

OFFICE OF SCHOOL FACILITIES

INSPECTION PROGRAM MANUAL

(INSPECTOR APPLICATION FORMS
AND
INSPECTION PROGRAM GUIDELINES)

South Carolina Department of Education

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INTRODUCTION

The purpose of this manual is to provide guidance in the implementation of the SC Department of Education, Office of School Facilities (OSF) Approved Inspector Program and Special Inspector Program for South Carolina public schools, including qualifications and requirements for participation; procedures; forms and checklists; and applications for those seeking to contract for the inspection of public schools; and the “Memorandum of Understanding” required between OSF and an OSF (Chapter 1) Approved Inspector.

The reader should note that in addition to this manual it is critical for all those seeking OSF Approved Inspector status to review and understand the contents of the *South Carolina School Facilities Planning and Construction Guide*. It is the basic OSF regulation and contains information relevant to the inspection of schools. It can be found on the OSF web site (www.ed.sc.gov/agency/offices/sf) along with other documents relevant to the OSF Approved Inspector Program.

ABBREVIATIONS / DEFINITIONS

APPROVED INSPECTOR REGISTRY. A list maintained by OSF on the OSF internet site (<http://ed.sc.gov/agency/offices/sf>) identifying Chapter 1 and special inspectors meeting the requirements identified in Chapter 3 of this document.

APPROVED FABRICATOR. An established and qualified person, firm or corporation pursuant to Chapter 17 of the International Building Code (IBC) 2003.

APPROVED PLANS. Plans submitted to, reviewed and approved by the Office of School Facilities (OSF), South Carolina Department of Education.

ARCHITECT OF RECORD (AOR). The architect responsible for architectural design documents, licensed in the state of South Carolina, acting in behalf of the owner.

BCC The South Carolina Building Codes council, a division of the Department of Labor , Licensing and Regulation.

CERTIFICATE OF COMPLIANCE. A certificate stating that materials and products meet specified standards or that work was done in compliance with approved construction documents.

CERTIFICATE OF OCCUPANCY. The document that allows occupancy of a public school building, issued by OSF prior to a building or structure being used or occupied.

ENGINEER OF RECORD (EOR). The engineer responsible for engineering design documents, licensed in the state of South Carolina, acting on behalf of the owner.

IBC. International Building Code.

INSPECTION CERTIFICATE. An identification applied on a product by an approved agency containing the name of the manufacturer, the function and performance characteristics, and the name and identification of an approved agency that indicates that the product or material has been inspected and evaluated by an approved special inspector (see Section 1703.5 of the IBC and "Label," "Manufacturer's designation" and "Mark" as provided in this chapter).

LABEL. An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, the name and identification of an approved agency and indicates that the representative sample of the product or material has been tested and evaluated (see Chapter 17 of the current IBC and "Inspection certificate," "Manufacturer's designation" and "Mark" as addressed in this chapter).

MANUFACTURER'S DESIGNATION. Identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or

set of rules (see also "Inspection certificate," "Label" and "Mark" as provided in this chapter).

MARK. Identification applied on a product by the manufacturer indicating the name of the manufacturer and the function of a product or material (see also "Inspection certificate," "Label" and "Manufacturer's designation" as provided in this chapter).

OSF. The Office of School Facilities, South Carolina Department of Education. This Office has legal authority over all K–12 school construction in South Carolina.

OSF APPROVED INSPECTOR. A BCC registered Code Enforcement Officer meeting OSF requirements and having executed a Memorandum of Understanding with OSF; and identified on the OSF APPROVED INSPECTOR REGISTRY as qualified to be engaged in furnishing inspection services in public schools.

SPECIAL INSPECTION. Inspection as herein required of the materials, installation, fabrication, erection, or placement of components and connections requiring special expertise to ensure compliance with approved construction documents and referenced standards (see Section 1704 of the IBC).

SPECIAL INSPECTION, CONTINUOUS. The full-time observation of work requiring special inspection, by an approved special inspector, who is present in the area where the work is being performed.

SPECIAL INSPECTION, PERIODIC. The part-time or intermittent observation of work requiring special inspection, by an approved special inspector, who is present in the area where the work has been or is being performed and at the completion of the work.

SPECIAL INSPECTOR. An individual Meeting BCC requirements and holding BCC registration as a Special Inspector in accordance with BCC regulations.

SPRAYED FIRE-RESISTANT MATERIALS. Materials that are spray applied to provide fire-resistant protection of the substrates.

STOP WORK ORDER. An order issued by an OSF Approved Inspector requiring that construction work on a specific project(or part thereof) immediately cease due to an unresolved code, specification and/or design related issue. OSF should always be informed of any Stop Work Order prior to issuance if feasible or as soon as feasible in any case.

STRUCTURAL OBSERVATION. The visual observation of the structural system by a registered design professional for general conformance to the approved construction documents at significant construction stages and at completion of the structural system. Structural observation does not include or waive the responsibility for the inspection required by Section 109, 1704 or other sections of the IBC.

CHAPTER 1

OSF APPROVED INSPECTOR PROGRAM

BACKGROUND

On March 14, 2004, the OSF began enforcing a new program of public school construction inspections, as required in the *2004 South Carolina School Facilities Planning and Construction Guide*. Since that time, projects submitted for their initial code review are required to adhere to the following section of the Guide:

SECTION 903 INSPECTIONS REQUIRED BY CODE

903.1 Except for inspections required herein and provided by OSF, it will be the responsibility of the owner to contract for all code required inspection services. Inspections shall only be carried out by individuals specifically registered by LLR, the Building Codes Council, and/or OSF, to perform IBC Chapter 1 and/or Chapter 17 inspections. IBC Chapter 1 inspectors shall also be formally approved by OSF and must have on file with OSF a fully executed "Memorandum of Understanding" defining and agreeing to their responsibilities. The OSF approved Chapter 1 inspectors shall be responsible for approved construction document compliance. They shall advise the design professional and the contractor of any compliance deficiencies. All code interpretations and code enforcement requirements shall be determined by OSF. Copies of inspection reports shall be provided to the owner's representative, and the design professional, within five (5) business days of each inspection. An inspection log reflecting all inspection reports, including all deficiency corrections, shall also be maintained at the construction site. Reports shall be available to OSF on request.

OSF established the OSF Approved Inspector Program in 2005 to ensure that only qualified individuals were providing inspection services in public schools. However, in 2009, LLR, the Building Codes Council (BCC), revised their legislation and regulations to include the required registration of all code enforcement officials and inspectors, whether employed by a county, municipality, or privately employed. As a result, in June and in December 2009, OSF notified all current OSF Approved Inspectors that it would revise previously existing OSF Approved Inspector Program. These changes are detailed in this Manual.

REVISED APPROVED INSPECTOR PROGRAM

Effective immediately, OSF will begin to carry out the following revised Approved Inspector Program. This is essentially the same material emailed to all inspectors of record on Friday, December 18, 2009 and amended by e-mail on December 21st.

FOR OSF APPROVED (CHAPTER 1) INSPECTORS ONLY

1.) Any currently approved OSF Chapter 1 inspector whose OSF registration expires (or expired) between November 5, 2009 and March 31, 2010, will **NOT BE REQUIRED** to renew their registration with OSF until April 1, 2010. In effect, OSF is creating a grace period to allow all currently approved Chapter 1 inspectors to get qualified for and to obtain BCC registration as a BCC "Codes Enforcement Officer" (e.g.; a Chapter 1 inspector). However, OSF will receive applications for OSF Approved Inspector status from any currently BCC registered Codes Enforcement Officers effective upon OSF's publication of the new OSF Approved Inspector application.

Furthermore, if you are currently registered with OSF, so long as you have submitted your BCC registration to OSF on or before April 1, 2010, OSF will honor the original termination date of your current OSF Approved Inspector status. You need only to submit your BCC registration, no fee will be charged and your current term of approval will be allowed to expire on the original expiration date.

2.) Effective March 1, 2010, anyone seeking to inspect construction in South Carolina public schools **MUST** have BCC registration as a Code Enforcement Officer. If not already approved by OSF, they must also apply for and obtain OSF Approved Inspector status, to include execution of the OSF "Memorandum of Understanding" and their BCC registration certificate. The new/revised OSF Approved Inspector Program will utilize the same inspector classifications or categories defined by the already established BCC Codes Enforcement Officer registration program. An OSF card reflecting these categories will be issued to the OSF approved Inspector just as was done in the past.

3.) OSF has modified the existing OSF Inspection Program Manual, including the application and the Memorandum of Understanding to accommodate these changes.

4.) Any individual **NOT** now registered with OSF to carry out Chapter 1 inspections in public schools and seeking to obtain such approval will have to first obtain BCC registration as a Codes enforcement Officer and then submit an application to OSF for approval, including execution of the Memorandum of Understanding.

5.) It needs to be understood by all parties that the OSF Memorandum of Understanding is the legal document that allows the OSF Approved (Chapter 1) Inspector to act as an agent of OSF, thus allowing the inspector into the school, regardless of any other registrations. A current, originally signed document **MUST** be on file with OSF.

6.) The OSF Approved Inspector application fee (Chapter 1 **ONLY**) will be \$40.00.

