

CHAPTER 5

DESIGN/CONSTRUCTION DOCUMENT & CONSTRUCTION STANDARDS

SUB-CHAPTER 5.2

DESIGN AND CONSTRUCTION DOCUMENT SUBMITTALS TO OSE

5.2.1 RELATED STATUTORY AUTHORITY *(See also authority listed in Part 5.1)*

- A. 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.
- B. 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.
- C. 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 the SFAA.
- D. 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.
- E. 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.
- F. 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.
- G. 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.

5.2.2 DOCUMENT SUBMITTALS TO OSE

- A. 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.
- B. 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.
- C. OSE's statutory review period does not start to run until it receives a complete, unambiguous, and readable set of drawings and documents.

5.2.3 PROJECT NAME AND NUMBER

- A. The Agency and the A/E must place the project name and number on all project documents and correspondence.
- B. If the project is a PIP, the project name and number is that shown on the Form A-1.
- C. If the project is a Non-PIP, the name is that assigned by the Agency and the project number is that assigned by OSE.
- D. For meanings of Project numbers assigned to PIPs and Non-PIPs see Chapter 1, Part 1.7.5.

5.2.4 DRAWINGS

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

- A. Printed and delivered as follows:
 - 1. 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);
 - 2. A maximum overall paper size of 30" x 42";
 - 3. Drawings and Project Manuals must be bound;
 - 4. A single bound set of drawings must not exceed 25 pounds; or
- B. Emailed in PDF format, if ten or fewer pages and approved by the OSE Project Manager.

5.2.5 PROJECT MANUAL

~~This section~~The Guide for Organizing and Completing the Project Manual - Design-Bid-Build found in Appendix A describes the requirements for organizing the OSE-mandated front-end documents for the typical design-bid-build construction project. The project manual must include the following in the order shown:

A. Table of Contents

- ~~1. Use OSE formatted Table of Contents found in Appendix A.2.~~
- ~~2. Follow the accompanying instructions to incorporate technical specifications.~~

B. SE-310 – Invitation for Construction Services

- ~~1. All sections of the SE 310, pages 1 & 2, must be completed with appropriate wording and boxes checked.~~
- ~~2. Submit a separate copy of pages 1 and 2 with the construction documents submittal. Page 1 must be submitted to OSE in Word format.~~
- ~~3. DO NOT include page 2 in the project manual.~~
- ~~4. The SE 310 included in the bidding documents must bear the OSE project manager's signature, unless the project is within the Agency's construction contract procurement certification.~~

~~C. Instructions to Bidders – AIA A701 – 1997 Edition~~

~~The Agency may elect to omit an original document from inclusion in the project manual provided a replacement page is inserted with information stating where prospective bidders may view the document (i.e., the A/E's or Agency's offices).~~

~~D. OSE Form 00201 – Standard Supplemental Instructions to Bidders~~

- ~~1. Fill in all information requested at the top of Page 1.~~
- ~~2. Section 9.4: obtain this information from the Agency and complete the document.~~
- ~~3. Section 9.9: If there are any special conditions to the project that will affect the bids, include this information in this section.~~

C. AIA A701-1997- South Carolina Division of Procurement Services, Office of State Engineer Version

~~E.~~D. Bid Bond – AIA Document A310

~~The Agency may elect to omit an original document from inclusion in the project manual provided a replacement page is inserted with information stating where prospective bidders may view the document (i.e., the A/E's or Agency's offices).~~

~~F.~~E. SE-330 – Lump Sum Bid Form

- ~~1. The Agency's name must be inserted in the blank on page BF 1 for the Owner's name.~~
- ~~2. The Project Name and Number must be inserted in the blanks on page BF 1 where indicated.~~
- ~~3. Insert scope of work for Base Bid in Section 6.1 and if there are Bid Alternates, insert the scope of work for each, as appropriate, in Section 6.2. List any requested Unit Prices in Section 6.3.~~
- ~~4. In Section 7, insert specialty trades for which bidders must provide the names of their Subcontractors. Also, in parentheses, include the designation for the contractor's license that is required for this work.~~
- ~~5. In Section 9, insert the Contract Time and Liquidated Damage amount.~~

