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PART 1 GENERAL

- I. **DRAWINGS PREPARED BY THE ARCHITECTS AND/OR ENGINEERS, NUMBERED, TITLED, AND DATED AS SHOWN BELOW, TOGETHER WITH SPECIFICATIONS, SHOW AND DESCRIBE THE WORK.**
- I. **FURTHER DRAWINGS, IF REQUIRED IN EXPLANATION OF THE WORK, SHALL BE BINDING UPON THE CONTRACTOR AS PART OF THESE DRAWINGS. DRAWINGS AND SPECIFICATIONS SHALL BE CONSIDERED COMPLIMENTARY SO THAT ANYTHING SHOWN UPON ONE, OR DESCRIBED BY THE OTHER, OR IMPLIED BY EITHER OR BOTH, SHALL BE EXECUTED AND PERFORMED AS IF SHOWN AND/OR DESCRIBED BY BOTH.**

SHEET	SHEET TITLE	ISSUED	REVISED
AS1.00	SITE PLAN	05/01/21	
A1.01	ENLARGED SITE PLAN	05/01/21	

END OF SECTION

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Heard County Park.
- B. Owner's Name: Heard County Board of Commissioners.
- C. Architect's Name: Gardner Spencer Smith Tench & Jarbeau, P.C..
- D. Summary:
 - 1. CONVERT EXISTING TENNIS COURTS TO ONE BASKETBALL COURT & ONE PICKLEBALL COURT. HEARD COUNTY TO DEMOLISH ASPHALT DOWN TO GRAVEL BASE. CONTRACTOR TO INSTALL 1 ½" ASPHALT COURT. THE FOLOWING TO BE BY HEARD COUNTY: FINISH SURFACE, STRIPING, NETS, GOALS & FENCES.
 - 2. CONTRACTOR TO DEMOLISH AND HAUL OFF EXISTING CONCRETE BASKETBALL COURT AND ASSOCIATED COMPONENTS AND MATERIALS. REMOVE MATERIALS DOWN TO BARE SOIL BELOW. NEW BASE AND SURFACE FOR PLAYGROUND TO BE BY PLAYGROUND EQUIPMENT INSTALLER.
 - 3. INSTALL SLAB AND BELOW GRADE UTILITIES FOR INSTALLATION OF PREFABRICATED RESTROOM BY HEARD COUNTY. COORDINATE WITH SPECIFICATIONS FOR PREFABRICATED RESTROOMS. CONNECT PLUMBING AND ELECTRICAL TO EXISTING SERVICES. EXISTING CONCESSIONS & RESTROOM BUILDING, SLAB & BASE TO BE DEMOLISHED BY HEARD COUNTY.
 - 4. BASE PRICE TO ASSUME THAT HEARD COUNTY WILL INSTALL A NEW 10'-0" WIDE ASPHALT WALKWAY AND BASE. ALTERNATE NO. 1: CONTRACTOR TO INSTALL A 6'-0" WIDE 4" THICK CONCRETE WALKWAY.
 - 5. CONTRACTOR TO INSTALL A NEW 6" DIAMETER SCHEDULE 40 PVC SANITARY SEWER LINE CONNECTING THE EXISTING PUMP STATION TO THE STUB OUTS FOR THE NEW RESTROOM FIXTURES. PIPE SHALL FOLLOW THE FALL AND DEPTH OF THE EXISTING PIPE. EXISTING PIPE SHALL BE ABANDONED AND LEFT IN PLACE. CAP AT EACH END.

1.01 OWNER'S REPRESENTATIVE

- A. All documentation required by the Specifications to be submitted to the Heard County Board of Commissioners through the response to the RFP.
- B. Changes in the Contract Sum shall be authorized in writing solely by Heard County Board of Commissioners.
- C. Except as otherwise noted, the Contractor shall disregard any instructions from persons other than authorized representatives of the Heard County Board of Commissioners.

1.02 OBLIGATIONS OF CONTRACTOR

- A. Except as otherwise specifically noted, provide and pay for:
 - 1. Labor, materials and equipment;
 - 2. Tools, construction equipment and machinery;
 - 3. Temporary utilities required for construction;
 - 4. Other temporary facilities and services necessary for proper execution and completion of work;
 - 5. "As-Built" drawings.
- B. Pay legally required sales, consumer and use taxes.
- C. Make all applications, secure and pay for as may be required for proper execution and completion of the work, and as required by authorities having jurisdiction:

1. Any Permits, Business Licenses, deposits and/or fees of any kind that are a prerequisite for doing any of the work of this Contract.
 2. Interim and final inspections of the Work and/or any portions of the Work.
 3. Post all bonds (and/or security deposits) that are a prerequisite for doing any of the work of this Contract.
- D. Give required notices.
- E. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities having jurisdiction over this work.
- F. Promptly submit written notice to Gardner Spencer Smith Tench & Jarbeau, P.C. of any observed variance of Contract Documents from legal requirements.
- G. The Contractor shall have a supervisor on the project anytime any work is taking place or when delivery of equipment is expected.

1.03 WORK/COSTS BY OWNER

- A. Items marked "by Heard County" on the drawings.

1.04 OWNER OCCUPANCY

- A. Heard County Board of Commissioners intends to occupy the Project upon Substantial Completion.
- B. Cooperate with Heard County Board of Commissioners to minimize conflict and to facilitate Heard County Board of Commissioners's operations.
- C. Schedule the Work to accommodate Heard County Board of Commissioners occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Arrange use of site and premises to allow:
1. Heard County Board of Commissioners occupancy.
 - a. Heard County Board of Commissioners will endeavor to cooperate with the Contractor's operation when the Contractor has notified Heard County Board of Commissioners in advance of the need for changes in operations in order to accommodate construction operations.
 - b. Conduct the work so as to cause the least interference with Heard County Board of Commissioners' operations..
- C. Provide access to and from site as required by law and by Heard County Board of Commissioners:
1. Do not obstruct roadways, sidewalks, or other public ways without permit.
- D. Storage and staging areas are limited but will be available on site.
- E. Signs: Provide signs adequate to direct visitors and Heard County Board of Commissioners's personnel.
1. Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project, unless authorized by Heard County Board of Commissioners
 2. Do not install any signs in violation of local zoning ordinances.
- F. Existing building spaces may not be used for storage.
- G. Time Restrictions:
1. Limit conduct of especially noisy especially noisy, malodorous, and dusty exterior work to the hours of time mutually agreeable to the Contractor and Owner.
- H. Utility Outages and Shutdown:
1. Limit disruption of utility services to hours the building is unoccupied.
 2. Prevent accidental disruption of utility services to other facilities.