FOR OSF APPROVED CHAPTER 17 INSPECTORS ONLY

- 1.) On December 2, 2009, The SC Building Codes Council (BCC) made a decision to postpone the implementation of the BCC Chapter 17 Special Inspectors registration program until July 1, 2011.
- 2.) BCC has also announced that it will not start accepting applications for registration as a special inspector until May, 2011. No specific date has been provided as of this date.
- 4.) Due to the BCC postponement, OSF will continue to honor any currently OSF approved Chapter 17 inspectors until their OSF term of approval expires. In addition, OSF MUST continue to receive new and renewal applications for, and register, Chapter 17 inspectors for public schools. OSF will certify and register Chapter 17 Special Inspectors through MARCH 31, 2011. Thereafter, any person not registered with OSF and seeking to inspect public schools will have to wait until BCC registration is available in May, 2011 (and required by July 1, 2011). This provides a "grace period between April 1, 2011 and July 1, 2011 to allow all inspectors to obtain BCC Special Inspector registration. After April 1, 2011, OSF will no longer certify or register Chapter 17 Special Inspectors in any form or fashion.
- 5.) OSF has modified the OSF Inspection Program Manual, including a NEW OSF (Chapter 17) Special Inspector application, separate from the OSF Approved (Chapter 1) Inspector application.
- 6.) The OSF Special Inspector application fee (Chapter 17 only) is \$40.

FOR COMBINED OSF APPROVED (CHAPTER 1) INSPECTOR AND OSF SPECIAL (Chapter 17) INSPECTOR

For those seeking BOTH approvals from OSF, BOTH of the new applications must be submitted, with a combined fee of \$75.

FOR CONSTRUCTION MANAGEMENT(CM) FIRMS AND THEIR PERSONNEL

OSF originally allowed CM's to inspect projects with their own personnel due to the acute lack of known inspection capability across the state. Since starting the OSF Inspection Program in 2005, the ranks of available and qualified personnel have grown to the point where OSF no longer feels it is necessary or appropriate for CM's to continue this practice. Therefor, EFFECTIVE IMMEDIATELY, all CM firms shall cease entering into any new contracts where they are providing inspection services. Of course, existing contracts should be honored and fulfilled, however extensions of any contracts will need to be approved by OSF.

Please address any questions or concerns to John Kent, Program Administrator, at:
jbkent@ed.sc.gov

It is important to note that “Chapter 1 inspections” refers to the inspection requirements set forth in the International Building Code, Section 109, AND any other inspections or verifications specified by OSF and defined in this manual and/or in the *SC School Facilities Planning and Construction Guide*.

“Special Inspections” are defined in Section 1702 of the IBC, wherein it is stated that “inspections as herein required of the materials, installation, fabrication, erection or placement of components and connections requiring special expertise to ensure compliance with approved construction documents and referenced standards.”

Critical inspections often overlooked include compliance with seismic force requirements, including those for suspended ceilings (ASCE 7.02): verification of fire alarm installations (National Fire Alarm Code Handbook, Section 4.5) and energy efficiency inspections and verifications. See Chapters 3 and 4 in this Manual for additional details.

OWNER/AGENT RESPONSIBILITIES

Note that OSF has also ruled that **THE OWNER OR HIS AGENT SHALL IDENTIFY IN THE CONSTRUCTION DOCUMENTS THE INSPECTIONS REQUIRED BY THE INTERNATIONAL BUILDING CODE (IBC). NO MORE THAN TWO WEEKS AFTER THE OPENING OF THE BIDS OR BEFORE THE CONSTRUCTION STARTS, (WHICHEVER COMES FIRST) THE IDENTITY OF THE INDIVIDUALS TO PROVIDE THE INSPECTIONS ALONG WITH MEANS OF CONTACTING THESE INDIVIDUALS (TELEPHONE NUMBERS) SHALL BE PROVIDED TO OSF AND A PRECONSTRUCTION INSPECTION COORDINATION MEETING SHALL BE HELD FOR THE PURPOSE OF REVIEWING PROEJCT INSPECTION REQUIREMENTS.**

LIMITATION OF LIABILITY FOR OSF APPROVED INSPECTORS

An inspector appointed or approved by OSF to carry out IBC Chapter 1 inspection responsibilities as an agent of the SC Department of Education is covered by the protections of the SC Tort Claims Act, S.C. Code Ann. § 15-78-10 et seq. The Tort Claims Act provides that the state is not liable for loss resulting from “regulatory inspection powers or functions, including failure to make an inspection, or making an inadequate or negligent inspection of any property, to determine whether the property complies with or violates any law, regulations, code or ordinance or contains a hazard to health or safety.” Because the OSF Approved Inspector is acting as an agent of the Department of Education, Office of School Facilities; and has executed the Memorandum of Understanding with OSF; and, assuming the inspectors conduct is within the scope of his or her official duties, the Tort Claims Act should act as a bar to liability.

TO CONTACT OSF

Additional details concerning the OSF Inspection Program are contained in the following chapters of this manual. Any questions or correspondence regarding the OSF Approved Inspector Program may be directed to:

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Inspection Program Administrator
Office of School Facilities
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Columbia, South Carolina 29201
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E-mail: jbkent@ed.sc.gov

CHAPTER 2

INSPECTOR QUALIFICATIONS: CHAPTER 1 AND 17

1. OSF CHAPTER 1 INSPECTOR QUALIFICATIONS

OSF Chapter 1 inspector approval applies to individuals, not firms. To qualify for approval to perform OSF Chapter 1 inspections in public schools, the individual shall be a licensed architect or engineer or, at a MINIMUM, shall meet the BCC qualifications set forth in Chapter 8 of the BCC regulations, Article 1, addressing Registration, Fees and Disciplinary Procedure. OSF will accept the BCC registration categories of Building Official, Commercial Inspector and Single Discipline Inspector as long as the individual applicant can also meet IBC requirements set forth in IBC Chapter 1, Appendix A, Employee Qualifications, Paragraph A101.3, Inspector and plan examiner, which states the following:

A101.3 Inspector and plan examiner. The building official shall appoint or hire such number of officers, inspectors, assistance and other employees as shall be authorized by the jurisdiction. A person shall not be appointed or hired as an inspector of construction or plan examiner who has not had at least 5 years' experience as a contractor, engineer, architect, or as a superintendent, foreman or competent mechanic in charge of construction. The inspector or plan examiner shall be certified through a recognized certification program for the appropriate trade.

For the purposes of Chapter 1 inspector approval, "certification," as referenced above, shall be designated through OSF, based upon the applicant's BCC registration, education, certifications, general construction experience and trade specific construction experience. In addition, The OSF Approved Inspector is also required to execute the OSF Memorandum of Understanding, which establishes the legal working relationship between OSF and the Approved Inspector.

2. IBC CHAPTER 17 SPECIAL INSPECTOR QUALIFICATIONS

Any individual performing the inspection and/or testing of work requiring special inspections in accordance with IBC, Chapter 17, shall be approved by the OSF (see Appendix A for the required forms to be submitted). Each application form shall be accompanied by a resume showing dates and descriptions of the applicant's experience and a copy of all required certifications and/or professional registrations. Certifications required are set forth below based on IBC Chapter 17. Certifications are not required for SC registered design professionals (architects or engineers).

Reinforced Concrete (RC); IBC 1704.4, 1805

- Current ICC Reinforced Concrete Special Inspector
- ACI Concrete Field Testing Technician - Grade 1 Certification

- South Carolina EIT with one year related experience
- OSF approved IBC Chapter 1 Inspector qualifications (IBC, A101.3), with experience related to the trade.

Prestressed Concrete; IBC Table 1704.4 Items 8 and 10.

Pretension tendons (PC1):

- Current ICC Reinforced Concrete Certification
- ACI Concrete Field Testing Technician Grade I Certification plus one year related experience
- South Carolina EIT with one year related experience.

Post-tension tendons (PC2):

- Current Post-Tensioning Institute (PTI) Certification
- South Carolina EIT with one year related experience.

Post-Tension Slabs-on-Ground (PTS); IBC Section 1805.8.2

- Current Post-Tensioning Institute (PTI) Certification
- South Carolina EIT with one year related experience.

Welding (SW); IBC Section 1704.3, Table 1704.3 (4&5), 1707.2

- Current AWS Certified Welding Inspector
- Current AWS Certified Welding Educator
- Current AWS Certified Welding Engineer
- Current AWS/AISC CSSI.

Nondestructive Testing of Welds (SN/); Section 1704.3, Table 1704.3 (5), 1707.2

- Current NDT Level II or III (MT, PT, UT or RT)
 - a. Level II Personnel shall be qualified in accordance with the American Society of Nondestructive Testing (ASNT) document SNT-TC-IA (current edition). Level II certification as determined by a Level III Examiner is required for each category.
 - b. Level III Examiner shall be ASNT-certified unless all level II personnel have a current ASNT/ACCP certification. Only then will in-house designation of Level III NDT personnel be permitted.

High-Strength Bolting (SS); IBC Section 1704.3, Table 1704.3 (1&2), 1707.2

- Current ICC Structural Steel & Welding certificate and one year of related experience
- Current AWS/AISC CSSI.

Steel Frame Inspection (SS); IBC Table 1704.3 (3&6)

- Current ICC Structural Steel & Welding Certificate plus one year of related experience
- Current AWS/AISC CSSI.

Masonry Construction (SM); IBC 1704.5

- Current ICC Structural Masonry certificate and one year related experience
- EIT with one year related experience
- OSF approved IBC Chapter 1 Inspector qualifications (IBC, A101.3) with experience related to the trade.

