

CHAPTER 5

DESIGN/CONSTRUCTION DOCUMENT & CONSTRUCTION STANDARDS

5.1 RELATED STATUTORY AUTHORITY

- 5.1.1 SC Code § 6-9-110 exempts the State from any county, municipal or local ordinance or regulation that requires the purchase or acquisition of a permit, license, or other device used to enforce any building standard.
- 5.1.2 SC Code § 6-10-3- provides the South Carolina Energy Standards Act of 2009, as modified by 2012 Act 143, which requires that all buildings be designed and constructed in compliance with the 2009 International Energy Conservation Code.
- 5.1.3 SC Code § 6-29-770 requires the State to comply with local zoning ordinances.
- 5.1.4 SC Code § 10-1-180 provides that all construction, improvement, and renovation of state buildings shall comply with all applicable standards as specified in the Manual for Planning and Execution of State Permanent Improvements Part II. The State Engineer shall determine the enforcement of the aforementioned codes and referenced standards on state buildings.
- 5.1.5 SC Code § 10-5-210 et. seq., “South Carolina Accessibility Act,” sets accessibility standards for public buildings.
- 5.1.6 SC Code § 11-35-2720 permits the Chief Procurement Officers to prepare or review, issue, revise and maintain the specifications for supplies, services, and construction required by the State.
- 5.1.7 SC Code § 11-35-2730 requires that all specifications shall be written to assure cost effective procurement of the State’s actual needs and shall not be unduly restrictive.
- 5.1.8 SC Code § 11-35-2740 permits the Chief Procurement Officers to delegate in writing to a using agency the authority to prepare and utilize its own specifications. The specifications must assure maximum cost-effective procurements that are consistent with regulations promulgated by SFAA.
- 5.1.9 SC Code § 11-35-2750 requires that specifications prepared by architects and engineers shall be nonrestrictive and shall maximize the cost effectiveness of all procurements.
- 5.1.10 SC Code § 11-35-3020 provides additional bidding procedures for construction procurement.
- 5.1.11 SC Code § 23-43-10 et. seq., “South Carolina Modular Buildings Construction Act,” requires that all Modular Buildings be certified by the South Carolina Buildings Code Council.
- 5.1.12 SC Code § 40-3-280 and SC Regulation 11-11 requires all construction documents to bear a seal of a licensed architect, when required to be prepared by a licensed architect.
- 5.1.13 SC Code § 40-22-270 requires all construction documents bear a seal of a licensed engineer, when required to be prepared by a licensed engineer.
- 5.1.14 SC Code § 40-10-250 requires a Fire Sprinkler System Specification Sheet to be completed for every fire sprinkler system to be installed in South Carolina.
- 5.1.15 SC Code § 48-52-810 thru 860 provides the South Carolina Energy Independence Act of 2007 which requires that all major facilities projects not exempted by the act be designed and constructed to achieve at least LEED Silver certification from the US Green Building Council or at least two globes certification using the Green Building Initiative’s Green Globes rating system.
- 5.1.16 Governor’s Executive Order No. 82-19 requires the State Engineer to assure compliance with the “State of South Carolina Building Standards in Floodplain Areas”.

5.2 AUTHORITY HAVING JURISDICTION

- 5.2.1 The State Engineer is the authority having jurisdiction over state buildings and determines the enforcement and interpretation of codes and standards applicable to those buildings.
- 5.2.2 The State Engineer is also the flood plain coordinator for state construction in flood hazard areas.
- 5.2.3 The requirement to obtain any local Business License, if applicable, is the responsibility of both the A/E and the Contractor.

5.3 CODES AND STANDARDS

- 5.3.1 State design and construction must comply with the codes and standards, along with their published errata and other requirements listed in this Chapter.
- 5.3.2 If there is any conflict between the codes, standards, and/or regulations listed herein, the more stringent requirement controls.