1.06 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Heard County Board of Commissioners.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SECURITY AND SAFETY PROCEDURES

- A. Coordinate construction security and safety measures with security and safety programs of the Heard County Board of Commissioners.
 - 1. Establish procedures and notification priority required for emergency action including, but not limited to, events involving fire, injury, and/or damage to property.
 - 2. Post and maintain current list of emergency numbers required for action or requested by the Heard County Board of Commissioners.

3.02 PROTECTION OF PUBLIC FROM INJURY

- A. Due to the proximity of the work to the public in the vicinity of the construction area, the Contractor is cautioned to exercise special care in protecting the public from injury during all phases of the work. Contractor is directed to provide adequate protective barriers to restrain public access to all hazardous areas. Before commencing the Work, a safety plan shall be developed by Contractor.
- B. As the development and implementation of the safety plan is the sole responsibility of Contractor.

3.03 COORDINATION

- A. If necessary, inform each party involved, in writing, of procedures required for coordination; include requirements for giving notice, submitting reports, and attending meetings.
 - 1. Inform the Heard County Board of Commissioners when coordination of his work or activities is required.
- B. When the following must be modified or in any way interrupted, provide alternate facilities acceptable to Heard County Board of Commissioners:.
 - 1. Utilities which must remain in operation.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.02 RELATED SECTIONS

- A. Division 01 for submitting Applications for Payment.
- B. Division 01 for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule and construction photographs.
- C. Division 01 for submitting test and inspection reports
- D. Division 01 for submitting warranties and project Record Documents.

1.03 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.

1.04 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
- B. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Gardner Spencer Smith Tench & Jarbeau, P.C.'s receipt of submittal.
 - 1. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time of processing must be delayed to permit coordination with subsequent submittals. Gardner Spencer Smith Tench & Jarbeau, P.C. will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Concurrent Review: Where concurrent review of submittals by Gardner Spencer Smith Tench & Jarbeau, P.C.'s consultants, Owner, or other parties is required, allow 15 business days for initial review of each submittal.
 - 3. If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 4. Allow 10 business days for processing each resubmittal.
 - 5. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- C. Deviations: Highlight, encircle, or otherwise identify deviations from Contract Documents on submittals.
 - a. Date.
 - b. Destination (To:).
 - c. Source (From:).
 - d. Names of subcontractor, manufacturer, and supplier.
 - e. Category and type of submittal.
 - f. Submittal and transmittal distribution record.
 - g. Remarks.
 - h. Signature of transmitter.

PART 2 PRODUCTS

2.01 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Gardner Spencer Smith Tench & Jarbeau, P.C. will return two copies. Mark up and retain one returned copy as a Project Record Document.
 - a. Submit one correctable, translucent, reproducible print and blue- or black-line prints. Gardner Spencer Smith Tench & Jarbeau, P.C. will return the reproducible print.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagram showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operating and maintenance manuals.
 - k. Compliance with recognized trade association standards.
 - l. Compliance with recognized testing agency standards.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 4. Includes the following information for all products:
 - a. Location where product was manufactured.
 - b. Location where product was harvested or extracted.
 - c. Percent Post-industrial recycled content.
 - d. Percent Post-consumer recycled content.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shop work manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8 1/2 by 11 inches, but no longer than 30 by 40 inches.

- D. Coordination Drawings: Comply with requirements in Division 01.
- E. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tubular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.

2.02 INFORMATIONAL SUBMITTALS

- A. General: prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Gardner Spencer Smith Tench & Jarbeau, P.C. will not return copies.
 - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entry responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - 3. Test and Inspection Reports: Comply with requirements in Division 01.
- B. Contractor's Construction Schedule: Comply with requirements in Division 01.

PART 3 EXECUTION

4.01 CONTRATOR'S REVIEW

- A. Review each submittal and check for compliance with Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Gardner Spencer Smith Tench & Jarbeau, P.C.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

4.02 ARCHITECTS ACTIONS

- A. General: Gardner Spencer Smith Tench & Jarbeau, P.C. will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Gardner Spencer Smith Tench & Jarbeau, P.C. will review each submittal, make marks to indicate corrections or modifications required, and return it. Gardner Spencer Smith Tench & Jarbeau, P.C. will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section includes procedural requirements for quality assurance and quality control.
- B. Submittals.
- C. References and standards.
- D. Control of installation.
- E. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-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 quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-control services required by Gardner Spencer Smith Tench & Jarbeau, P.C., Heard County Board of Commissioners, or authorities having jurisdiction are not limited by provisions of this Section.
- F. Control of installation.
- G. Mock-ups.

1.02 RELATED REQUIREMENTS

- A. Section 01 3310- Submittal Procedures.

1.03 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants 2008 (Reapproved 2014).
- B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation 2017.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry 2019.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction 2019.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2020.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing 2015.

1.04 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect.

- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

D.

1.05 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.06 SUBMITTALS

- A. See Section 01 3310 - Submittal Procedures.
- B. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report in the inspection of the testing agency by a recognized authority.
- C. Testing Agency Qualifications:
1. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.
 2. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
- D. Design Data: Submit for Gardner Spencer Smith Tench & Jarbeau, P.C.'s knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the contract documents, or for Heard County Board of Commissioners' information.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
 2. Description of test and inspection.
 3. Identification of applicable standards.
 4. Identification of test and inspection methods.
 5. Number of tests and inspections required.
 6. Time schedule or time span for tests and inspections.
 7. Entity responsible for performing tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- F. Test Reports: After each test/inspection, promptly submit two copies of report to Gardner Spencer Smith Tench & Jarbeau, P.C.
- G. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Gardner Spencer Smith Tench & Jarbeau, P.C., in quantities specified for Product Data.
1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Gardner Spencer Smith Tench & Jarbeau, P.C..
- H. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Heard County Board of Commissioners's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.07 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Gardner Spencer Smith Tench & Jarbeau, P.C. before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Gardner Spencer Smith Tench & Jarbeau, P.C. shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.08 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.
- B. Preconstruction Testing: Testing agency shall perform preconstruction testing for compliance with specified requirements for performance and test methods.
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens and assemblies representative of proposed materials and construction. Provide sizes and configurations of assemblies to adequately demonstrate capability of product to comply with performance requirements.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Fabricate and install test assemblies using installers who will perform the same tasks for Project.
 - d. When testing is complete, remove assemblies; do not reuse materials on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.09 QUALITY CONTROL