Wood Construction

- Current ICC Building Inspector
- Current ICC Commercial Building Inspector
- Current ICC Commercial Combination Inspector
- Current ICC Combination Inspector
- Current ICC Residential Building Inspector
- Current ICC Residential Combination Inspector
- Current ICC Building Code Official
- OSF Inspector Qualifications (IBC, A101.3) with experience related to the trade
- SC EIT with one year related experience.

Sprayed Fire-Resistant Materials (FP); IBC Section 1704.11

- Current ICC Spray-Applied Fire Proofing certificate
- South Carolina EIT with one year related experience
- OSF approved IBC Chapter 1 Inspector qualifications (IBC, A101.3) with experience related to the trade.

Piling and Drilled Piers (PDP); IBC Sections 1704.8, 1704.9, 1804.2.4 and 1807-11

- Current NICET Level II certification in geotechnical engineering technology/construction
- South Carolina Registered Geologist
- South Carolina EIT with one year related experience
- South Carolina Geologist-in-Training (GIT) with one year related experience
- OSF approved IBC Chapter 1 Inspector qualifications (IBC, A101.3) with experience related to the trade.

Excavation and Filling (EF); IBC Section 1704.7, 1803.4 and 3304

- Current NICET Level II certification in geotechnical engineering technology/construction
- South Carolina Registered Geologist
- South Carolina EIT with one year related experience
- South Carolina GIT with one year related experience
- OSF approved IBC Chapter 1 Inspector qualifications (IBC, A101.3) with experience related to the trade.

Evaluation of In-Place Density

- Current NICET Level II certification in geotechnical engineering technology/construction
- South Carolina Registered Geologist
- South Carolina EIT with one year related experience
- South Carolina GIT with one year related experience

- Clemson/SC DOT Earthwork and Nuclear Gauge Technician School.

Verification of Soils (VS) During Fill Replacement; IBC Section 1804 and 1805

- Current NICET Level II certification in geotechnical engineering technology/construction
- South Carolina Registered Geologist
- South Carolina EIT with one year related experience
- South Carolina GIT with one year related experience.

Modular Retaining Walls (MRW); IBC Section 1610, 1622.4.2, 1704.13, and 2304.11.7

- Current NICET Level II certification in geotechnical engineering technology/construction
- South Carolina Registered Geologist, or
- South Carolina EIT with one year related experience
- South Carolina GIT with one year related experience.

Precast Concrete Erection (PCE); IBC Table 1704.4.

Items 1 & 3 through 10

- Current ICC Reinforced Concrete Certification
- Current ACI Concrete Field Testing Technician – Grade 1 certification
- South Carolina EIT with one year related experience.

Item No. 2

- As required for Welding (SW).

Exterior Insulation and Finish System (EIF); IBC Section 1704.12

- Current ICC Building Inspector
- Current ICC Commercial Building Inspector
- OSF Inspector Qualifications (IBC, A101.3), with experience related to the trade
- Current ICC Commercial Combination Inspector
- Current ICC Building Code Official
- Current ICC Certified Building Official
- Current ICC Master Code Professional
- South Carolina EIT with one year related experience.

Wall Panels and Veneers

- Current ICC Building Inspector
- Current ICC Commercial Building Inspector
- Current ICC Commercial Combination Inspector
- Current ICC Building Code Official
- Current ICC Certified Building Official
- Current ICC Master Code Professional
- South Carolina EIT with one year related experience
- OSF Inspector Qualifications (IBC, A101.3) with experience related to the trade.

Smoke Control (SC); IBC Section 1704.14

- South Carolina Professional Engineer with expertise in fire protection engineering, mechanical engineering and certification as air balancers, including one of the below
- Current NICET N-II-FPAS
- Current NICET N-II-FPFA
- Current NEBB
- Current AABC.

Inspection of Fabricators; IBC 1704.2

Fabrication and Implementation Procedures:

- ISO 9000 Lead Quality Assurance Auditor and meet the applicable special inspector qualification requirements identified herein [sde2].

Fabricator Approval:

- ISO 9000 Lead Quality Assurance Auditor and meet the applicable special inspector qualification requirements identified herein (sde3).

The following fabricator certifications are considered sufficient.

Precast:

- Current ICC Reinforced Concrete Certification
- PCI Level II
- Current National Concrete Association Plant Certification.

Bar Joist:

- Current Steel Joint Institute Certification.

Metal Building:

- Current American Institute of Steel Construction – Metal Building systems Certification.

Structural Steel:

- Current American Institute of Steel Construction
 - Conventional Steel Building Structures
 - Complex Steel Building Structures
 - Simple Steel Bridges
 - Major Steel Bridges.

Prefabricated Trusses

- Current Truss Plate Institute Certification.

Seismic Resistance (SR); IBC Section 1707, 1708, 1709

- Professional Engineer or Architect.

Detention Basin (DB); IBC 1704.13

- Professional Land Surveyor
- Professional Engineer.

Special Cases(XX); IBC 1704.13

- Approval on a case-by-case basis.

3. PUBLICATION OF APPROVED INSPECTORS

Chapter 1 and Chapter 17 special inspectors will be placed on the OSF web site's Approved Inspector Registry (<http://ed.sc.gov/agency/offices/sf>) for the particular inspection areas for which they are deemed qualified. All new personnel to an agency providing inspection services shall be evaluated, approved, and listed by the OSF before being assigned to any project.

Certifications and experience requirements identified above shall be documented and submitted to OSF in accordance with the requirements of Appendix A, APPLICATION FOR DESIGNATION AS AN APPROVED INSPECTOR.

CHAPTER 3

REQUIRED IBC/OSF CHAPTER 1 INSPECTIONS

CODE COMPLIANCE AND CODE VIOLATIONS

It is vital that the reader understand the role of the OSF Approved Inspector. As noted earlier, this designation comes about as a result of an LLR/BCC regulatory change and thus a change in the *South Carolina School Facilities Planning and Construction Guide*. Specifically the SC Planning and Construction Guide now states the following in Division 9, Section 903.1. “The inspector shall be responsible for approved construction document compliance only. All code compliance shall be determined by OSF.” This statement is not intended to suggest that the inspector should not be concerned with code violations. In fact, the inspector is expected to identify, record and report any code violations observed. The statement in the Planning and Construction Guide is intended to reflect the fact that OSF is the Building Official for public schools and thus the arbiter of what is or is not a code violation.

The OSF Approved Inspector should always keep an eye out for any work that might be considered non-compliant with codes and should immediately record and report that information to the owner, contractor and design professional. If the matter is not immediately addressed, OSF should be informed as well. However, as set forth in the “Memorandum of Understanding,” between OSF and the OSF Approved Inspector (See Appendix B) it is construction document compliance which the inspector must focus upon. In order to perform this function adequately, **THE DESIGN PROFESSIONALS MUST PROVIDE AND THE OSF APPROVED INSPECTOR MUST BECOME FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS BEFORE INSPECTING THE PROJECT.** This includes supplementary shop drawings and/or installation plans, as well as the OSF approved design documents and specifications. No inspector can, nor should he/she attempt to inspect for construction document compliance without possession and review of all relevant construction documents.

ITEMS REQUIRING IBC CHAPTER 1 INSPECTIONS/VERIFICATIONS

IBC Chapter 1 and NFPA required inspections include, but are not limited to, the following:

- 109.3.1 Footing or foundation inspection
- 109.3.2 Concrete slab or under-floor inspection
- 109.3.3 Lowest floor elevation
- 109.3.4 Frame Inspections
- 109.3.5 Lath or gypsum board inspection
- 109.3.6 Fire-resistant penetrations

109.3.7 Energy efficiency:

It is appropriate to take special note of the required energy efficiency compliance inspections. Ensuring compliance with ANSI/ASHRAE/IESNA Standard 90.1 – 2004 is a critical part of the inspection process and MUST be specifically addressed. The American Society of Heating and Air Conditioning Engineers (ASHRAE) is the foremost technical society in the fields of heating, ventilation, air conditioning and refrigeration. ASHRAE Standard 90.1 is an ANSI approved national consensus standard co-sponsored by ASHRAE and the Illuminating Engineering Society of North America (IESNA). The Standard provides minimum energy efficiency requirements for the design and construction of new buildings and new construction in existing buildings. In particular, it applies to new buildings and their systems, building additions and their systems, and new systems and equipment in existing building.

The scope of the requirements of Standard 90.1 covers the design of the building envelope, the lighting systems, HVAC systems and other energy using equipment. For the OSF Approved Inspector, the 90.1 Users Manual is the best available source of information, worksheets and checklists for the purpose of ensuring compliance with Standard 90.1. These forms cannot be reproduced here due to the copyright restrictions. However, the 90.1 Users Manual can be obtained from the American Society of Heating and Air Conditioning Engineers, Incorporated, 1791 Tullie Circle, Atlanta, Georgia 30329. The telephone number is 404-636-8400. On the net they can be reached at ashrae.org.

Specifically, we refer you to the following in the Standard 90.1 User Manual:

1. Building Envelope Compliance Forms, page 5-71;
2. HVAC Compliance Forms, pages 6-79 through 6-80;
3. Service Water Heating Compliance Forms; page 7-17; and
4. Lighting Compliance Forms, page 9-34.

These forms MUST be submitted to OSF at the final review stage. The Chapter 1 inspector shall request these forms be provided at the initial pre-construction meeting. The design professional shall have them available for that meeting.