- 5.3.3** Designers and Agency reviewers should ensure they have the latest errata for indicated editions to International Codes, other codes and standards.
- 5.3.4** Codes editions in force at the time of first submittal govern throughout the project, unless:
- A. Otherwise permitted by OSE, or
 - B. Design is delayed for more than 6 months and OSE adopts editions that are more current in the interim. No project may use a code that is older than one previous adopted edition.
- 5.3.5** OSE has adopted the following codes:
- A. International Building Code (IBC), 2015 Edition
 - B. International Existing Building Code (IEBC), 2015 Edition
 - C. International Fire Code (IFC), 2015 Edition
 - D. International Energy Conservation Code (IECC), 2009 Edition
 - E. International Fuel Gas Code (IFGC), 2015 Edition
 - F. International Mechanical Code (IMC), 2015 Edition
 - G. International Plumbing Code (IPC), 2015 Edition, with the following insertions:
 1. Section 305.4.1, insert “18” and insert “18”
 2. Section 903.1, insert “8”
 - H. International Private Sewage Disposal Code (IPSDC), 2015 Edition
 - I. International Property Maintenance Code (IPMC), 2015 Edition
 - J. International Residential Code for One and Two Family Dwellings (IRC), 2015 Edition, with the following insertions:
 1. P2603.5.1, insert “12” and insert “24”
 - K. International Wildland – Urban Interface Code (IUIWIC), 2015 Edition
Note: The IUIWIC does not supersede existing statutory requirements.
 - L. International Code Council Performance Code (ICPC), 2015 Edition, upon State Engineer’s approval
 - M. International Swimming Pool and Spa Code (ISPS), 2015 Edition
 - N. Standard for Bleachers, Folding and Telescopic Seating, and Grandstands, ICC 300-2012 Edition
 - O. National Electrical Code (NEC) [NFPA-70], 2014 Edition
 - P. National Electrical Safety Code, IEEE-C2-2012 Edition
 - Q. Latest edition of the American National Standards Institute, Inc. (ANSI) document A117.1, Accessible and Useable Buildings and Facilities. Note that this standard is the standard adopted by the South Carolina Accessibility Act but this requirement does not relieve the Agency or the design professional from the Federal Statutory requirements that design and construction comply with the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities. See <http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards>.
 - R. State Fire Marshal rules, regulations, and policies. See <http://www.scfiremarshal.llronline.com>.
 - S. South Carolina Elevator, Code, & Regulations. The SC Elevator Code references the American Society of Mechanical Engineers Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks, and supplements thereto, ASME A17.1. See <http://www.llr.sc.gov/elevators/>.
 - T. State of SC Telephone Equipment Room and Communications/Data Systems Policies as formulated by the Division of State Information Technology (DSIT).
 - U. State of SC Building Standards in Floodplain Areas.
 - V. The South Carolina Modular Buildings Construction Act.

5.4 FLOOD HAZARD AREA DEVELOPMENT

5.4.1 General Requirements

The "State of South Carolina Building Standards in Floodplain Areas" requires compliance with the criteria in Title 44, Code of Federal Regulations, Parts 60.3 and 60.5. See <https://www.gpo.gov/fdsys/pkg/CFR-2011-title44-vol1/pdf/CFR-2011-title44-vol1-sec60-3.pdf>. Copies of these Parts are available from the State Coordinator’s Office for the National Flood Insurance Program (NFIP).

5.4.2 Applicable Definition

FLOOD HAZARD AREAS are those areas identified by the Federal Emergency Management Agency (FEMA) on Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) that are subject to inundation by a 100- year flood. (Any Zone A or Zone V is a flood hazard area).

5.4.3 Permitting

- A. Where a project provides for new construction or improvement to an existing structure in a flood hazard area, the Agency must submit to the OSE Project Manager the Permit to Develop in a Flood Hazard Area (SE-510). For project within the Agency's Construction Contract Award Certification, submit the form directly to the State Engineer.
- B. The Agency should submit its application at the earliest opportunity, preferably at the time of schematic document submittal.
- C. The Agency must obtain this permit prior to starting construction.
- D. If the Agency intends to construct a non-residential structure with the first floor below the base flood elevation, the Agency must design the structure as a flood-proof structure and submit a Flood proofing Certificate, (FEMA Form 81-65), to OSE with the Construction Documents Submittal.
- E. For Historic Structures that are listed, eligible to be considered for listing or a contributing property to a listing in the National Register of Historic Places, a modified Permit may be issued. The Agency must submit documentation from the State Historic Preservation Office (SHPO) to verify the status of the building and provide details to what extent the building will be flood proofed without compromising the historical listing.

5.4.4 Permit Requirements

- A. The Agency, with the assistance of the A/E, must provide all information required on the SE-510 or designate it as not applicable.
- B. The Agency must include all required forms and certifications with the submittal to OSE.
- C. The Agency must submit the following certifications when required for structures constructed in a flood hazard area:
 1. No-Rise Certification required for development in a regulatory floodway: A registered professional engineer must furnish the certification and supporting technical data.
 2. Elevation Certification (FEMA Form 81-31) required for structures in an A-zone or V-zone: A registered land surveyor must furnish this certification. Submit this form to OSE as soon as the lowest floor is completed.
 3. Flood proofing Certificate (FEMA Form 81-65) for non-residential flood proofed structures in an A-zone: A registered professional engineer or architect must furnish this certification to OSE with the SE-510, Permit to Develop in a Flood Hazard Area.
 4. V-Zone Certification required for structures in a V-zone: A registered professional engineer or architect must furnish this certification, using the SC Department of Natural Resources form. Submit this certification to OSE with the SE-510.
- D. The Agency and A/E may find these forms through the OSE website.

5.4.5 Permit Variance

- A. Only the Floodplain Variance Board, at the request of OSE, may grant a variance permit to the Flood Hazard Area development requirements.
- B. If the Agency wants to pursue a variance, it must send a written request to the State Engineer that contains the following information:
 1. The particular floodplain management standard which prevents the proposed construction or improvement;
 2. The characteristics of the property or proposed structure which prevents compliance with the flood management standards;
 3. The minimum reduction of standards which would be necessary to permit the proposed construction or improvement;
 4. The particular hardship which would result if all standards were applied;
 5. Any additional information requested by the State Engineer.