- A. Heard County Board of Commissioners Responsibilities: Where quality-control services are indicated as Heard County Board of Commissioners's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Heard County Board of Commissioners will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
 - 2. Costs for re-testing and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Special Tests and Inspections: Heard County Board of Commissioners will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Heard County Board of Commissioners.
1. Testing agency will notify Gardner Spencer Smith Tench & Jarbeau, P.C. and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Gardner Spencer Smith Tench & Jarbeau, P.C. with copy to Contractor and to authorities having jurisdiction.
 3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 5. Testing agency will retest and re-inspect corrected work.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.
- E. Re-testing/Re-inspecting: regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including re-testing and re-inspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Gardner Spencer Smith Tench & Jarbeau, P.C. and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Gardner Spencer Smith Tench & Jarbeau, P.C. and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
 5. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incident labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field-curing of test samples.

5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 6. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

5.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Gardner Spencer Smith Tench & Jarbeau, P.C. before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

5.02 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
- C. Protect construction exposed by or for quality-control service activities.
- D. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Contract descriptions, description of alterations work, work by others, future work, occupancy conditions, use of site and premises, work sequence.

1.02 DEFINITIONS

- A. Final Cleaning is hereby defined to include the general requirements near the end of the Contract Time, in preparation for final acceptance, final payment, normal termination of the Contract, occupancy by the Owner and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in the sections of Division 01 through 48. The time of final cleaning is recognized to be directly related to "Substantial Completion", and therefore may be either a single time period for the entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates.
- B. Final Cleaning includes all work associated with remedial cleaning required after any work of the contractor, regardless of when the work was completed.

1.03 SUBSTANTIAL COMPLETION

- A. Prior to requesting Gardner Spencer Smith Tench & Jarbeau, P.C.'s inspection for certification of Substantial Completion (for either the entire work or portions thereof), Final Cleaning must be complete and list all known exceptions in the request.

1.04 CERTIFICATION OF FINAL ACCEPTANCE

- A. Prior to requesting Gardner Spencer Smith Tench & Jarbeau, P.C.'s final inspection for certification of final acceptance and final payment, as required by the General Conditions, complete the following and list known exceptions (if any) in request.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 FINAL CLEANING OF NEW CONSTRUCTION

- A. General: Special cleaning for specific units of work is specified in the Sections of Division 02 through 48.
- B. Provide final cleaning of the Work as part of the project being declared substantially complete.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Formwork for cast-in place concrete.
- B. Openings for other work.
- C. Form accessories.
- D. Form stripping.

1.02 RELATED REQUIREMENTS

- A. Section 01 4000 – Quality Requirements.
- B. Section 03 2000 - Concrete Reinforcing.
- C. Section 03 3000 - Cast-In-Place Concrete.
- D. Section 03 3513 – Concrete Finishing

1.03 REFERENCE STANDARDS

- A. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials 2010 (Reapproved 2015).
- B. ACI 301 - Specifications for Structural Concrete 2016.
- C. ACI 318 - Building Code Requirements for Structural Concrete and Commentary 2014 (Errata 2018).
- D. ACI 347R - Guide to Formwork for Concrete 2014, with Errata (2017).
- E. ASME A17.1 - Safety Code for Elevators and Escalators 2019.
- F. PS 1 - Structural Plywood 2009 (Revised 2019).

1.04 DESIGN REQUIREMENTS

- A. Design, engineer and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension.

1.05 SUBMITTALS

- A. See Division 01 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on void form materials and installation requirements.
- C. Shop Drawings: Indicate pertinent dimensions, materials, bracing, and arrangement of joints and ties.

1.06 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 347, ACI 301, and ACI 318.
- B. Designer Qualifications: Design formwork under direct supervision of a Professional Structural Engineer experienced in design of concrete formwork and licensed in the State of Georgia.
- C. Plywood: Conform to tables for form design and strength in APA Form V 345.

1.07 REGULATORY REQUIREMENTS

- A. Conform to applicable code for design, fabrication, erection and removal of formwork.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver prefabricated forms and installation instructions in manufacturer's packaging.
- B. Store prefabricated forms off ground in ventilated and protected manner to prevent deterioration from moisture.

PART 2 PRODUCTS**2.01 FORMWORK - GENERAL**

- A. Provide concrete forms as required to accomplish cast-in-place concrete work.
- B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.
- C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

2.02 GENERAL

- A. Form materials may be reused during progress of the Work provided they are completely cleaned and reconditioned, recoated for each use, capable of producing formwork of required quality, and are structurally sound.
- B. Form Lumber: WCLIB Construction Grade or Better, WWPA No. 1 or Better.

PART 3 EXECUTION**4.01 EXAMINATION**

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

4.02 EARTH FORMS

- A. Do not use earth cuts for formed vertical surfaces unless approved by Gardner Spencer Smith Tench & Jarbeau, P.C..
- B. Where allowed, hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete.

4.03 ERECTION - FORMWORK

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

4.04 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.

4.05 FORMWORK TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 117, unless otherwise indicated.
- B. Construct and align formwork for elevator hoistway in accordance with ASME A17.1.
- C. Camber slabs and beams in accordance with ACI 301.
- D. Construct formwork to provide completed cast-in-place concrete surfaces:
 - 1. Variation in depth of stair treads: 3/16 inch, maximum.
 - 2. Variation from level in slabs: +/- 1/4 inch in any 10 foot radius.

4.06 RE-USE OF FORMS

- A. Re-Use forms only when properly maintained and in condition to produce the formed finish required.
- B. Do not re-use forms that cannot be tightly butted and made watertight.

4.07 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Division 01.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

Heard County

Concrete Forming and
Accessories

03 1000-3

Heard County Park

Issued: 06/01/21

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4.08 CLEAN UP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Reinforcing steel for cast-in-place concrete.
- B. Supports and accessories for steel reinforcement.

