The antenna structure must be repainted as often as necessary to maintain good visibility.
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