5.4.6 Flood Maps

- A. The Agency and A/E may purchase Flood Maps from FEMA at:
- | | |
|--|----------------------------|
| FEMA Map Service Center | Telephone: (800) 358-9616 |
| PO Box 1038 | Fax Number: (800) 358-9620 |
| Jessup, MD 20794-1038 | |
| Or http://msc.fema.gov/portal | |
- B. The Agency and A/E may review Flood Maps at the following locations:
- State Coordinator's Office for the NFIP
Rembert C. Dennis Building
1000 Assembly Street
Columbia, SC 29201 (803) 734-9103
- C. Flood maps for specific sites may be available for review at the local community planning, zoning or engineering office or at the local Natural Resources Conservation Service office.

5.4.7 Publications

The Agency and A/E may obtain all publications and forms at the following locations:

Federal Emergency Management Agency	State Coordinator's Office for the NFIP
PO Box 2012	SC Department of Natural Resources
Jessup, MD 20794-2012	1000 Assembly Street
Attn: Publications	Columbia, SC 29201
Phone: (800) 480-2520	Phone: (803) 734-9103 Fax: (803) 734-9106
http://msc.fema.gov/portal	

5.5 INFORMATION TECHNOLOGY REQUIREMENTS

- 5.5.1 The Agency must notify the Division of Technology Operations of all construction projects involving repair, modification, or installation of building communications systems, including telephone equipment rooms at the following address:

Department of Administration - Division of Technology Operations
4430 Broad River Road
Columbia, SC 29210
Phone: (803) 896-0001
Toll Free: (800) 922-1367
Email: servicedesk@admin.sc.gov

- 5.5.2 This notification should occur as early as possible in the project planning process to enhance coordination during design and construction and to minimize delays and rework.

5.6 EXISTING STRUCTURES - SPECIAL CONSIDERATIONS

5.6.1 Applicable Code

The International Existing Building Code (IEBC), 2015, applies to the repair, alteration, change of occupancy, addition, relocation of all buildings.

5.6.2 Hazardous Materials

- A. The Agency should test for hazardous materials in any building or part of a building that it plans to repair or alter.
- B. The Agency must comply with all State and Federal Regulations regarding testing for, abating, handling, and disposing of hazardous materials.
- C. Asbestos Building Inspection Requirements:
1. Prior to beginning a renovation or demolition operation at any facility, the facility owner and/or owner's representative shall ensure that an asbestos building inspection is performed to identify the presence of ACM.
 2. The asbestos building inspection shall include the facility or part of the facility affected by the renovation or demolition operation.
 3. To be acceptable, a building inspection shall have been performed no earlier than three years prior to the renovation or demolition, or, if more than three years have elapsed since the most recent inspection, the previous inspection shall be confirmed and verified by a person licensed as a building inspector.

5.6.3 Historic Building Modifications

- A. An historic building is a building listed on National Register of Historic Places. South Carolina law encourages state agencies and institutions to preserve National Register-listed properties they own or lease by establishing a consultation process with the State Historic Preservation Office (SHPO). The process is designed to incorporate historic preservation concerns with the needs of state projects. Agencies are encouraged to consult with SHPO on properties that are eligible for listing on the National Register.
- B. The Agency and A/E should prepare a plan of action for a project on an historic building using one or more of the four distinct standards of treatment of historic properties—Preservation, Rehabilitation, Restoration or Reconstruction.
- C. The Agency and A/E should use The Secretary of the Interior’s Standards for the Treatment of Historic Properties in formulating the plan of action. See <https://www.nps.gov/tps/standards.htm>.
- D. With the Agency’s and A/E’s input, OSE, in conjunction with SHPO and other interested state agencies, will determine the requirements for the renovation of historic buildings.
- E. The Agency may request a meeting with OSE for this purpose prior to or concurrently with the submittal of the Schematic Design phase documents.

5.6.4 Seismic Requirements

- A. When the Agency plans alterations to a building, the Agency must consult with OSE to determine if the IEBC requires a preliminary seismic evaluation. The Agency should obtain this determination before it concludes the fee negotiations with the selected A/E.
- B. When required by OSE, a structural engineer must perform the preliminary seismic evaluation of the existing building or structure(s) and prepare a report. A preliminary seismic evaluation is a Tier 1 evaluation in accordance with ASCE/SEI 41-13 Seismic Evaluation and Retrofit of Existing Buildings (as referenced in the ICC).
- C. The preliminary evaluation must include the complete examination of all available documents pertaining to the design and construction of the building and an "on-site" examination of the structural system(s) to verify the building was constructed in accordance with the documents.
- D. The structural engineer must base the Tier 1 evaluation on the following minimum requirements:
 1. Except as set forth in (b) below, a Life Safety (LS) level of performance.
 2. If the facility is an “Essential Facility,” an Immediate Occupancy (IO) level of performance (Category IV, Table 1604.5 of the IBC provides a listing of “Essential Facilities”).
 3. When soil properties are unknown as to site class, the engineer must use Site Class D unless the engineer determines that Site Class E or F is likely. See IBC Chapter 16.
- E. After performing a seismic evaluation, the structural engineer must prepare a final report that includes the following:
 1. The scope of the investigation
 2. The site and building data including a general building description, structural system description (framing, lateral-force-resisting-system), floor & roof diaphragm construction, and basement and foundations systems
 3. Nonstructural systems description (all nonstructural elements affecting seismic performance)
 4. Building Construction Type
 5. Performance Level
 6. Level of Seismicity
 7. Soil Type
 8. List of Assumptions: (material properties and site soil conditions)
 9. Findings: (a prioritized list of deficiencies)
- F. The Agency must submit a copy of the preliminary seismic evaluation report to OSE at the Schematic Design phase. OSE, in consultation with the Agency, will determine the extent to which seismic retrofitting shall be included in the renovation project.