1.02 RELATED REQUIREMENTS

- A. Section 01 4000 – Quality Requirements
- B. Section 03 1000 - Concrete Forming and Accessories.
- C. Section 03 3000 – Cast in Place Concrete
- D. Section 03 3513 - Concrete Finishing

1.03 REFERENCE STANDARDS

- A. ASTM A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2007.
- B. ASTM A185/A185M - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete; 2007.
- C. ASTM A497/A497M - Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete; 2007.
- D. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire 2019.
- E. ASTM A704/A704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement 2019, with Editorial Revision.

1.04 SUBMITTALS

- A. See Division 01 - Administrative Requirements, for submittal procedures.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Avoid exposure to dirt, moisture or conditions harmful to reinforcing.
- B. Reinforcing steel bars, wire, and wire fabric shall be stored on the Project site to permit easy access for examination and identification of each shipment. Material of each shipment shall be separated for size and shape.

PART 2 PRODUCTS

2.01 REINFORCEMENT

- A. Wire Fabric for Reinforcement: ASTM A 185.
- B. Reinforcement Accessories:
 - 1. Tie Wire: ASTM A 82, fully annealed, copper-bearing steel wire, 16 gage minimum.
 - 2. Chairs, Spacers, Supports, and Other Accessories: Standard manufacture conforming to ACI-315 fabricated from steel wire of required types and sizes. For reinforcement supported from grade, provide properly sized dense precast blocks of concrete.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.

3.02 CLEAN UP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.03 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete free-standing site walls.

1.02 RELATED REQUIREMENTS

- A. Section 01 400 – Quality Requirements
- B. Section 03 1000 - Concrete Forming and Accessories
- C. Section 03 2000 - Concrete Reinforcing.
- D. Section 03 3513 – Concrete Finishing

1.03 REFERENCE STANDARDS

- A. ASTM A185/A185M - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete; 2007.
- B. ASTM A497/A497M - Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete; 2007.
- C. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete 2016.
- D. ASTM D994/D994M - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type) 2011 (Reapproved 2016).
- E. ASTM E 1155M - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers [Metric]; 1996 (Reapproved 2008).

1.04 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings indicating locations of cast-in-place concrete Work and accessory items such as vapor barriers. Include details and locations of reinforcing, embedded items, and interfacing with other Work.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Material Samples: Submit Samples illustrating concrete finishes, minimum 12 inches x 12 inches in size.
- D. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
- E. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.
- F. Certificates: Submit a notarized certificate that each of following conforms to standards indicated:
 - 1. Aggregates – ASTM Standards C33.
 - 2. Admixtures - ASTM Standards C260.
 - 3. Curing materials - ASTM Standards C171.

1.05 RECORD DOCUMENTS

- A. Ready-mixed concrete shall be used for all cast-in-place concrete. Ready-mixed concrete suppliers shall each qualify under the requirements of ASTM Specification C 94-06a entitled "Ready-Mixed Concrete". Ready-mixed concrete shall be mixed and transported as required by the same ASTM Specification, and delivery tickets shall be dated the time of leaving the plant and the time the truck is completely unloaded..
- B. Submit shop drawings in accordance with the requirements of the Submittals Section. Show size, type, and location of all reinforcing bars, bar supports, and forms. Drawings must bear the approval of the General contractor. Drawings will not be reviewed without this approval.
- C. Submit mix designs for review.

1.06 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.
- D. Continuous inspection shall be provided at the batch plant and for transit-mixed concrete to run check sieve analysis of aggregate, check moisture content of fine aggregate, check design of mix, check cement being used with test reports, check loading of mixer trucks, and certify to quantities of materials placed in each mixer truck.
- E. Inspection shall be performed by a representative of a testing laboratory selected by Heard County Board of Commissioners. Heard County Board of Commissioners will pay for inspection costs. Notify the laboratory 24 hours in advance of time concrete is to be mixed. Notify the laboratory of postponement or cancellation of mixing within at least 24 hours of scheduling time.
- F. Continuous batch plant inspection requirement may be waived. Waiver shall be in writing, including Heard County Board of Commissioners approval.
- G. Strength Test of Concrete: Refer to Division 01: Testing and Inspection.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Mixing and Placing Concrete: Refer to Division 01: Testing and Inspection.
- B. Ready-mix concrete shall be mixed and delivered in accordance with ASTM C 94 . Each batch of concrete delivered to the Project site shall be accompanied by a time slip bearing departure time and signature of batch plant supervisor. Concrete shall be placed within 90 minutes after start of mixing.
- C. Store cement and aggregate materials so as to prevent their deterioration or intrusion by foreign matter. Deteriorated or contaminated materials shall not be furnished.

1.09 JOB CONDITIONS

- A. Cold Weather Requirements:
 - 1. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. Surfaces, in which concrete is to come in contact with, shall be free from frost or ice. No frozen materials or materials containing ice shall be furnished.
 - 2. When placing concrete during freezing or near-freezing weather the mix shall have a temperature of at least 50 degrees F., but not more than 90 degrees F. when cement is added. Concrete shall be maintained at a temperature of at least 50 degrees F. for at least 72 hours after placing or until it has thoroughly hydrated. When necessary, concrete materials shall be heated before mixing. Special precautions shall be provided for protection of transit-mixed concrete.
- B. Hot Weather Requirements: During hot weather, proper attention shall be provided for ingredients, production methods, handling, placing, protection and curing, to prevent excessive concrete temperatures or water evaporation which could impair required strength or durability.

PART 2 PRODUCTS

2.01 GENERAL

- A. Ready-Mixed Concrete: Mix and deliver in accordance with requirements of ASTM C94.

- B. Strength of Concrete: Concrete, unless otherwise indicated or specified, shall be provided with a minimum ultimate 28-day strength of 3000 psi (f'c). For high-early-strength concrete, age for reaching the f'c shall be as indicated on Drawings.

2.02 FORMWORK

- A. Comply with requirements of Section 03 1000.

2.03 REINFORCEMENT

- A. Comply with requirements of Section 03 2000.

2.04 CONCRETE MATERIALS

- A. Cement: ASTM C 150. Furnished cement shall be as selected and reviewed for concrete proportioning.
- B. Aggregates: Aggregates shall conform to ASTM C 33 and C 227 except as modified herein. Any suitable individual grading of coarse aggregate may be furnished, provided Grading of Combined Aggregate indicated in following table is obtained. Refer to Section 01420: Testing and Inspection.