~~G.~~F. AIA Document A101-2007 Standard Form of Agreement ~~Between~~between Owner and Contractor – ~~AIA A101 – 2007 Edition~~ South Carolina Division of Procurement Services, Office of State Engineer Version

~~A/E must insert OSE Form 00501 – Standard Modifications to AIA A101-2007 but may not include the filled-out A101 in the bidding documents unless originals of the A101 are used. The Agency may elect to omit the original document from inclusion in the project manual provided a replacement page is inserted with information stating where prospective bidders may view the document (i.e., the A/E's or Agency's offices).~~

~~G.~~F. OSE Form 00501 – Standard Modifications to AIA A101 – 2007

- ~~1. Fill in all information requested at the top of Page 1.~~
- ~~2. Section 2.12: Obtain the information requested in this section from the Agency and complete the document.~~
- ~~3. Section 2.14: Fill in all requested information in this section.~~

~~H.~~F. General Conditions of the Contract for Construction – AIA A201 – 2007 Edition

~~The Agency may elect to omit the original document from inclusion in the project manual, provided a replacement page is inserted with information stating where prospective bidders may view the document (i.e., the A/E's or Agency's offices).~~

~~I. OSE Form 00811 – Standard Supplementary Conditions~~

- ~~1. Fill in all information requested at the top of Page 1.~~
- ~~2. Section 3.24: Check this box if this is applicable to the project.~~
- ~~3. Section 3.133: Indicate what type of inspections, if any, are required on this project. After “Remarks”, write “All inspections provided by owner.” and any other needed information.~~
- ~~4. Sections 16.2 – 16.7: Fill in each of these sections, writing “NONE” if applicable.~~

~~G. AIA Document A201-2007 General Conditions of the Contract for Construction- South Carolina Division of Procurement Services, Office of State Engineer Version~~

~~K.H. SE-355 – Performance Bond~~

- ~~1. Fill in the Agency name and address and the project information~~
- ~~2. Fill in the A/E information where indicated.~~

~~L.I. SE-357 – Labor and Material Payment Bond~~

- ~~1. Fill in the Agency name and address and the project information~~
- ~~2. Fill in the A/E information where indicated.~~

~~M.J. Technical Specifications~~

- ~~1. Insert all technical specifications into the project manual.~~
- ~~2. Include Statement of Special Inspections in accordance with IBC Chapter 17 in the quality assurance section of project manual.~~

5.2.6 SPECIAL BIDDING REQUIREMENTS

A. Bid Alternates

1. The use of Bid Alternates in bidding can be problematic and should be avoided if possible.
2. While an Agency may use add alternates, Alternates may not exceed three (3) in number.
3. An Agency should not include any Alternate that the Agency has no reasonable chance of obtaining within the approved construction budget.
4. 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. However, 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.

B. Subcontractor Listing Requirements – SC Code Ann § 11-35-3020(b)(i)

1. On page BF-3 of the SE-330, Lump Sum Bid Form, the Agency must list by specialty, certain subcontractors expected to perform work for the prime contractor.
2. When bidding this work, the contractor is required to list by name the subcontractor(s) who will perform this work.
3. The Procurement Code sets forth the following:
 - a. The Agency, in consultation with the project architect/engineer, **must** identify by specialty the subcontractors:
 - (1) Who **are expected** to perform work for the prime contractor on the project; and
 - (2) Whose subcontracts are expected to exceed three percent (3%) of the prime contractor’s total base bid.
 - b. 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.
 - c. The Agency is to make its identification of subcontractors by specialty in the invitation for bids. On page BF-3 of the SE-330, Lump Sum Bid Form, there is a column provided for this (first column on the left).
 - d. The Agency’s **determination** of which subcontractors to list in the invitation for bids is **not protestable**.
 - e. A bidder’s listing of subcontractors in response to the invitation for bids is **protestable**.
4. 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

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specialty subcontractors.