5.6.5 Accessibility by the Physically Disabled

- A. If in the opinion of the A/E, the building cannot provide accessibility to the physically disabled due to technical unfeasibility, the A/E must provide, during Schematic Design submittal:
 1. A prioritized list of deficiencies
 2. The reasons supporting a finding of technical unfeasibility.
 3. Design alternatives

- B. After reviewing the Schematic Design, OSE may consider “technical infeasibility” as an acceptable rationale for less than full compliance.

5.7 MODULAR BUILDINGS

- 5.7.1 Modular buildings are buildings of closed construction, other than mobile or manufactured homes, constructed off-site in accordance with applicable codes, and transported to the point of use for installation or erection.
- 5.7.2 Installation of modular buildings is construction work that must meet the same requirements as new construction. The codes cited in paragraph 5.3 of this manual are applicable.
- 5.7.3 The Agency and A/E should give specific attention to design of foundations (for seismic and wind loading).
- 5.7.4 The Agency must comply with Chapter 10 of this manual when moving state-owned modular buildings.

5.8 PROHIBITED BUILDING MATERIALS

5.8.1 Hazardous Materials:

The Agency may not use hazardous materials on state projects without prior approval from OSE, even if the law allows such use.

5.8.2 Impact Resistant Gypsum Wallboard:

Impact resistant gypsum wallboard may not be used in State buildings unless prior approval is obtained from OSE. If OSE approves high impact resistant gypsum wallboard, the Agency must indicate its use in an appropriate location readily visible and approved by the Fire Authority having Jurisdiction.

5.9 DESIGN RELATED CONSTRUCTION COORDINATION, PERMITS AND APPROVALS

- 5.9.1 The Agency is responsible for obtaining all design and construction related permits and approvals from other authorities having jurisdiction over the project.
- 5.9.2 State law requires the Agency to comply with local zoning ordinances as they affect the use and appearance of buildings.
- 5.9.3 The Agency will need to contact other authorities, including local and state authorities, to obtain permit requirements. Appendix H provides a listing of design-related permits the Agency may be required to obtain.
- 5.9.4 The Agency must be sure and have the A/E incorporate the requirements of all authorities having jurisdiction into the construction documents.
- 5.9.5 The Agency must either provide OSE with copies of all design related permits and approvals or with certification that the Agency has obtained them prior to applying for a building permit.

5.10 ENERGY CONSERVATION AND SUSTAINABLE CONSTRUCTION

5.10.1 All projects meeting the definition of a major facility project must be designed, constructed and certified to achieve at least LEED Silver certification from the US Green Building Council or at least two globes certification using the Green Building Initiative’s Green Globes rating system.

5.10.2 Major Facilities Projects are:

- A. State-funded projects for new construction in which the building to be constructed is larger than 10,000 gross square feet.
- B. State-funded projects for renovation of a facility in which the renovation will cost more than 50% of the replacement value of the facility or the renovation involves a change in occupancy.
- C. State-funded projects for commercial interior tenant fit-out where the leasable area to be fitted out is greater than 7,500 square feet.

5.10.3 Exemptions

Major facilities projects do not include the following:

- A. Any building that does not have conditioned space as defined by ASHRAE’s Standard 90.1.
- B. Any public school building (grades K – 12) as defined in SC Code § 59-1-50.
- C. Any correctional facility constructed for the Department of Corrections, Department of Mental Health, or Department of Juvenile Justice.
- D. Any building funded by the Department of Health and Environmental Control with the primary purpose of storing archived documents.
- E. Any building funded the State Ports Authority, the Coordinating Council for Economic Development, or the State Infrastructure Bank.

5.10.4 Special Considerations for Renovation and Tenant Fit-out Projects

- A. For renovation and commercial interior tenant fit-out projects meeting the definition of major facilities project, the Agency must analyze the project using a life cycle cost analysis of the projected capitol and operational cost over 30 years.
- B. The analysis must compare the costs and benefits of designing, constructing, maintaining, and operating the facility at (1) the LEED Silver standard or two globes standard, or better, with certification; (2) normal industry and regulatory standards; or (3) some standard between (1) and (2) that causes the project to be designed and constructed in a manner that achieves the lowest thirty-year life cycle cost.
- C. The Agency must include the 30 year life cycle cost analysis with their Phase II PIP Application.