2.05 CONCRETE MIX DESIGN

- A. All Concrete
 1. 28-Day Strength: 3000 psi
 2. Type: Normal Weight
 3. Slump Range: 4" + 1"
 4. Weight: 135 pcf - 150pcf
 5. Air Entrained: 5% + 1% (For Exterior Concrete Only)
- B. Accessories: Accessories used in exposed concrete shall be galvanized. Footing and slab-on-ground reinforcements shall be supported on solid blocks of concrete, concrete brick, or similar concrete masonry.

PART 3 EXECUTION

3.01 GENERAL

- A. Time of Placing: Do not place concrete until reinforcement, conduits, outlet boxes, anchors, hangers, sleeves, bolts, and other embedded materials are securely fastened in place. Contact the Heard County Board of Commissioners's OR at least 24 hours before placing concrete; do not place concrete until inspected by the Heard County Board of Commissioners's OR.
- B. Pouring Record: A record shall be kept on the Project site of time and date of placing concrete in each portion of structure. Such record shall be maintained on the Project site until Substantial Completion and shall be available for examination by Gardner Spencer Smith Tench & Jarbeau, P.C. and Heard County Board of Commissioners's OR.

3.02 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.03 PREPARATION

- A. Reglets and Rebates:
 1. Form reglets and rebates in concrete to receive flashing, frames and other equipment as detailed and required. Coordinate dimensions and locations required with other related Work.
 2. If concrete slabs on grade adjoin a wall or other perpendicular concrete surface, form a reglet in wall to receive and carry horizontal concrete Work. Reglet shall be full thickness of the slab and shall be 3/4 inch wide, unless otherwise indicated. Requirement does not apply to exterior walks, unless specifically indicated.

- B. Anchor Slots: Dove-tail anchor slots at concrete walls to receive masonry veneer shall be set vertically in forms, 24 inches maximum on centers measured horizontally. Anchor slots shall be No. 24 gage galvanized sheet steel with removable fiber filler to prevent seepage of cement in slot.
- C. Screeds: Install screeds accurately and maintain at required grade or slab elevations after steel reinforcement has been installed, but before starting to place concrete. Install screeds adjacent to walls and in parallel rows not to exceed 8 feet on centers.
- D. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
 - 1. Earth forms may be used for footing forms providing the earth is clean cut, and bottoms level and sound.
 - 2. Construct to conform to the shape, lines, grades and dimensions indicated on the drawings. Make forms substantial and sufficiently tight to prevent leakage of mortar, and braced or tied together to maintain position and shape. Forms shall not deflect under the dead load weight of the liquid concrete or construction loads.
 - 3. Verify that forms are clean and free of rust before applying release agent.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Conveying and Placing:
 - 1. Concrete shall be placed only under direct observation of the Heard County Board of Commissioners's OR. Do not place concrete outside of regular working hours, unless the Heard County Board of Commissioners's OR has been notified at least 48 hours in advance.
 - 2. Concrete shall be conveyed from mixer to location of final placement by methods, which will prevent separation or loss of materials.
 - 3. Concrete shall be placed as nearly as practicable to its final position to avoid segregation due to re-handling or flowing. No concrete that has partially hydrated or has been contaminated by foreign materials shall be placed, nor shall re-tempered concrete or concrete which has been remixed after initial set be placed.
 - 4. In placing concrete in columns, walls or thin sections, provide openings in forms, elephant trunks, tremies or other recognized devices, to prevent segregation and accumulation of partially hydrated concrete on forms or metal reinforcement above level of concrete being placed. Such devices shall be installed so that concrete will be dropped vertically. Unconfined vertical drop of concrete from end of such devices to final placement surface shall not exceed 6 feet.
 - 5. Concrete shall be placed as a continuous operation until placing of panel or section is completed. Top surfaces of vertically formed lifts shall be level.
 - 6. Concrete shall be thoroughly consolidated during placement, and shall be worked around reinforcement and embedded fixtures with mechanical vibrators.
 - a. Vibrators of the internal type shall be used to mechanically vibrate concrete while being placed. Particular attention shall be given the vibrating concrete to insure a dense, homogeneous mass free of air bubbles and honeycombs; however, care shall be taken not to separate materials by excessive vibrating. Vibrators shall not be used as a transporting facility.
 - 7. Where conditions make consolidation difficult, or where reinforcement is congested, batches of mortar containing same proportions of cement, sand, and water as provided in the concrete, shall first be deposited in the forms to a depth of at least one inch.
- C. Compaction and Screeding:
 - 1. Tamp freshly placed concrete with a heavy tamper until at least 3/8 inch of mortar is brought to surface. Concrete shall then be tamped with a light tamper and screeded with a heavy straightedge until depressions and irregularities are

eliminated, and surface is true to finish grades or elevations. Remove excess water and debris.

2. Where slabs are to receive separate cement finish or mortar setting bed, continued tamping to raise mortar to surface is not performed. Laitance shall be removed by brushing with a stiff brush or by light sandblasting to expose clean top surface of coarse aggregate.
- D. Curing:
1. Concrete shall be maintained above 50 degrees F., and in a moist condition for 7 days after placing, except that high early strength concrete shall be maintained in a moist condition for 3 days.
- E. Cement Base: Cement base shall be of the height, thickness, and shape detailed. Base shall be reinforced with one inch mesh, 18 gage, zinc-coated wire fabric. Base finish mixture shall be one part Portland cement, 2 parts of fine aggregate and one part pea gravel. Colored cement base shall include a chemically inert mineral oxide pigment in the mix.
- F. Conduit Work: Electrical conduit shall be completely buried in the concrete. Low conduit shall be tied down on top of the bottom reinforcing rods. No conduit shall be spaced closer than 2 1/2 inches on center.