909.3 Special inspection and test requirements (smoke control systems).

Mechanical Code: M107.1. Required inspections

1. Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before backfill is put in place.
2. Rough-in inspection shall be made after the roof, framing, fireblocking and bracing are in place and all ducting and other components to be concealed are complete, and prior to the installation of wall or ceiling membranes.

- Plumbing Code: P107.1 Required inspections and testing
1. Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before any backfill is put in place.
 2. Rough-in inspection shall be made after the roof, framing, fireblocking, firestopping, draftstopping and bracing is in place and all sanitary, storm and water distribution piping is roughed-in and prior to the installation of wall or ceiling membranes.

- Electrical Code:
1. Underground inspection shall be made after trenches or ditches are excavated and bedded, conduit installed, and before backfill is placed.
 2. Rough-in inspection shall be made after the roof, framing, fireblocking and bracing are in place and other components to be concealed are complete, and prior to the installation of concealing construction.

- National Fire Alarm Code: Section 4.5:
1. The installing contractor shall furnish a written statement stating that the system has been installed in accordance with approved plans and tested in accordance with the manufacturer's published instructions and the appropriate NFPA requirements (Section 4.5.1.2).
 2. This shall be accompanied by the record of completion form (Figure 4.5.2.1) Verification of compliance of the completed installation shall be included in the responsibilities of the Chapter 1 inspector (Section 4.5.2.4).

INSPECTION RECORDS AND FORMS

Forms for the purpose of carrying out Chapter 1 and Chapter 17 inspections are presented in Appendix B and C. **Note that these forms now include a Discrepancy Log.** Note also that the form "Chapter 1 Inspection Summary By Area/Building" is to be available for review by an OSF representative at the "above ceiling" and "final" inspection. **If the design professionals have not obtained sign off on this form from the inspector, prior to a scheduled "above ceiling" or "final" inspection, the inspector should exercise his authority to contact OSF prior to the scheduled inspection so that the scheduled inspection may be cancelled.** This will ensure that time and travel are not wasted and the inspection can be rescheduled.

CHAPTER 4 IBC CHAPTER 17 SPECIAL INSPECTOR PROGRAM

SPECIAL INSPECTOR QUALIFICATIONS

When special inspections are required by Chapter 17 of the IBC, the project owner or his designated AOR/EOR, the owner shall retain the services of a qualified special inspector to test the work indicated by the Special Inspection Plan. Under no circumstances shall these services be provided by an agency or person retained or engaged by the general contractor or any of their subcontractors. Between November 5, 2009 and July 1, 2011, for purposes of inspecting public schools, a qualified special inspector is a person who has applied to and been certified by OSF in accordance with the qualification and relevant provisions set forth in this Manual.

After July 1, 2011, a qualified special inspector shall be an individual licensed or registered by the SC Building Codes Council (BCC), the SC Board of Architectural Examiners or the SC Board of Professional Engineers and Land Surveyors and identified on the approved Special Inspector Registry. BCC has stated that they will start receiving applications for registration as a Chapter 17 Special Inspector in May 2011.

As noted in Chapter 2 of this Manual, detailed BCC registration requirements can be found in the BCC Special Inspections Manual on the BCC website ([http://www.llr.state.us//pol/bcc/.](http://www.llr.state.us//pol/bcc/))

NOTIFICATION OF SPECIAL INSPECTOR OR FIRM EMPLOYED

If not already accomplished through submission of the OSF Required Special Inspections Form (see Appendix D), then at the time of the preconstruction meeting, the design professional shall submit a letter to OSF that:

1. States the project name and address; and
2. Identifies each inspection firm and inspectors contracted and specifies the work for which they have formally been retained, by the project owner, to inspect and/or test.

SPECIAL INSPECTION PLANS

When the building plans are submitted to OSF, the AOR/EOR shall include in the specifications the required inspections called for. Furthermore, the AOR/EOR shall complete and submit to OSF the Required Special Inspections Form (See Appendix “D”) or a similar form upon the selection of the inspectors and/or inspection firm. All special inspections and names of the special inspectors required by this Manual or the IBC, or as otherwise specified by the designer of record, shall be identified on this form.

Special inspection plans and schedules shall be specific to each project. Generic, boiler plate approaches are not acceptable and will be deemed cause for rejecting plans submitted to OSF.

APPROVED FABRICATORS

When work is being performed on the premises of a facility/plant that is approved by a nationally certified organization, shop inspections are not required. The approved fabricator shall submit the following items to the OSF Approved Inspector and/or the contractor:

1. A copy of their current certification; and
2. A letter stating the name, address, control number of the project, and fabricator's file number. It shall state that they are the fabricator for the project; and that upon completion of the fabrication; a Certificate of Compliance will be submitted stating that the fabrication work was performed in accordance with the approved plans, shop drawings and specifications.

The approved fabricator will send the Certificate of Compliance after the above items are completed. **NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED BY OSF UNTIL THIS FORM HAS BEEN COMPLETED AND RETURNED TO THE INSPECTOR.** The organizations that have been approved to certify fabricators can be found in Chapter 7 of this Manual under the relevant sections addressing precast concrete and steel frame fabrication.

SHOP DRAWINGS AND ERECTION PLANS

When a project's base building plans do not provide the special inspector with the details and/or information necessary to perform a proper inspection of the work, supplemental documents shall be submitted. The contractor shall provide one (1) set of the project drawings, shop drawings and/or erection plans at the job site for the special inspector(s) use. **ALL SUCH DRAWINGS SHALL BE AVAILABLE, ON SITE, PRIOR TO THE RELEVANT WORK BEING INITIATED.** All such plans or drawings shall be marked as reviewed and approved by the AOR/EOR for compliance with design drawings.

INSPECTION RECORDS AND FORMS

Note that forms for recording inspections are provided in Appendix C, including a new Discrepancy Log. These forms are critical to ensuring that the inspection process is well and thoroughly carried out as called for by IBC and OSF.

CHAPTER 5

ITEMS REQUIRING IBC, CHAPTER 17 SPECIAL INSPECTION

The requirements for special inspections outlined in this chapter shall apply to the building elements set forth below, with the following exceptions:

Exceptions:

1. Special inspections are not required for work of a minor nature or if not warranted by conditions in the jurisdiction, as approved by OSF.
2. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by applicable state statutes and regulations governing the professional registration and certification of engineers or architects.

EXCAVATION AND FILL

Excavation. All excavations with slopes exceeding those permitted by IBC 3304.1.

Fill: All fill greater than 1 foot in depth within the footprint of a structure or within the zone of influence of the structure's foundation; or, for a development consisting strictly of detached one and two family dwellings, where fill is used to support foundations of any building or structure.

SOILS AND FOUNDATION

Deep foundations. All piling and drilled piers.

Shallow footings and foundations. All shallow footings and foundations except: (a) Light frame buildings or structures of three stories or less in height involving only continuous or spread footings that meet the requirements of IBC Section 1704.4 (unless located at a reduced setback to a slope in accordance with IBC 1805.3.5); (b) Concrete foundation walls constructed in accordance with IBC Table 1805.5 (1-4).

Soils Verification. In addition to the foundations specified above, verification of soil conditions for structures with design soil bearing values in excess of 2,000 pounds per square foot or where the structure bears on fill material.

EARTH RETAINING STRUCTURE

Retaining structure for deep excavation. Any slope-retention system (permanent or temporary) for excavations over 12 feet deep.

Retaining walls. Any retaining wall that is: (a) over six-(6) feet in height measured from grade on the low side of the wall; (b) supporting surcharge or impounding flammable liquids.

DETENTION BASIN

All detention basins.

CONCRETE FRAME

All reinforced concrete, including prestressed concrete and post-tension slabs except for a slab-on-grade with effective prestress of less than 150 psi. (IBC Section 1704.4 and Chapter 19)

STEEL FRAME

All structural steel, including open web joists, bracing and stiffening members, and connections of high-strength bolts or welds (structural, metal deck, shear stud, and metal stud). [IBC Section 1704.3 and Chapter 22].

STRUCTURAL MASONRY

All masonry construction, except as exempted by IBC Section 1704.5.

SPRAYED FIRE-RESISTANT MATERIALS

All spray-applied fire resistant materials. (IBC Section 1704.11).

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

All EIFS applications except for applications over water-resistive barriers or over masonry or concrete walls. [IBC Section 1704.12].

SMOKE CONTROL

Smoke control systems. (IBC Section 1704.14).

SEISMIC RESISTANCE

For Seismic Design Category of “C” or higher, special inspections shall be provided, in addition to those specified herein, for portions of the seismic resistance systems in accordance with the requirements of IBC Section 1707 and the additional requirements of Sections 1705, 1708, and 1709.

SUSPENDED CEILINGS

Suspended ceilings in Seismic Design Categories D, E, and F are subject to periodic inspections during the anchorage of suspended ceiling systems in accordance with the requirements of IBC Section 2506.2.1 and Section 9.6.2.6.2.2(h) of ASCE 7-02. The special inspector must verify that the ceiling system complies with the installation instructions.

INSPECTION OF FABRICATORS

All fabrication of structural load-bearing members and assemblies, including wood trusses, metal buildings, precast concrete, bar joists, and structural steel, shall have special inspections during fabrication except where the work is done on the premises of a plant certified by an acceptable organization as specified in Chapter 8 of this Manual.