5.10.5 Energy Performance Requirements

- A. MAJOR FACILITY PROJECT DESIGNED TO ACHIEVE TWO GLOBES CERTIFICATION: The A/E must design the project to earn at least 20% of the available points for energy performance under Green Globe's rating system "C.1.1 Energy Consumption."
- B. MAJOR FACILITY PROJECT DESIGNED TO ACHIEVE LEED SILVER CERTIFICATION: The A/E must design the project to earn at least 40% of the available points for energy performance under UBGC's rating system "EA Credit 1: Optimize Energy Performance."

5.10.6 Waiver of Energy Performance Requirements

- A. The Agency may request a waiver of the Energy Performance requirements in Paragraph 5.10E from OSE.
- B. A waiver requires OSE's determination that meeting the energy performance requirements is not economically feasible.
- C. If the Agency desires a waiver, the Agency must submit to OSE documentation showing that the incremental cost of achieving the energy performance requirements cannot be amortized over a period of 20 years.

5.10.7 Reporting Requirements

The Agency must make the following reports to OSE and the Energy Office:

- A. Upon final completion of a project: Submit to the Energy Office a description of all potential environmental benefits, including, but not limited to, water resources savings and reduction of water waste. The Agency may obtain this information from the facility designer.
- B. Upon certification of a facility: Submit to OSE the level of LEED or Green Globe certification achieved for facility.
- C. Annually Submit to the Energy Office:
 - 1. A report of actual savings in energy cost for all major facilities designed and constructed to the standards of the Energy Conservation and Sustainable Construction Act.
 - 2. Any conflicts or barriers that hinder the effectiveness of the Energy Conservation and Sustainable Construction Act.
- D. In the 5TH, 10TH, and 15TH year following certification of a facility: Submit to the Energy Office a report on the ability of the facility to continue to operate at the standard to which it was originally certified.

5.11 GREEN PURCHASING INITIATIVE

5.11.1 South Carolina has adopted a Policy encouraging Green Purchasing. This Part includes a statement of that policy and standards in the policy specific to construction.

5.11.2 The entire policy is available at <https://procurement.sc.gov/agency/green-purchasing>.

5.11.3 Agencies should consider this policy and discuss it with their Architect-Engineer for purposes of incorporating sustainable construction practices in all of their projects.

5.11.4 Statement of Policy

- A. South Carolina state government seeks to further reduce the environmental and human health impacts of its operations by integrating environmental considerations into its procurement process.
- B. South Carolina state government is committed to environmentally preferred purchasing in recognition of the need to more efficiently use natural resources, reduce waste, save money, sustain markets for materials collected in recycling programs and protect South Carolina's environment, economy and the quality of life of all its citizens.
- C. Therefore it is the policy of the state of South Carolina to endeavor to:
 - 1. Improve or implement green purchasing practices that reduce waste and result in the purchase of fewer products, when practicable and cost effective, without reducing the safety or quality of the products.

2. Make purchasing decisions with the understanding and consideration of the environmental impact and life cycle cost of a product or service during its manufacture, transport, use and end-of-life management.
 3. Identify and purchase products and services that prevent pollution, eliminate or reduce toxins, conserve energy and water, contain recycled-content material and minimize environmental impacts.
 4. Purchase from South Carolina businesses to minimize transportation costs and emissions, when it can be done with adequate competition and without compromise of performance or quality of products or services.
- D.** This Policy applies to all South Carolina state agencies and publicly funded colleges and universities and others defined as governmental bodies per SC Code Section 11-35-310(18),.
1. Vendors, contractors and grantees will comply with applicable sections of this policy for products and services that are provided to the state of South Carolina.
 2. All purchases under this policy are subject to local, state or federal requirements as applicable.
 3. Nothing in this policy should be construed as requiring a state agency or publicly funded college or university to procure products that do not perform according to their intended use or reduce safety, quality, or effectiveness.

5.11.5 Standards Specific to Construction

- A.** GREEN BUILDING PRACTICES - Consider a whole-systems approach to the design, construction, and operation of buildings and structures that help mitigate the environmental, economic, and social impacts of construction, demolition, and renovation. Green Building Practices such as those described in the LEED or Green Globe Rating Systems, recognize the relationship between natural and built environments and seeks to minimize the use of energy, water, and other natural resources and provide a healthy productive environment.
- B.** GREEN BUILDING CONSTRUCTION
1. Consider the use of on-site renewable energy such as solar, wind, geothermal and biomass to reduce impacts of fossil fuel use.
 2. Consider deconstruction and re-use of materials or purchase previously used or salvaged building materials to reduce waste and the need for virgin materials.
 3. Reduce the depletion of finite raw materials by using rapidly renewable materials such as bamboo, wool, cotton, linoleum and cork.
 4. Maximize the use of natural lighting in buildings to avoid the use of artificial lighting.
 5. Develop a plan for measurement of building water and energy consumption to provide ongoing accountability of actual usage.
 6. When renovating space, plan for flexibility and future change by using easily moved walls, outlets, etc.
 7. Consider short-term and long-term costs in specifying material and equipment. This includes an evaluation of the total costs expected during the life of the material and equipment.
- C.** GREEN LANDSCAPING
1. Provide for recycled-content materials for hardscape and landscape structures.
 2. Reduce water used for irrigation by using plants that are native to the area where they are planted and drought-tolerant plants that require minimal or no watering once established.
 3. Reduce water pollution and heat-island effect by reducing the amount of impervious surfaces in the landscape. Permeable substitutes such as pervious concrete or pavers are preferred for walkways, patios, driveways and low-volume traffic areas.
 4. Reduce light pollution by only lighting areas to the level required for safety and comfort.