3.05 FIELD QUALITY CONTROL

- A. Molded Cylinder Tests:
1. Heard County Board of Commissioners Consultant will prepare cylinders. Each cylinder shall be dated, given a number, point in structure from which sample was obtained, mix design number, mix design strength and result of accompanying slump test noted.
 2. Separate tests of molded concrete cylinders obtained at same place and time shall be made at age of 3 days, 7 days, and 28 days. A strength test shall be the average of the compressive strength of 2 cylinders, obtained from the same sample of concrete and tested at 28 days or at test age designated for determination of f'_c .
 3. Test cylinders shall be prepared at the Project site and stored in testing laboratory in accordance with ASTM C 31, and tested in accordance with ASTM C 39.
- B. Core Test: At request of Gardner Spencer Smith Tench & Jarbeau, P.C., cores of hardened concrete shall be cut from portions of hydrated structures for testing, in accordance with ASTM C 42.
1. Provide 4 inch diameter cores at representative places throughout the structure as designated by the Architect.
 2. In general, provide sufficient cores to represent concrete placed with at least one core for each 4,000 square feet of building area, and at least 3 cores total for each Project.
 3. Where cores have been removed, fill voids with drypack, and patch the finish to match the adjacent existing surfaces.
- C. Concrete Consistency: Measure consistency according to ASTM C 143. Test twice each day or partial day's run of the mixer.
- D. Adjustment of Mix: If the strength of any grade of concrete for any portion of Work, as indicated by molded test cylinders, fall below minimum 28 days compressive strength specified or indicated, adjust mix design for remaining portion of construction so that resulting concrete meets minimum strength requirements.

3.06 DEFECTIVE CONCRETE

- A. Should strength of any grade of concrete, for any portion of Work indicated by tests of molded cylinders and core tests, fall below minimum 28 days strength specified or indicated, concrete will be deemed defective Work and shall be replaced or adequately

strengthened in a manner acceptable to the Gardner Spencer Smith Tench & Jarbeau, P.C. and Heard County Board of Commissioners's OR.

- B. Concrete Work that is not formed as indicated, is not true within 1/250 of span, not true to intended alignment, not plumb or level where so intended, not true to intended grades and levels, contains sawdust shavings, wood or embedded debris, or does not fully conform to Contract provisions, shall be deemed to be defective Work and shall be removed and replaced.
- C. Repair or replacement of defective concrete will be determined by the Gardner Spencer Smith Tench & Jarbeau, P.C.. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Gardner Spencer Smith Tench & Jarbeau, P.C. for each individual area.

3.07 CLEAN UP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.08 PROTECTION

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.
- B. Protect the Work of this section until Substantial Completion.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Finishing slabs on grade, monolithic floor slabs, and separate floor toppings.
 - 1. Finishes shall be defined in ACI 301. Uses of finishes shall be as defined herein, shown on drawings or as suggested in ACI 301 where not indicated.

1.02 RELATED SECTIONS

- A. Section 031000 - Concrete Forms & Accessories.
- B. Section 032000 - Concrete Reinforcement.
- C. Section 033000 - Cast-in-Place Concrete: Prepared concrete floors ready to receive finish.
- D. Section 033000 - Cast-in-Place Concrete: Control and formed expansion and contraction joints and joint devices.

1.03 REFERENCES

- A. ACI 117 - Standard Tolerances for Concrete Construction and Materials.
- B. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; 2005.
- C. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International; 2004.
- D. ACT 305 - Hot Weather Concreting.
- E. ACT 306 - Cold Weather Concreting.
- F. ACT 308 - Standard Practice for Curing Concrete.
- G. ASTM E 1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 1996 (Reapproved 2001).

1.04 SUBMITTALS

- A. See Division 01 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on concrete hardener, sealer, slip resistant treatment, and any other manufactured products, including information on compatibility of different products and limitations.
- C. Maintenance Data: Provide data on maintenance renewal of applied coatings.
- D. Samples: Submit five pounds of aggregate proposed for exposed aggregate finishes, indicate color, texture and size anticipated in finish work conditions.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's sealed packaging, including application instructions.

1.07 PROJECT CONDITIONS

- A. Coordinate the work with concrete floor placement and concrete floor curing.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Concrete shall be protected from premature drying, excessively hot or cold temperatures, and mechanical injury immediately after placement and shall be maintained with minimal moisture loss at relatively constant temperature for the period necessary for hydration of the cement and hardening of the concrete.

- B. Concrete finishes shall be protected against frost and freezing, rapid drying, and heavy rains.

PART 2 PRODUCTS- NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that floor surfaces are acceptable to receive the work of this section.
- B. See individual Floor Finish - Division 09 requirements for allowable vapor emission and floor flatness requirements.

3.02 FINISHING

- A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.1R.
- B. Finishing of Formed Surfaces:
 - 1. Rough form finish:
 - a. Leave surfaces with the texture imparted by forms, except patch tie holes and defects.
 - b. Remove fins exceeding 1/4 inch in height.
 - c. Use for below grade exterior cast-in-place foundation walls and concealed spaces.
 - 2. Smooth form finish:
 - a. Coordinate as necessary to secure form construction using smooth, hard, uniform surfaces, with number of seams kept to a practical minimum and in a uniform and orderly pattern.
 - b. Patch tie holes and defects.
 - c. Remove fins completely.
 - d. All interior and exterior cast-in-place concrete surfaces exposed to view but receiving an additional finish covering (excluding paint) shall receive a smooth formed finish.
 - 3. Smooth rubbed finish:
 - a. Produce on newly hardened concrete no later than the day following form removal.
 - b. Wet the surfaces, and rub with carborundum brick or other abrasive until uniform color and texture are produced.
 - c. Do not use a cement grout other than the cement paste drawn from the concrete itself by the rubbing process.
 - d. All interior and exterior cast-in-place concrete surfaces exposed to view with no finish coating other than paint shall receive a smooth rubbed finish.
 - 4. Grout cleaned finish:
 - a. Do not start cleaning operations until all contiguous surfaces to be cleaned are completed and accessible.
 - b. Do not permit cleaning as the work progresses.
 - c. Mix one part Portland cement and 1-1/2 parts fine sand with sufficient water to produce a grout having the consistency of thick paint.
 - d. Wet the surface of the concrete sufficiently to prevent absorption of water from the grout and apply the grout uniformly with brushes or spray gun.
 - e. Immediately after applying the grout, scrub the surface vigorously with a cork float or stone to coat the surface and fill all air bubbles and holes.
 - f. While the grout is still plastic, remove all excess grout by working the surface with a rubber float, sack, or other means.
 - g. After the surface whites from drying (about 30 minutes at normal temperatures), rub vigorously with clean burlap.
 - h. Keep the surface damp for at least 36 hours after final rubbing.