SEISMIC AND WIND RESISTANCE

IBC states, in Chapter 17, specific contractor responsibilities, as follows:

Each contractor responsible for the construction of a main wind- or seismic-force-resisting system, designated seismic system or a wind- or seismic-resisting component listed in the statement of special inspections shall submit a written statement of responsibility to the building official and the owner prior to the commencement of work on the system or component. The contractor's statement of responsibility shall contain the following:

1. Acknowledgment of awareness of the special requirements contained in the statement of special inspections;
2. Acknowledgment that control will be exercised to obtain conformance with the construction documents approved by the building official;
3. Procedures for exercising control within the contractor's organization, the method and frequency of reporting and the distribution of the reports; and
4. Identification and qualifications of the person(s) exercising such control and their position(s) in the organization.

IT IS THE INSPECTORS' RESPONSIBILITY TO VERIFY THAT THE CONTRACTOR CONFORMS TO THIS SECTION OF THE CODE.

Furthermore, it is vital to understand that mechanical, electrical and plumbing seismic and vibration analysis and inspections are required and must include the seismic protection for electrical raceways, and equipment; plumbing, piping and related equipment; and, seismic protection for mechanical systems.

SPECIAL CASES

Special cases or construction that, in the opinion of the design professionals and/or the Director of the Office of School Facilities involves unusual hazards or conditions. (IBC Section 1704.13).

CHAPTER 6

PRECONSTRUCTION MEETING

Prior to the commencement of any work, a preconstruction meeting shall be held for the purpose of reviewing the inspection requirements for the project. Those required to attend the meeting are the owner or the individual acting as the agent for the owner, the general contractor, the IBC, Chapter 1 Inspector and any special inspectors and/or special inspection agencies.

The owner or the individual acting as the agent for the owner, will develop a project inspections manual, which will identify the specific Chapter 1 and special inspection requirements for that project and include the applicable directives from this Inspection Program Manual. The Manual should also include the agreed upon inspection recording forms that will be used throughout the project.

The project manual will form the basis for the preconstruction meeting and become part of the construction documents with the issuance of permits. The information in the project inspections manual will be reviewed to verify that all parties have a clear understanding of the special inspections provisions and the individual duties and responsibilities of each party.

The representatives of the project owner, general contractor and special inspector and/or special inspection agency of record will sign a log-in sheet documenting their presence at the meeting. A copy of the project inspections manual will be given to all present and the general contractor's copy will be made available on the job site during construction.

If necessary, modifications to the manual may be made with the consent the AOR/EOR. All modifications shall be dated and submitted to the Special Inspector, for review. Upon approval, the modifications will be incorporated into the approved project inspections manual. It is the project owner's responsibility, or his agents, to ensure that the approved modifications are made available on the job site for review by the inspector(s) and the general contractor.

CHAPTER 7
IBC CHAPTER 17
SPECIAL INSPECTION PROCEDURAL REQUIREMENTS

The following procedural requirements should be read and understood by all parties to the inspection process:

1. The general contractor shall ensure that copies of approved plans, specifications and shop drawings are provided to the relevant subcontractors, OSF and/or BCC registered inspectors **PRIOR TO THE START OF THE AFFECTED WORK.**
2. It is the inspector's responsibility to thoroughly review the approved plans and/or shop drawings in advance of construction to establish that adequate information is available to conduct the required inspections and tests. All errors and/or omissions in the reviewed plans or shop drawings that create any form of uncertainty or ambiguity shall be resolved through the AOR/EOR. It is the duty of the AOR or EOR to directly address and/or coordinate any code interpretation issues with OSF.
3. The contractor is responsible for notifying inspectors when work is ready for inspection. A minimum of 24-hours notice shall be provided in order to ensure the inspector has time to inspect the work and to ensure that there is time to inspect the work prior to concealment. The contractor shall provide access to and means for safe and proper inspection of the work.
4. An OSF and/or BCC registered inspector shall perform inspections and/or tests of the work for conformance with the approved plans, specifications, shop drawings and applicable provisions of the International Building Code. It is the inspector's responsibility to verify that all work requiring inspections is inspected and/or tested prior to concealment.
5. After each inspection, the inspector shall complete an Inspector's Daily Report form (See Appendix B and Appendix C) and Discrepancy Log and give it to the contractor. Any non-conforming items shall be brought to the immediate attention of the general contractor and noted on the Daily Report form.
6. The general contractor shall create a file (three-ring binder) for the special inspector's reports. This file shall be located in a conspicuous place in the project trailer/office to allow review by OSF inspectors project design professionals, or other inspectors or owner representatives. **No Certificate of Occupancy will be issued until an inspector's completion report has been reviewed and approved by the OSF.**

7. The inspector of record shall maintain a Discrepancy Log and submit a weekly report to the AOR/EOR and the contractor until all work requiring inspections is complete (See examples in Appendix B and Appendix C). Weekly reports shall include the following:
 - A brief summary of the work performed during the reporting time frame;
 - Changes and/or discrepancies with the approved drawings or specifications that were observed during the reporting period;
 - Discrepancies that were resolved or corrected;
 - A list of nonconforming items requiring resolution; and
 - All applicable test results.

8. When the work requiring inspections is completed and all nonconforming items have been resolved, the general contractor shall notify the inspector to submit a Completion Report (See sample in Appendix A) to OSF, AOR/EOR, and general contractor. **A Certificate of Occupancy will not be issued until the final report has been reviewed and approved by OSF.**

CHAPTER 8
IBC CHAPTER 17
SPECIAL INSPECTION GUIDELINES

A. REINFORCED CONCRETE (PLACEMENT, TESTING, BOLTS, REINFORCING STEEL) and PRESTRESSED CONCRETE (PRETENSION AND POST-TENSION TENDONS)

Placement of Reinforced Concrete: IBC Table 1704.4 (Items 6 and 7) 1. 1805

A special inspector shall be on-site during the placement of reinforced concrete. The inspector shall provide a continuous inspection of the conveying, depositing, and consolidation of concrete, for conformance with the approved plans, specifications and Chapter 19 of the IBC. The special inspector shall observe placement procedures for evidence of segregation, possible cold joints, displacement of reinforcing or forms, and proper support of embedded items, anchor bolts, etc. When the point of deposit of concrete cannot be observed by the individual monitoring the discharge from trucks or the batch plant, additional personnel shall be provided.

Concrete delivery tickets shall be checked to verify that the class of concrete ordered is being delivered and conforms to project plans, specifications and/or code requirements.

Testing of Reinforced Concrete; IBC Table 1704.4 (Item 5)

For each class of concrete placed each day, the special inspector shall obtain a sample for strength tests at the frequency stated in Section 1905.6.2 of the IBC or approved specifications. A strength test shall be the average of the strengths of two cylinders, made from the same sample of concrete, laboratory cured, and tested at 28 days. Additional cylinders shall be cast if any changes in the mix consistency are noted or when directed by the AOR/EOR.

Concrete test cylinders shall be cast, stored and tested in accordance with Chapter 19 of the IBC. If the strength test of cylinders falls below the specified values in IBC 1905.6.3.3, the special inspections agency shall notify the general contractor immediately so remedial action can be taken in accordance with Section 1905.6.5 of the IBC.

Slump, air-content, and temperature tests shall be conducted when strength specimens are made or at the option of the inspector as often as necessary for control checks. All other concrete testing shall be conducted as stated in the project specification and per ASTM Standards.

Bolts Installed in Concrete; IBC Table 1704.4 (Item 3) and Section 1912

An inspection is required prior to and during the placement of concrete around bolts. The special inspector shall verify that the bolt size, location and embedment length are in conformance with the approved plans, specifications and shop drawings.

Placement of Reinforcing Steel: IBC Table 1704.4f Item 11

Prior to the closing of forms or the delivery of concrete to the job site, the special inspector shall verify that the reinforcing steel is in conformance with the approved plans, specifications and shop drawings and Chapter 19 of the IBC. The special inspector shall confirm that the reinforcing steel is of correct size and grade and ensure that the proper spacing, clearances, splice lengths and embedded items have been provided. All reinforcing steel shall be in place prior to the placement of concrete and shall be secured against displacement.

Prestressing Steel, Prestressed and Post-Tension Tendons; IBC Table 1704.4 (Items 8 and 10), Section 1906.2.2.3

Prior to the placement of concrete, the special inspector shall verify that the prestressing steel has the proper chair heights, tendon profiles, clearances, and steel anchorage as detailed in the approved plans, specifications and shop drawings.

The special inspector shall be present during the entire stressing and grouting operation. The steel tendons shall be stressed, with a calibrated stressing ram, at the specified strength, using the procedure approved by the engineer of record. The special inspector shall calibrate or review current calibration data on the proposed stressing equipment and verify that the concrete meets the minimum required compressive strength prior to post-tensioning.

Post-Tension-Slabs-on-Ground; IBC Section 1805.8.2

Slab-on-ground foundations. Slab-on-ground, mat or raft foundations on expansive soils shall be inspected in accordance with WRI/CRSI Design of Slab-on-Ground Foundations or PTI Design and Construction of Post-Tensioned Slabs-On-Ground.

B. PRECAST CONCRETE (INSPECTION OF FABRICATOR, ERECTION OF PRECAST)

Inspection of Fabricator; IBC 1704.2

The following programs are currently approved to provide certification of fabricators:

- International Conference of Building Officials (ICBO)
- International Code Council (ICC)
- Precast/Prestressed Concrete Institute (PCI)

- Architectural Precast Association (APA).