5.12 REQUIRED INSPECTION SERVICES

5.12.1 The Agency must provide for the construction inspection services required by Chapter 1 of each International Code Council Series of Codes adopted in 5.3 and special inspection services required in Chapter 17 of the IBC.

5.12.2 A listing of Inspection and Testing firms on statewide term contract is located at https://procurement.sc.gov/files/Copy%20of%20Inspections_Testing_Firms_050516%20updated%209.12.17.xls

5.13 NON-RESTRICTIVE SPECIFICATIONS

5.13.1 State Procurement Law requires nonrestrictive specifications.

- A.** Do not list one product/manufacture and “or equal.”

- B. Determine the essential features of the product used as the basis of design and, unless there is only a single source (sole source) for products meeting the essential features of the basis of design, list multiple products and their manufacturers that meet these features.
- C. Ensure all listed products/manufacturers (and appropriate model numbers) meet all the essential features. A product should not be listed contingent on a subsequent determination by the A/E that it meets the essential features of the basis of design.
- D. Alternatively, identify the essential features and provide that any product/manufacture who meets the essential features can be approved utilizing substitution rules set forth in the procurement.

5.13.2 If the agency wishes to pursue a sole source procurement, see Chapter 8 of this manual.

5.14 DOCUMENT SUBMITTALS TO OSE

- 5.14.1 Agencies or their architects or engineers (A/E) must submit Schematic Design and Construction Documents to OSE for their review and approval in accordance with the procedures of this chapter. The term "A/E" in this chapter means the individual or firm preparing the Schematic Design, Design Development, and Construction Documents.
- 5.14.2 OSE will not review drawings and documents that are incomplete, ambiguous, or difficult to read. OSE will notify the A/E and the Agency of such condition and ask for a revised submission.
- 5.14.3 OSE's statutory review period does not start to run until it receives a complete, unambiguous, and readable set of drawings and documents.

5.15 PROJECT NAME AND NUMBER

- 5.15.1 The Agency and the A/E must place the project name and number on all project documents and correspondence.
- 5.15.2 If the project is a PIP, the project name and number is that shown on the Form A-1.
- 5.15.3 If the project is a Non-PIP, the name is that assigned by the Agency and the project number is that assigned by OSE.
- 5.15.4 For meanings of Project numbers assigned to PIPs and Non-PIPs see Chapter 1 of this manual.

5.16 DRAWINGS

Drawings submitted to OSE for review shall be submitted in the following formats:

- 5.16.1 Printed and delivered as follows:
 - A. A final printed font size of 1/8", providing graphic scales on plans, elevations and sections (increase font size as needed to assure legibility at reduced sized printing)
 - B. A maximum overall paper size of 30" x 42"
 - C. Drawings and Project Manuals must be bound;
 - D. A single bound set of drawings must not exceed 25 pounds
- 5.16.2 Delivered in PDF format.

5.17 PROJECT MANUAL

- 5.17.1 The Guide for Organizing and Completing the Project Manual - Design-Bid-Build found in Appendix B describes the requirements for organizing the OSE-mandated front-end documents for the typical design-bid-build construction project.
- 5.17.2 The project manual must include the following in the order shown:
 - A. Table of Contents
 - B. SE-310 – Invitation for Construction Services (Page 1 ONLY)
 - C. AIA A701-1997 Instructions to Bidders- South Carolina Division of Procurement Services, Office of State Engineer Version (A701 1997.SCOSE)
 - D. Bid Bond – AIA Document A310 (or reference to it)
 - E. Bid Form (SE-330, Lump Sum Bid Form or SE-332, Unit Price Bid Form)
 - F. Reference to AIA Document A101-2007 Standard Form of Agreement between Owner and Contractor - South Carolina Division of Procurement Services, Office of State Engineer Version (A101 2007.SCOSE)
 - G. AIA Document A201-2007 General Conditions of the Contract for Construction- South Carolina Division of Procurement Services, Office of State Engineer Version (A201 2007.SCOSE)

- H. SE-355 – Performance Bond
- I. SE-357 – Labor and Material Payment Bond
- J. SE-380 – Change Order to Construction Contract
- K. Technical Specifications

5.18 SPECIAL BIDDING REQUIREMENTS

5.18.1 Bid Alternates

- A. The use of Bid Alternates in bidding can be problematic and should be avoided if possible. The base bids are to meet the Agency’s needs. Alternates are used only to enhance the base bid.
- B. Alternates may not exceed three (3) in number.
- C. An Agency should not include any Alternate that the Agency has no reasonable chance of obtaining within the approved construction budget.
- D. The construction documents must clearly reflect the base bid and all alternates.
- E. The Agency may accept Alternates in any order or combination and must determine the low Bidder based on the sum of the Base Bid and Alternates accepted. An Agency may not subsequently add to a contract by change order an alternate that the Agency did not accept at the time of award, unless the contractor would have been low bidder had the alternate been included in the award.