5. 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.

5.2.7 DESIGN SUBMITTAL REQUIREMENTS

- A. The A/E with Agency's approval must submit the following to OSE for review:
 1. Schematic Design documents and Estimate of Construction Cost, transmitted with the SE-271, Design Document Transmittal Form.
 2. Construction Documents and Final Estimate of Construction Cost, transmitted with the SE-271, Design Document Transmittal Form.
 3. Bid Documents transmitted with the SE-271, Design Document Transmittal Form.
- B. The Agency or its A/E may request additional reviews; however, any such additional reviews shall not count against OSE statutory review time.
- C. All submittals may not be required on all projects. The A/E is to contact the OSE project manager for number of copies and necessary submittals.

5.2.8 OSE REVIEW AND APPROVAL PROCESS

- A. 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.
- B. 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.
- C. 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.
- D. 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.
- E. For scheduling purposes, the Agency and the A/E should allocate a total of 45 days for review 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.
- F. OSE will provide written review comments to the Agency and the A/E upon completion of each stage of document review.
- G. 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.

5.2.9 SCHEMATIC DESIGN DOCUMENTS

- A. To assist OSE in understanding the schematic documents, the Schematic Design Document submittal to OSE must include a copy of the programming statement.
- B. To be "Properly Completed" the Schematic Design Documents submittal must meet the following minimum level of project information and project definition:
 1. Complete Tables 5-3, 5-4 and 5-5 to the extent information is known and applicable.
 2. Site Plan showing the following:
 - a. Building;
 - b. Property lines;
 - c. Easements;
 - d. Encroachments;
 - e. Setbacks;
 - f. Streets;
 - g. Parking;

- h. Existing contours;
 - i. Adjacent structures and distance to adjacent structures;
 - j. Utilities;
 - k. Fire apparatus access
 - l. Accessibility
 - m. North Arrow; and
 - n. Other items defining the site (hazards, wetland, fire district, environmental issues, etc.).
3. Drawings showing the following:
- a. Basic Code Review and list of applicable codes and standards
 - b. Individual Spaces with names;
 - c. ~~Developed~~ Life safety plans with wall, floor, and roof rating delineated and complete means of egress delineated with exit capacities
 - d. Elevations sufficient to describe the building;
 - e. Facilities for the physically disabled incorporated within the building; and
 - f. Shaft locations.
4. 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.

5.2.10 CONSTRUCTION DOCUMENTS

The following project information is required:

- A. Drawings completed, coordinated, and corrected shall have as a minimum; items indicated in the Schematic Design Documents review and additional items that may include:
- 1. Cover/Index
 - a. Abbreviations
 - b. Symbols
 - c. Legends
 - d. Notations
 - e. Location Map
 - 2. Project Code Criteria
 - a. Listing of all Codes applicable to project
 - b. Project Code criteria as contained in Tables 5-1 through 5-12
 - c. UL Design Numbers for Rated Systems.
 - d. 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.
 - 3. Civil/Site/Landscape
 - a. Building & Structures: existing and proposed
 - b. Pedestrian & Vehicular accesses: existing and proposed including:
 - (1) Fire Apparatus access
 - (2) Access for disabled
 - c. Parking
 - d. Existing and new utilities
 - e. Landscaping/topography – hard & soft: existing and proposed
 - 4. Architectural Drawings:
 - a. Plans with north arrow (life-safety items are to be submitted as separate plans, unless they are clearly shown on a single floor plan):
 - (1) Roofs
 - (2) Floors