When precast concrete is fabricated in a plant that is not certified by a nationally recognized organization, in-plant inspection is required as follows.

The special inspector shall provide in-plant inspections during the fabrication of precast for compliance with the approved plans, specifications and shop drawings. Each precast member shall be inspected for proper form dimension, reinforcing steel, prestressing tendons, embeds and lifting devices prior to concrete placement. It is the fabricator's responsibility to notify the special inspector prior to concrete placement and to have the required plans on-site for the inspection.

The special inspector shall monitor the placement of concrete during casting and obtain samples for strength tests as required by project specifications. Concrete compressive strength results and stressing data shall be recorded for each member and submitted with the Special Inspections' Report.

Erection of Precast Concrete; IBC Table 1704.4 (Item 9)

Erected precast concrete members shall be inspected for compliance with the approved erection drawings. The special inspector shall verify proper member location and that no cracking, chipping or marring has occurred during the shipment and erection. Any modifications or damage to precast members shall be reported as a discrepancy and brought to the attention of the precast design engineer of record and project engineer or architect of record.

Precast connections shall be inspected for conformance with the approved plans and precast erection drawings, Connections that deviate from the plans due to field modifications or misalignment shall be reported as a discrepancy and addressed by the precast design professional and AOR/EOR.

C. SOILS, EXCAVATION, FILLING, DRILLED PIERS, PILING, EARTH RETAINING STRUCTURES AND DETENTION BASIN

Verification of Soils; IBC Section 1704.7, and Chapter 18

The subgrade supporting the footings of buildings or structures shall be inspected immediately prior to the placement of reinforced concrete. The special inspector shall observe and test all footing excavations to verify conformance with approved plans and/or geotechnical engineer's report. The foundation shall be of proper size and depth and free of any loose, deleterious or foreign material.

Where unsuitable bearing conditions are observed, the geotechnical engineer of record and project engineer of record shall be notified immediately so that remedial procedures can be established.

Excavation and Filling; IBC Sections 1704.7 and 3304

For excavation and fill, a special inspector shall monitor the operations for conformance with the approved plans and/or geotechnical engineer's report.

During the engineered structural fill, the special inspector shall provide sufficient observation to verify that the preparation of the natural ground and placement of compacted fill is being performed in accordance with the geotechnical engineer's recommendations.

The special inspector shall monitor the placement of each lift of structural fill supporting the foundation of any structure. The special inspector shall monitor and test all fill to determine whether the type of material, moisture content and degree of compaction are within the recommended limits set forth by the geotechnical engineer of record.

Drilled Piers and Piles; IBC Sections 1704.8-9, 1802.2.4 and 180.7-11

A special inspector shall be on-site during the construction of all piers, piles and pressure-injected footings. Work shall be in accordance with the approved drawings and as specified by the geotechnical engineer of record.

Earth Retaining Structures; IBC Section 1610, 1622.4.2, 1704.13, and 2304.11.7

Any slope retention system designed to resist active earth pressure shall have special inspections. The special inspector shall perform the necessary inspections and tests to ensure the system is installed per the approved plans and specifications.

Earth retaining structures (modular, stacked stone, concrete) shall be installed in accordance with plans and specifications prepared by a registered design professional in accordance with the geotechnical exploration and results of the global stability analysis. For modular retaining walls, each lift of backfill and each grid shall be inspected.

After a temporary earth-retaining structure is installed, a bi-weekly inspection shall be made throughout the life of the project to verify the system is performing as intended and no changes have occurred.

Detention Basin: IBC Section 1704.13

After a storm water detention basin is constructed, it shall be inspected for conformance with the approved plans. The special inspector shall survey the basin to verify that the proper finish grade elevations have been obtained and if orifice plates, pipe screens or erosion control systems are detailed, that they are installed as per the plans.

D. STRUCTURAL STEEL (WELDING, HIGH STRENGTH BOLTING, STEEL FRAME)

Field Welding of Structural Steel; IBC Section 1704.3

Special inspections are required for the welding of structural members or connections for compliance with the approved plans, shop drawings, specifications and Chapter 22 of the IBC. The special inspector shall provide a continuous inspection of, structural welding unless the requirements of Table 1704.3 (Item 5), and/or Section 1704.3 (Items 2.1-2.5) are satisfied, thus allowing periodic inspections. For periodic inspection, the special inspector shall check qualifications of welders at the start of work and then make final inspection of all welds for compliance prior to completion of welding. Single pass fillet welds not exceeding 5/16 inch shall be identified on the drawing.

The special inspector shall inspect the equipment, material and technique being employed and verify that the welding is performed by certified welders qualified in the procedure being used. A visual inspection of the completed work shall be made to ensure proper type, size, length and quality of the welds.

Field Bolting of Structural Steel; IBC Section 1704.3.3

Structural steel joints using A 325 high-strength bolts, A 490 heat-treated high-strength bolts or equivalent fasteners shall have special inspections. The special inspector shall monitor the prequalification, installation and tightening of bolted connections in accordance with the approved plans and Table 1704.3. (Items 1 and 2)

When bolted connections require full pretension, the special inspector shall prequalify the pretensioning method and verify that the specified procedure was used to achieve the design tension. A tension calibrator shall be provided, at the job site, to verify fastener assemblies, to train installation crews, and to calibrate wrenches (if calibrated wrench method is used). This requires a meeting with the special inspector and the steel erector prior to any erection.

Bolts in connections identified as not being slip critical nor subject to direct tension need not be inspected for bolt tension. The special inspector does not need to be present during the entire installation and tightening operation provided that the bolts are installed in properly aligned holes and tightened to the snug-tight condition. Bolts required to be tightened only to a snug-tight condition shall be clearly identified on the approved drawings.

Steel Frame Inspection; IBC Section 1704.3. Table 1704.3 (Items 3 and 6)

The special inspector shall perform an inspection of the structural steel frame to verify compliance with the details shown on the approved plans and shop drawings, such as bracing, stiffening, member location and proper application of joint details at each connection.

Inspection of Fabricator: IBC Section 1704.2.and Chapter 22

The following organizations are approved by Building Department to certify fabricators:

- American Institute of Steel Construction (AISC)
- International Conference of Building Officials (ICBO)
- International Code Council (ICC)
- Steel Joist Institute (SIT).

Structural steel, bar joists and metal buildings fabricated on the premises of a facility/plant not certified by a nationally recognized organization shall have in-plant special inspections as follows:

The special inspector shall inspect the work during fabrication for compliance with the approved plans, shop drawings, specifications and Chapters 17 & 22 of the IBC. Each member shall be inspected and approved by the special inspector prior to shipment. It is the responsibility of the fabricator to notify the special inspector and have the reviewed plans on-site for the inspection. The general contractor shall coordinate this inspection. Daily reports indicating the members inspected shall be submitted to the Building Department and AOR/EOR with the weekly Special Inspections Report.

E. INSPECTION OF SPRAYED FIRE RESISTANT MATERIAL

Spray-Applied Fire Resistant Materials; IBC Section 1704.11

When spray-applied fire resistant material is provided for the fire-resistive protection of structural steel members, special inspections are required for conformance to the manufacturer's instructions. Surface conditions shall be inspected prior to the application per 1704.11.1. Minimum substrate ambient temperature shall be verified before and after application per 1704.11.2.

The special inspector shall inspect the fireproofing in accordance with 1704.11, and the approved plans and specifications. The thickness and density of the fireproofing shall not be less than the requirements of the listing of the fire-resistive assembly. The cohesive/adhesive bond strength shall be tested for not less than 150 pounds per square foot.

Just prior to concealment, a complete visual inspection of the fireproofed members shall be conducted. The special inspector shall verify that the sprayed fire-resistant materials has no voids, spalls and delamination or has been scraped or knocked off during construction.

F. STRUCTURAL MASONRY

The special inspector shall provide the inspection and testing of structural masonry for conformance with the approved plans, specifications, inspection

schedule as set forth by the design professional (continuous or periodic), and IBC Sections 1704.4 and 1704.5 of the IBC.

During cold weather construction, the special inspector shall verify that the provisions of IBC Section 2104.3 are being observed.

Mortar and grout shall be properly mixed using the specified material proportions per the mix design. The method of measuring shall be such that the material proportions are controlled.

For empirically designed masonry, glass unit masonry, and masonry veneer in essential facilities, or engineered masonry in nonessential facilities, the minimum special inspection program shall comply with IBC Table 1704.5.1.

For engineered masonry in essential facilities, the minimum special inspection program shall comply with IBC Table 1704.5.3.

G. SEISMIC RESISTANCE

The special inspection's set forth in IBC Section 1707 for seismic resistance is in addition to those required in Section 1704. This special inspection is only required for structures in Seismic Design Categories C, D, E, or F and only when required in Section 1704.

Steel construction. Per IBC Table 1704.3, Item 5, continuous inspection of welding is required.

Structural wood. The inspections are to ensure continuity of load path within the seismic lateral-force-resisting system. Particular care should be given to the nailing of diaphragms and shear walls. Also of particular importance is the connection of drag struts or collectors to the shear walls and the proper installation and tightening of hold-down bolts in shear walls.

Cold-formed steel framing. The inspections are to ensure continuity of load path with the seismic lateral-force-resisting system.