5.18.2 Subcontractor Listing Requirements

- A. On page BF-2 of the Bid Form the Agency must list by specialty and contractor license designation (per SCLLR), certain subcontractors expected to perform work for the prime contractor.
- B. When bidding this work, the contractor is required to list by name the subcontractor(s) who will perform this work.
- C. The Procurement Code sets forth the following:
 - 1. The Agency, in consultation with the project architect/engineer, must identify by specialty the subcontractors:
 - a. Who are expected to perform work for the prime contractor on the project
 - b. Whose subcontracts are expected to exceed three percent (3%) of the prime contractor’s total base bid.
 - 2. The Agency, in consultation with the project architect/engineer, may identify by specialty a subcontractor expected to perform work for the prime contractor which is vital to the project.
 - 3. The Agency is to make its identification of subcontractors by specialty in the invitation for bids. On page BF-2 of the Bid Form there is a column provided for this (first column on the left). The second column is to list the licensing designation required for this specialty.
 - 4. The Agency’s determination of which subcontractors to list in the invitation for bids is not protestable.
 - 5. A bidder’s listing of subcontractors in response to the invitation for bids is protestable.
- D. If the prime contractor is expected to self-perform an item of work rather than subcontract that item, do not list that specialty on the bid form. For example, if the agency is bidding out an air conditioning project and under the Contractor’s Licensing Act only a mechanical contractor with an air conditioning specialty (“AC” sub-classification) can bid the work as a sole prime contractor, do not include air conditioning in the list of specialty subcontractors.
- E. The listing of the specialty subcontractor(s) should be clear enough that reasonable potential bidders understand what you are asking for. Keep in mind that the prime contractor must use the listed subcontractor for the listed specialty. If the prime bidders do not have a clear understanding of what work the listed subcontractor is intended to perform, he may have a nasty surprise when it comes to performance.

5.19 DESIGN SUBMITTAL REQUIREMENTS

5.19.1 The A/E with Agency’s approval must submit the following to OSE for review:

- A. Schematic Design documents and Estimate of Construction Cost, transmitted with the SE-271, Design Document Transmittal Form
- B. Construction Documents and Final Estimate of Construction Cost, transmitted with the SE-271
- C. Bid Documents transmitted with the SE-271

- 5.19.2** The Agency or its A/E may request additional reviews; however, any such additional reviews shall not count against OSE statutory review time.
- 5.19.3** All submittals may not be required on all projects. The A/E shall contact the OSE Project Manager for number of copies and necessary submittals.

5.20 OSE REVIEW AND APPROVAL PROCESS

- 5.20.1** OSE must review design and construction documents for projects exceeding the Agency's construction contract certification. OSE can provide technical assistance to agencies in reviewing design and construction documents within the Agency's certification.
- 5.20.2** OSE's review of design and construction documents for general compliance with codes does not relieve the Agency or the A/E of responsibility for knowledge of and compliance with all codes and regulations of other governing authorities.
- 5.20.3** OSE may revoke any approval issued under the provisions of this manual where OSE based its approval on any false statement or misrepresentation of fact in correspondence, drawings, specifications, or data.
- 5.20.4** If there is a conflict between the requirements of any code, regulation, or standard regarding safety, health, energy-use compliance, or environmental compliance, the Agency or the A/E should request an interpretation from the OSE Project Manager.
- 5.20.5** For scheduling purposes, the Agency and the A/E should allocate a total of 45 days for reviews of "properly completed" submittals. When the A/E provides a properly completed submittal, the review time will commence from the date of receipt of the submittal by the OSE Project Manager until the date the review is completed.
- 5.20.6** OSE will provide written review comments to the Agency and the A/E upon completion of each stage of document review.
- 5.20.7** If the Agency allows, the A/E may continue to work on the project, at its own risk, during the OSE review periods. This does not relieve the A/E from complying with all OSE comments made during the review periods.

5.21 SCHEMATIC DESIGN DOCUMENTS

- 5.21.1** To assist OSE in understanding the schematic documents, the Schematic Design Document submittal to OSE must include a copy of the programming statement.
- 5.21.2** To be "Properly Completed" the Schematic Design Documents submittal must meet the following minimum level of project information and project definition:
- A.** Complete Appendix H, Code Tables 3, 4, and 5 to the extent information is known and applicable.
 - B.** Site Plan showing the following:
 1. Building
 2. Property lines
 3. Easements
 4. Encroachments
 5. Setbacks
 6. Streets
 7. Parking
 8. Existing contours
 9. Adjacent structures and distance to adjacent structures
 10. Utilities;
 11. Fire apparatus access
 12. Accessibility
 13. North Arrow
 14. Other items defining the site (hazards, wetland, fire district, environmental issues, etc.)
 - C.** Drawings showing the following:
 1. Basic Code Review and list of applicable codes and standards
 2. Individual Spaces with names
 3. Life safety plans with wall, floor, and roof rating delineated and complete means of egress delineated with exit capacities. Identify doors with card access and other security measures.