- i. Use for repair of exposed finish surfaces to receive paint or clear sealer.
- C. Finishing Slabs:
1. Uniformly spread, screed and consolidate concrete. Do not spread concrete by vibration.
 2. Float Finish:
 - a. Float with hand float or with a powered disc float. High spots to be cut down and low spots to be filled.
 - b. Use as preparation for further finishing.
 3. Troweled Finish:
 - a. After floating, steel trowel to smooth, mark free surface.
 - b. Use for exposed floors and slabs to receive carpeting and/or resilient flooring and where indicated.
 4. Fine Broom Finish:
 - a. After floating and while the surface is still plastic, provide a fine textured finish by drawing a fine fiber bristle broom uniformly over the surface in one direction only.
 - b. Use exposed for floors and slabs to receive ceramic tile using the thin set setting method and where indicated.
 - c. Apply broom finish to all exterior exposed concrete deck slabs.
 5. Slip Resistant Finish:
 - a. After floating a non-slip rotary finish and while the surface is still plastic, uniformly broadcast aluminum oxide particles onto surface at the rate of 30 pounds per 100 sq. ft. evenly installed by dust-on method and embedded into surface during first troweling operation. Trowel particles into surface to provide embedment but do not force below surface. Additional abrasive grains, in amount of 30 pounds per 100 square feet, shall then be evenly installed and embedded into surface during final troweling operation.
 - b. Use abrasive finish for concrete stair treads, landings, ramps and steps on interior and exterior of buildings, and interior exposed floors and slabs in maintenance, utility and locker room areas, if no other finish is specified.

3.03 TOLERANCES

- A. An independent testing agency, as specified in Section 01 4000, will inspect finished slabs for flatness.
- B. Minimum F(F) Floor Flatness and F(L) Floor Levelness Values:
 1. Exposed to View and Foot Traffic: F(F) of 20; F(L) of 15, on-grade only.
 2. Under Thick-Bed Tile: F(F) of 20; F(L) of 15, on-grade only.
 3. Under Carpeting: F(F) of 25; F(L) of 20, on-grade only.
 4. Under Thin Resilient Flooring and Thinset Tile: F(F) of 35; F(L) of 25, on-grade only.
 5. Under Portland Cement Terrazzo: F(F) of 50; F(L) of 50, on-grade only.
- C. Measure F(F) and F(L) in accordance with ASTM E1155, within 48 hours after slab installation; report both composite overall values and local values for each measured section.
- D. Correct the slab surface if composite overall value is less than specified and if local value is less than two-thirds of specified value or less than $F(F) \frac{13}{F(L)} 10$.
- E. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.04 PROTECTION

- A. Protect freshly placed concrete from damage due to water, falling objects or persons marring finish surface of concrete. Surfaces damaged due to lack of protective measures shall be removed and replaced with fresh concrete.
- B. Protect concrete surfaces and finishes to be left exposed from damage during subsequent construction operations and make necessary repairs to damaged areas, returning to original condition.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prefabricated modular bathrooms provided as self-contained and finished units by others.
- B. Coordination with delivery and final positioning of bathroom units modules on project.

1.02 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. IAPMO (UPC) - Uniform Plumbing Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. NSF 61 - Drinking Water System Components - Health Effects 2020.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation: GC to coordinate with manufacturer and installer of prefabricated restroom units for installation of utilities and units.

1.04 FIELD CONDITIONS

- A. Restroom installer will examine project field conditions regarding access, existing dimensions and general location of work areas, and perform work as required to deliver, install, and connect prefabricated bathroom unit modules in coordination with adjacent work by other trades.
- B. Ensure final installation locations are broom swept clean without debris, or piles of materials in the way that could negatively impact installer's progress.
- C. Provide drainage pipes pre-installed in floor deck to be cut flush unless otherwise indicated on drawings.
- D. Provide final installation locations that are flat and level; flatness defined as not more than 3/16 inch floor variation over 10 foot span; levelness defined as no more than 1/8 inch slope over an 8 foot span.
- E. Report any non-compliant site conditions to Gardner Spencer Smith Tench & Jarbeau, P.C. prior to commencing this work.

PART 2 PRODUCTS

3.01 MANUFACTURERS

- A. Bathroom Unit Modules: Denali Flush Building with 2 restrooms.

3.02 MANUFACTURED UNITS

- A. Manufacturer and Installer to provide Denali double flush toilet building with standard simulated cedar shake roof and board and batt with naps valley rock wall texture (or any available wall texture), two tone color, three 16-gauge galvanized steel doors and frames, two skylights, stainless steel plumbing fixtures (2-lavatories, 2-water closets- all with I/R actuators), 4 gallon electric hot water heater, two soap dispensers, two Saniflow hand dryers, two paper towel dispensers, one sanitary napkin disposal, two Koala baby changing stations, two 3-roll toilet paper holders, two exhaust fans, three GFI outlets, three floor drains, two s/s mirrors, ADA grab bars, ADA signs, one hose bib in chase area, ADA frost free drinking fountain with bottle filler, motion controlled interior lights and photo cell controlled exterior lights. Manufacturer/ Installer to provide PE stamped drawings and State Approvals.

- B. Manufacturer and Installer to provide prefabricated bathroom unit modules with self supporting structural system.
- C. Manufacturer and Installer to provide prefabricated modular bathroom units with water supply and drain piping, mechanical equipment, and electrical circuits that are properly routed and coordinated for field connection with building plumbing, mechanical, and electrical systems.
- D. Manufacturer and Installer to provide Electrical Components, Devices, and Accessories: UL (DIR) or ITS (DIR) listed and labeled in compliance with NFPA 70 by a qualified testing agency, and marked for intended location and application.
 - 1. .

PART 3 EXECUTION

4.01 EXAMINATION

- A. Examine substrates, adjacent areas and conditions, with installer present, for compliance with manufacturer's requirements, including installation tolerances and other conditions effecting performance of this work.
- B. Examine rough-in connections for plumbing and electrical services to verify actual locations of services prior to installation of bathroom unit modules.
- C. Verify conditions of construction effecting this work and that required inspections have been completed prior to delivery of bathroom unit modules.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

4.02 PREPARATION

- A. Clean supporting areas of bathroom unit modules thoroughly prior to commencing installation.
- B. Prepare substrate surfaces using methods as recommended by manufacturer under project conditions.

4.03 INTERFACE WITH OTHER WORK

- A. Coordinate interface connections between bathroom unit module's and other work with module manufacturer using integration drawings provided prior to starting building plumbing, mechanical, and electrical rough-in work.
- B. Install connections to building plumbing system from bathroom unit module's plumbing fixtures, including hot and cold water lines and drain lines.
- C. Install connections to building electrical system from bathroom unit module's electrical equipment.