Storage racks and access floors. Proper anchorage is critical to keep racks from overturning.

Architectural components. Without proper attachment, cladding and veneer can be lethal if detached from the structure during seismic shaking, as well as potentially blocking exit paths.

Mechanical and electrical components. Inspection is necessary for components that shall function in post earthquake conditions such as emergency electrical systems or for anchorage of mechanical equipment, piping, and ducting using or caring flammable or hazardous material.

H. SUSPENDED CEILINGS

Suspended ceilings shall be designed to meet the seismic force requirements of ASCE 7.02, Section 9.6.2.6.1. In addition, suspended ceilings shall meet the requirements of either industry standard construction as modified in ASCE 7.02, Section 9.6.2.6.2 or integral construction as specified in ASCE 7.02, Section 9.6.2.6.3. Without proper attachment ceilings can readily fall during a seismic event. **The Special Inspector must verify that the ceiling system fully complies with the manufacturers installation instructions.**

I. CONTRACTOR SEISMIC AND WIND RESISTANCE PROJECT RESPONSIBILITIES

SEISMIC AND WIND RESISTANCE

IBC states, in Chapter 17, specific contractor responsibilities, as follows:

Each contractor responsible for the construction of a main wind- or seismic-force-resisting system, designated seismic system or a wind- or seismic-resisting component listed in the statement of special inspections shall submit a written statement of responsibility to the building official and the owner prior to the commencement of work on the system or component. The contractor's statement of responsibility shall contain the following:

1. Acknowledgment of awareness of the special requirements contained in the statement of special inspections;
2. Acknowledgment that control will be exercised to obtain conformance with the construction documents approved by the building official;
3. Procedures for exercising control within the contractor's organization, the method and frequency of reporting and the distribution of the reports; and
4. Identification and qualifications of the person(s) exercising such control and their position(s) in the organization.

IT IS THE INSPECTORS' RESPONSIBILITY TO VERIFY THAT THE CONTRACTOR CONFORMS TO THIS SECTION OF THE CODE.

Furthermore, it is vital to understand that mechanical, electrical and plumbing seismic and vibration analysis and inspections are required and must include the seismic protection for electrical raceways, and equipment; plumbing, piping and related equipment; and, seismic protection for mechanical systems.

J. EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

Special inspection for EIFS systems should be based on manufacturer's installation instructions. Critical areas necessary for adequate EIFS performance are proper installation of waterproofing membrane and installation of flashings at windows, doors, joints, eaves, corners, and penetrations. (IBC Section 1704.12)

K. SPECIAL INSPECTION FOR SMOKE CONTROL

Special inspection of smoke-control systems (IBC Section 1704.14), although related to mechanical systems rather than structural or architectural systems, is required because the mechanical ductwork and signaling devices are likely to be concealed during the building construction, and the ductwork shall be leakage tested prior to concealment.

The test scope shall be in accordance with IBC Section 1704.14

- During erection of ductwork and prior to concealment for the purpose of leakage testing and recording of device location
- Prior to occupancy and, after sufficient completion for the purposes of pressure difference testing, flow measurements and detection and control verification.

The special inspector for smoke control shall have expertise in fire-protection engineering, mechanical engineering and certification as an air balancer. (IBC Section 1704.14.2)

L. WOOD CONSTRUCTION

The special inspections for wood construction are set forth in IBC Section 1704.6 and are entirely reproduced below.

- Wood Construction. Special inspections of the fabrication process of prefabricated wood structural elements and assemblies shall be in accordance with Section 1704.2. Special inspections of site-built assemblies shall be in accordance with Section 1704.1.
- Fabrication of high-load diaphragms. High-load diaphragms using values from Table 2306.3.2 shall be installed with special inspections as indicated in Section 1704.1. The special inspector shall inspect the wood structural panel sheathing to ascertain whether it is of the grade and thickness shown on the approved building plans. Additionally, the special inspector must verify the nominal size of framing members at adjoining panel edges, the nail or staple diameter and length, the number of fastener lines and that spacing between fasteners in each line and at edge margins agrees with the approved building plans.

M. WALL PANELS AND VENEERS

Special inspections for wall panels and veneers are specified in IBC Section 1704.10. This Section is reproduced below.

- Wall panels and veneers. Special inspection is required for exterior and interior architectural wall panels and the anchoring of veneers for buildings assigned to Seismic Design Category E or F in accordance with Section

1616.3. Special inspection of such masonry veneer shall be in accordance with Section 1704.5.

APPENDIX A

- 1. APPLICATION INSTRUCTIONS**
- 2. APPLICATION FOR DESIGNATION AS
AN OSF APPROVED CHAPTER 1 INSPECTOR**
- 3. APPLICATION FOR CHAPTER 17 OSF SPECIAL
INSPECTOR**
- 4. MEMORANDUM OF UNDERSTANDING**

OSF APPROVED INSPECTOR APPLICATION INSTRUCTIONS

DIRECTIONS: PLEASE ANSWER THE QUESTIONS THOROUGHLY. TYPE OR PRINT ALL RESPONSES. SUBMIT A SEPARATE APPLICATION FORM FOR EACH INSPECTOR APPLYING. IF APPLYING FOR BOTH CHAPTER 1 AND CHAPTER 17 APPROVAL---BOTH APPLICATIONS MUST BE SUBMITTED.

MAIL THE **ORIGINAL** OF THE COMPLETED APPLICATION; APPLICANT QUALIFICATION DOCUMENTATION INCLUDING A RESUME, BCC REGISTRATION (IF RELEVANT) AND, FOR THOSE SEEKING APPROVAL TO PERFORM CHAPTER 1 INSPECTIONS, AN ORIGINALLY SIGNED MEMORANDUM OF UNDERSTANDING (See APPENDIX B); ALONG WITH THE APPLICATION FEE TO:

JOHN B. KENT
INSPECTION PROGRAM ADMINISTRATOR
OFFICE OF SCHOOL FACILITIES
1429 SENATE STREET, ROOM 1114C
COLUMBIA, SOUTH CAROLINA 29201

APPLICATION FEE: CHAPTER 1 ONLY

Forty Dollars (\$40.00) per new and renewal application to be paid with submitted application. Make check payable to: SC Department of Education.

APPLICATION FEE: CHAPTER 17 ONLY

Forty Dollars (\$40.00) per new and renewal application to be paid with submitted application. For additional inspection categories to be added to a currently approved inspector's file, a fee of \$25.00 will be required. Make checks payable to: SC Department of Education.

APPLICATION FEE FOR BOTH CHAPTER 1 AND CHAPTER 17

Seventy-five dollars per new and renewal application. Make check payable to the SC Department of Education.

**APPLICATION FOR DESIGNATION
AS AN OSF APPROVED CHAPTER 1 INSPECTOR**

- 1) PURPOSE:
 - a) New Application:
 - b) Renewal Application:

- 2) Name of Applicant:

- 3) Date: _____
- 4) E-mail: _____

- 5) Firm or Public Affiliation (if any):

- 6) Business Address:

- 7) Work Phone:

- 8) Identify below, with an "X," the BCC registration inspection categories for which OSF approval is sought. Check all that you seek approval for. ***You must attach a copy of your LLR/BCC registration, as a code enforcement officer or design professional.***
 - a) G1---CBO _____
 - b) G2---General Combination Inspector _____
Specific inspection categories
for which you have BCC approval.
 - Building Inspector _____
 - Mechanical Inspector _____
 - Electrical Inspector _____
 - Plumbing Inspector _____
 - c) Single discipline inspector
 - Building Inspector _____
 - Mechanical Inspector _____
 - Electrical Inspector _____
 - Plumbing Inspector _____

- 9) ***You must attach a copy of your resume'.***

- 10) ***You must attach an originally signed OSF Memorandum of Understanding.***

- 11) Applicant Signature: _____

A fee of \$40.00 must accompany this application. Checks should be made out to the **South Carolina Department of Education** to mail application and fee to **John Kent, Program Administrator, Office of School Facilities, 1429 Senate Street, Room 1114C, Columbia, SC 29201.**

**MEMORANDUM OF UNDERSTANDING BETWEEN
SOUTH CAROLINA DEPARTMENT OF EDUCATION
OFFICE OF SCHOOL FACILITIES
AND
THE OSF APPROVED CHAPTER 1 INSPECTOR**

SECTION I. GENERAL

This Memorandum of Understanding (Memorandum) is made and entered into this ____ day of _____ 20____, by and between the Office of School Facilities (OSF) and _____, OSF Approved Inspector.

WITNESSETH:

WHEREAS, S.C. Code Ann. § 59-23-220 (2004 Supplement) requires that all public school buildings (Pre-K through twelfth grade) be inspected and approved by the State Superintendent of Education, his or her agent, before first being occupied;

WHEREAS, the OSF is an organized office of the State Department of Education (SDE) and thus the agent of the State Superintendent of Education and is the office charged with carrying out the responsibilities set forth in S.C. Code Ann. § 59-23-220 (2004 Supplement);

WHEREAS, the OSF, as the Building Official for all public school buildings, reviews and approves all plans and specifications for those public school buildings, inspects construction and approves occupancy;

WHEREAS, the OSF Approved Inspector has SC Building Codes Council certified expertise;

WHEREAS, the OSF and the OSF Approved Inspector find that this Memorandum of Understanding is fair and reasonable;

NOW, THEREFORE, and in recognition of our commitment to the promotion of public health and safety, it is agreed by and between the parties that it is in the best interests of the OSF and the OSF Approved Inspector to enter into this Memorandum of Understanding to provide OSF public school construction inspections in the manner defined below.