4. Elevations sufficient to describe the building
 5. Facilities for the physically disabled incorporated within the building
 6. Shaft locations
 7. Fire extinguisher locations
- D. Unless otherwise agreed to by OSE, the Schematic Design Document review shall be a table top review with the OSE Project Manager, OSE discipline reviewers, Agency Project Manager, Architect, and Architect's civil, structural, mechanical, fire protection, and electrical engineering consultants present.

5.22 CONSTRUCTION DOCUMENTS

The following project information is required:

5.22.1 Drawings completed, coordinated, and corrected shall have as a minimum; items indicated in the Schematic Design Documents review and additional items that may include:

- A. Cover/Index:
 1. Abbreviations
 2. Symbols
 3. Legends
 4. Notations
 5. Location Map
 6. Signed and dated certifications contained in Appendix H.
- B. Project Code Criteria:
 1. Listing of all Codes applicable to project.
 2. Properly completed Code Tables 1 thru 12.
 3. UL Design Numbers for Rated Systems
 4. All fire and/or smoke-rated elements of the project (such as floors, ceilings, roofs, partitions, barriers and walls) are to be indicated on all disciplines
- C. Civil/Site/Landscape
 1. Building & Structures: existing and proposed
 2. Pedestrian & Vehicular accesses: existing and proposed including:
 - a. Fire Apparatus access
 - b. Access for disabled
 3. Parking
 4. Existing and new utilities
 5. Landscaping/topography – hard & soft: existing and proposed
- D. Architectural Drawings:
 1. Plans with north arrow (life-safety items are to be submitted as separate plans, unless they are clearly shown on a single floor plan):
 - a. Roofs
 - b. Floors
 - c. Accessible routes clearly defined with turning radius and locations and dimensions of accessible fixtures as required by ANSI
 - d. Layouts of storage shelving, casework, laboratory equipment, or other specialties
 - e. Hazard Control areas
 - f. Shafts and chases with ratings
 2. Life-safety plans including the following:
 - a. Rated Walls with symbols
 - b. Rated floors with rating
 - c. Rated Components
 - d. Details of Rated Assemblies
 - e. Exit Signs

- f. Complete means of egress, including Exit Travel Distances and Common Path of Egress Travel Distances
 - g. Exit capacities
 - h. Identify doors with card access and other security measures
 - i. Fire extinguisher locations
 - 3. Elevations – Exterior and Interior
 - 4. Sections & Details of construction including wall, shaft, and building sections
 - 5. Openings, Finish & Other Schedules
 - E. Structural Drawings
 - F. Fire Protection Drawings
 - G. Plumbing
 - H. Mechanical
 - I. Electrical
 - J. Other drawings that may be required to fully identify the project including, if not shown elsewhere in the construction documents, drawings showing:
 - 1. Approximate size of special equipment (i.e. compressors, generators, transformers, electronic equipment racks, consoles, panels, distributing frames, hoists, and cranes)
 - 2. Distance to adjacent buildings
 - 3. Unusual Features
- 5.22.2** Project Manual completed, corrected, and coordinated to include the following:
- A. Table of Contents
 - B. Front-end documents:
 - 1. SE-310, page 1, ready for signature by the OSE Project Manager
 - 2. Items identified in section 5.17 of this chapter.
 - C. Soils Report, Hazardous Materials Reports and other informational data pertinent to the project
 - D. Specifications:
 - 1. Technical Specifications
 - 2. The documents shall include the Fire Sprinkler System Specification Sheet, as published by the State Fire Marshal. The Fire Sprinkler System Specification Sheet shall be prepared, sealed, signed and dated by the projects fire protection engineer who shall be a South Carolina licensed professional engineer.
 - 3. Statement of Special Inspections
- 5.22.3** Other Documents:
- A. Additional narrative, schedule, calculations, drawings and information required to demonstrate to OSE and the Agency a thorough understanding of the project and compliance with codes.
 - B. Documents showing design compliance with the International Energy Conservation Code (IECC- 2009), for commercial buildings or portions thereof (not otherwise exempted).
 - C. Page 2 of the SE-310, submitted separately, signed and dated by the Agency to include the following:
 - 1. Construction Budget for this Contract;
 - 2. Final Estimate of Construction Cost, including all Alternates, with Agency approval;
(NOTE: This Estimate must be the same or less than the Construction Budget. OSE will not advertise projects that are estimated to exceed the Construction Budget.)
 - 3. Status of all required permits, zoning appeals, BAR approvals, etc; and
 - 4. Copies of all permits and approvals are to be submitted with this page.

5.23 BIDDING DOCUMENTS

- 5.23.1** A copy of the final Bidding Documents as printed and issued to prospective bidders, which incorporate the approved resolution of all previous review comments shall be submitted to OSE with design professionals' seals and signatures.
- 5.23.2** The Bidding Documents are identified in Appendix B.