- (3) Accessible routes clearly defined with turning radius and locations and dimensions of accessible fixtures as required by ANSI.
 - (4) Layouts of storage shelving, casework, laboratory equipment, or other specialties
 - (5) Hazard Control areas
 - (6) Shafts and chases with ratings
 - b. Life-safety plans including the following:
 - (1) Rated Walls with symbols
 - (2) Rated floors with rating
 - (3) Rated Components
 - (4) Details of Rated Assemblies
 - (5) Egress and Exit Lighting
 - (6) Complete means of egress
 - (7) Exit capacities
 - c. Elevations
 - (1) Exterior elevations showing proposed floor-to-floor heights and finish floor elevations
 - (2) Equipment or facilities for the physically disabled
 - (3) Interior elevations of significant features
 - (4) Openings
 - d. Sections & Details of construction including wall, shaft, and building sections
 - e. Openings, Finish & Other Schedules
5. Structural Drawings: as required to illustrate specific building design including sections and schedules including but not limited to the following:
 - a. Foundations
 - b. Columns
 - c. Floor Framing
 - d. Roof Framing
 - e. Structural walls
6. Fire Protection Drawings
7. Plumbing
 - a. Water
 - b. Sewer
8. Mechanical
 - a. HVAC plans as necessary to assure function and compatibility with building fire protection system and fire-rated assemblies
 - b. Mechanical, boiler and other special equipment rooms with equipment layout
 - c. Details and/or sections of vertical risers
 - d. Schedules
 - e. Routing of systems
9. Electrical
 - a. Power
 - b. Lighting
 - c. Schedules
 - d. Fire alarm system components
 - e. Communications and information technology components and equipment rooms
 - f. Electrical risers, routing, panel wiring, grounding and other features

10. Other drawings that may be required to fully identify the project including, if not shown elsewhere in the construction documents, drawings showing:
 - a. Approximate size of special equipment (i.e. compressors, generators, transformers, electronic equipment racks, consoles, panels, distributing frames, hoists, and cranes)
 - b. Distance to adjacent buildings
 - c. Unusual Features
- B. Project Manual completed, corrected, and coordinated to include the following:
 1. Table of Contents
 2. Front-end documents
 - a. SE-310, page 1, ready for signature by the OSE Project Manager
 - b. Items identified in section 5.2.5 of this chapter.
 3. Soils Report, Hazardous Materials Reports and other informational data pertinent to the project
 4. Specifications
 - a. Technical Specifications
 - b. 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.
- C. Other Documents:
 1. Additional narrative, schedule, calculations, drawings and information required to demonstrate to OSE and Agency a thorough understanding of the project and compliance with codes.
 2. Documents showing design compliance with the International Energy Conservation Code (IECC- 2009), for commercial buildings or portions thereof (not otherwise exempted). May be achieved by the following methods:
 - a. Meeting mandatory and prescriptive requirements of sections 502 (Building Envelope), 503 (Mechanical Systems), 504 (Water Heating), and 505 (Power and Lighting), or by satisfying the corresponding provision(s) in ASHRAE 90.1-2007 (Chapters 5 through 10) and by providing supporting documents (worksheets, forms, calculations, etc.) for each chapter or section.
 - b. Alternatively, provided that all IECC mandatory provisions have been met, compliance may be demonstrated using section 506, “Total Building Performance”, where an approved simulation, using acceptable parameters, indicates that the proposed design energy cost does not exceed that of the standard design (see IECC definitions). The design professional must submit documentation in accordance with IECC - 506.5. The corresponding ASHRAE 90.1 provision is Chapter 11, “Energy Cost Budget Method”. The documentation requirements are listed in 11.1.5.

NOTE: OSE cautions the designer to seek concurrence with OSE prior to using, procuring, or otherwise investing in simulation software or services.
 3. Page 2 of the SE-310, submitted separately, signed and dated by the Agency to include the following:
 - a. Final Revised Estimate of Construction Cost with Agency approval.
 - b. Status of all required permits, zoning appeals, BAR approvals, etc. Copies of all permits and approvals are to be submitted with this page.

5.2.11 BIDDING DOCUMENTS

- A. A copy of the final Bidding Documents as printed and issued to prospective bidders, which incorporate the approved resolution of all previous review comments.
- B. The Bidding Documents are identified in Appendix A.