4.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Schedule inspection of bathroom unit module's by manufacturer, installer and Owner's representative upon completion of installation in each unit's final position.
- C. Provide testing of plumbing, mechanical, and electrical systems and components to verify proper operation by each contractor responsible for this work.
- D. Repair or remove and replace defective work, finishes and accessories as directed by Gardner Spencer Smith Tench & Jarbeau, P.C. prior to Date of Substantial Completion.

4.05 CLEANING

- A. Clean surroundings for installation of units by others.

END OF SECTION

**SECTION 32 1216
ASPHALT PAVING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aggregate base course.
- B. Single course bituminous concrete paving.

1.02 REFERENCE STANDARDS

- A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses 1965 (2004).
- B. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types 1997.
- C. AI MS-19 - A Basic Asphalt Emulsion Manual Fourth Edition.
- D. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates 2014.
- E. ASTM D946 - Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction 2009a.
- F. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) 2011.
- G. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils 2010.

1.03 QUALITY ASSURANCE

- A. Perform Work in accordance with State of GA Highways standard.
- B. Obtain materials from same source throughout.

1.04 REGULATORY REQUIREMENTS

- A. Conform to applicable code for paving work on public property.

1.05 FIELD CONDITIONS

- A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.
- B. Place bitumen mixture when temperature is not more than 15 F degrees below bitumen supplier's bill of lading and not more than maximum specified temperature.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Comply with applicable code for paving work on public property.

2.02 MATERIALS

- A. Aggregate for Base Course- Gravel : Angular crushed washed stone; free of shale, clay, friable material and debris.
 - 1. Crushed stone shall be compacted to one hundred (100) percent of the maximum dry density for the crushed stone material as determined by the Modified Proctor Compaction Test (ASTM D 1557 METHOD D).

2.03 ASPHALT PAVING MIXES AND MIX DESIGN

- A. Base Course: 3.0 to 6 percent of asphalt cement by weight in mixture in accordance with AI MS-2.
- B. Medium duty pavement shall have six (6) inches of graded aggregate base, two (2) inches of 9.5 mm Type 2 Superpave topping. All of the above depths shall be measured after compaction.

PART 3 EXECUTION

3.01 INSPECTION

- A. The paving sub-contractor shall examine all areas to be paved. Any defects that may adversely affect proper installation of this work shall be reported to the Architect in writing and shall have been corrected before start of this work. Beginning of work shall signify acceptance of surfaces by the paving sub-contractor.

3.02 EXAMINATION

- A. Verify that compacted subgrade is dry and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.

3.03 SUBGRADE STABILIZATION

- A. The entire subgrade area shall be proofrolled as specified in Section 310, Georgia DOT Specifications. All defective areas that pump or shove, or are found to be soft, shall be removed and satisfactorily repaired and test rolled again as specified in Section 310 Georgia DOT Specifications. Subgrade shall be stabilized as recommended by the geotechnical engineer. Required subgrade stabilization for subgrade areas that are located in a graded "cut" area, shall be performed on a unit price and contract price will be adjusted accordingly. Required stabilization for subgrade areas that are located in a graded "fill" area shall be performed at no additional cost to the Owner. All subgrade (within allowance) shall be shaped, rolled and thoroughly compacted.

3.04 BASE COURSE

- A. Place and compact base course.
 - 1. Graded aggregate base shall be compacted and shall be smooth and true to established profiles and sections and shall be of the average thickness of eight (8) inches for heavy and six (6) inches for medium duty pavement areas, varying at no point by no more than three eighths (3/8) inch from a true section.

3.05 PREPARATION - PRIMER

- A. Apply primer in accordance with manufacturer's instructions.
- B. Apply primer on aggregate base or subbase at uniform rate of 1/3 gal/sq yd.
- C. Use clean sand to blot excess primer.

3.06 PREPARATION - TACK COAT

- A. Apply tack coat in accordance with manufacturer's instructions.
- B. Apply tack coat on asphalt or concrete surfaces over subgrade surface at uniform rate of 1/3 gal/sq yd.

3.07 PLACING ASPHALT PAVEMENT - SINGLE COURSE

- A. Install Work in accordance with State of GA Highways standards.

- B. Place asphalt within 24 hours of applying primer or tack coat.
- C. Compact pavement by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- D. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

3.08 TOLERANCES

- A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.
- B. Variation from True Elevation: Within 1/2 inch.

3.09 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for general requirements for quality control.
- B. Provide field inspection and testing. Take samples and perform tests in accordance with AI MS-2.
- C. Tests of the paving thickness shall be performed by a testing agency approved by the Owner and Architect. Tests will be paid for by the Owner. Failing test shall be paid for by the Contractor.
- D. Tests for the pavement thickness shall consist of one (1) four (4) inch diameter core per five hundred (500) sq. yards of pavement. Cores shall be taken through base and binder course prior to placing surface course. Contractor shall repair holes resulting from coring to match existing pavement elevations prior to placing surface course.
- E. The average thickness of all specimens shall be at least the specified thickness of the specified course. In areas where there is a deficiency in the thickness of the course, the surface course shall be increased in thickness the amount of the average deficiency of all tests. If tests show a deficiency of one quarter (1/4) inch or more in the surface course, the Contractor shall be required to place an additional surface course of one (1) inch in thickness.

3.10 PAINTED LINES ON BITUMINOUS PAVING

- A. Approximately two (2) calendar weeks after surface course has been completed, parking lines shall be painted as reflected on the staking plan. This shall include lines, arrows, handicap designations and all other required pavement painting as detailed.
- B. Paint four (4) inch wide stripes. Paint shall be applied with the temperature at fifty (50) degrees Fahrenheit or above.
- C. Apply paint in one or more coats, by roller, spray or striping machine to a minimum of fifteen (15) mils. Uneven lines will not be accepted.
- D. All work shall be done in accordance with Section 652, Georgia State Highway Department Standard Specifications.

3.11 CLEAN UP

- A. At the completion of the work, the Contractor shall clean up all scraps, rubbish and surplus materials caused by this work and haul them away from the site. Remove all asphaltic materials from adjacent surfaces and leave in neat, clean and orderly condition

END OF SECTION