SECTION II. RESPONSIBILITIES

- I. Scope of Services.** The purpose of the Memorandum is to facilitate the efforts of the OSF in fulfilling its responsibilities to perform code required inspections of public school construction within its jurisdiction, and to support the OSF's mission to safeguard the public health, safety, and general welfare with respect to the design and construction of Pre-K through twelfth-grade (12th) school facilities.

II. Term of the Agreement. The term of this agreement shall be for two years from the date of execution and maybe renewed by application to OSF for additional two-year periods, unless either party gives written notice of nonrenewal to the other party.

III. Responsibilities of the OSF Inspector.

- A. The OSF Approved Inspector shall maintain any certifications or registrations that served in whole or in part as the basis for OSF approval of the applicant for designation as an OSF Approved Inspector.
- B. The OSF Approved Inspector shall assume responsibility for construction inspections for approved document compliance, as required by Chapter 1 of the *International Building Code, The South Carolina School Facilities Planning and Construction Guide* and this *OSF Inspection Program Manual*. All code interpretations shall be determined by OSF.
- C. The OSF Approved Inspector shall respond to any call requesting an inspection be scheduled.
- D. In conjunction with the project architect, engineer, construction manager and/or contractor, the OSF Approved Inspector shall be prepared to carry out a required inspection within 24 hours of notice. If an Inspector fails to show up for a scheduled inspection, the follow-up inspection shall be provided at no cost to the owner.
- E. The OSF Approved Inspector shall maintain records of each and every inspection carried out, identifying the date, time, and owner representative and/or contractor present at the inspection. The Inspector shall also specify the purpose or type of inspection(s) being performed and shall specifically state whether the work inspected was found to be satisfactory or unsatisfactory. A summary Discrepancy Log shall also be maintained by the OSF Approved Inspector and will be available at any OSF inspection. The records shall state what corrective action (if any) is expected of the contractor to resolve any unsatisfactory work and a timeframe for that corrective action.

The inspection record shall be clear and legible. A copy of the inspection record shall be given to the contractor and the original retained by the inspector until at least one year after the date the building is approved for occupancy by OSF.

- F. Required corrective actions called for by the inspector shall be followed up on through re-inspection to ensure corrective actions have been taken and the date and action shall be recorded in the Discrepancy Log.
- G. In accordance with IBC, S109.1, the IBC inspector understands that he has the right (and responsibility) of access to all construction work. If any work has been covered prior to the required inspection, the OSF Approved Inspector has the right and responsibility to order that access be created as necessary. As stated in IBC, neither the OSF Approved inspector nor the jurisdiction shall be liable for expenses entailed in the removal and/or replacement material.

- H. The OSF Approved Inspector shall notify OSF immediately of any significant problem revealed by an inspection and any “stop work order” being considered shall first be discussed with OSF. If OSF is not immediately available, the OSF Approved Inspector shall take immediate action and report his actions to OSF as soon as feasible.
- I. The OSF Approved Inspector shall not begin carrying out any inspection services under this memorandum alone. A specific request for an inspection shall first be initiated by the owner, architect, engineer, construction manager, and/or contractor for any given project.

IV. Responsibilities of the OSF.

- A. Receive and process in a timely manner any Application for designation as an OSF Approved Inspector.
- B. Issue a wallet identification card to and execute a Memorandum of Understanding with any qualified person whose application for OSF Approved Inspector has been approved.
- C. Maintain an up-to-date registry of all active, qualified OSF Approved Inspectors and make it readily available, via the internet, to all architects, engineers, construction managers and/or contractors in the State of South Carolina who are engaged in public school construction.
- D. Continue to fulfill the role of Building Inspector for schools, providing code interpretations, “above ceiling” and final occupancy inspections.
- E. Provide a hearing, on request, to those whose approval has been terminated in accordance with Subsection VI of Section II of this agreement.

V. Memorandum Modification. This Memorandum may be amended only if the Director of the OSF and the OSF Approved Inspector mutually agree in writing.

VI. Termination. A) This agreement may be terminated immediately by OSF for failure of the OSF Approved Inspector to maintain qualifications and/or certifications that served as the basis for OSF approval of Inspector status; B) This agreement may also be terminated by either party without penalty or obligation upon thirty-(30) days notice to the other party; C) This agreement may be terminated by OSF at anytime for cause, which includes but is not limited to violations of the law, or breach of professional standards as determined by OSF.

ACKNOWLEDGEMENT

Office of School Facilities **Date**

OSF Approved Inspector (Name) **Date**

Structural Steel Fabrication

Specify your certification

Date certification expires

Welding

Specify your certification

Date certification expires

Non-destructive Testing of Welds

Specify your certification_

Date certification expires

Steel Frame Inspection

Specify your certification

Date certification expires

High Strength Bolting

Specify your certification

Date certification expires

Reinforced Concrete

Specify your certification

Date certification expires

Prestressed Concrete – Pretension tendons

Specify your certification

Date certification expires

Prestressed Concrete – Post-tension tendons

Specify your certification

Date certification expires

Prestressed Concrete – Post-tension slabs-on-grade

Specify your certification

Date certification expires

Precast Concrete Erection

Specify your certification

Date certification expires

Masonry Construction

Specify your certification

Date certification expires

- Wood Construction
 - Specify your certification*
 - Date certification expires*
- Site Preparation
 - Specify your certification*
 - Date certification expires*
- During Fill Replacement
 - Specify your certification*
 - Date certification expires*
- Evaluation of In-place Density
 - Specify your certification*
 - Date certification expires*
- Pile Foundation
 - Specify your certification*
 - Date certification expires*
- Pier Foundation
 - Specify your certification*
 - Date certification expires*
- Wall Panels and Veneers
 - Specify your certification*
 - Date certification expires*
- Sprayed Fire-Resistant Materials
 - Specify your certification*
 - Date certification expires*
- Exterior Insulation and Finish System
 - Specify your certification*
 - Date certification expires*
- Smoke Control
 - Specify your certification*
 - Date certification expires*
- Special Cases (desirable)

9) Are you currently a registered South Carolina architect or engineer? (Please check one). Yes , No *If yes, stop here place your signature below. If no, respond to questions 9, 10, and 11.*

10) Education (check all that apply):

- High School
- Technical School/Two-Year College
- Four-Year College
- Graduate School
- Post Graduate
- Specialized Training Courses

11) Describe any relevant experience including number of years in each position and a brief description of your duties/responsibilities. (If more space is needed, please use additional paper and attach it to this document or *attach copy of resume' and certifications.*)

12) Applicant Signature: _____

A fee of \$40.00 must accompany your new and renewal application and a fee of \$25.00 must accompany a revised request. Checks should be made out to the South Carolina Department of Education.

If an application is not approved by this office the applicant will be notified in writing. Fees will not be refunded.

Please forward your application and required fee to:

Mr. John Kent
Inspection Program Coordinator
Office of School Facilities
South Carolina Department of Education
1429 Senate Street, Room 1114C
Columbia, SC 29201

APPENDIX B

SAMPLE CHAPTER 1 INSPECTION REPORTS

- 1. INSPECTION CHECKLISTS / REPORTS**
- 2. ENERGY EFFICIENCY COMPLIANCE**
- 3. INSPECTION SUMMARY REPORT BY AREA AND BUILDING**
- 4. CHAPTER 1 DISCREPANCY LOG**

CHAPTER 1 INSPECTION CHECKLIST / REPORT

Date: _____

Bldg. Name/Address: _____ Inspector: _____

Excavation/Footing/Slab Permit Card Posted Y N Property Line Identified Y N

#	Status	Description	Permit Card Posted	Explanation
1		Debris/Vegetation	1804.4	
2		Soil Conditions	1804.1	
3		Soil Compacted	1804.2	
4		Depth of Trench	1804.1	(Min. 12 in.)
5		Width of Trench	1804.4	(Min. 12 in., one story)
6		Depth of Concrete	1908.4	
7		Reinforcement	1903.5	(#4)
8		Rebar Support	1908.4	
9		Expansion Joints	1907.4	
10		Foundation Wall	1804.6	(Min. 6 in.)
11		Moisture Barrier	1909.2	
12		Seismic Ties	1804.5	
13		Slab	1909.1	(Min. 3.5 in.)
14		Form Work	1907.1	
15		Fill Compacted	1804.2	
16		Soil Treatment	2304.1	
17		Concrete Strength	1804.5	(Min. 2500)
18				
19				
20		Bond to Rebar/Steel		

OK TO POUR YES _____ NO _____

Construction Pole Service Date: _____ TAG: _____
 Permit Card Posted Y N Property Line Identified Y N

#	Status	Description	Permit Card Posted	Explanation
1		Pole Height	250-81	
2		Grounding Electrode	250-53	
3		Panel Protection	110-17	
4		GFCI	210-8	
5		Safety Systems	110-3	
6		Depth of Concrete	1908.4	

Comm Plumbing Roughin Plans on Site Y N

In ground Section _____

Date: _____

#	Status	Description	Explanation
1		Trenching/Backfill	
2		Sleeves	
3		Cleanouts/Traps/Fittings	
4		Vent Stack	
5		Water/Sewer Location	
6		Drainage System	
7		Drain Test	
8		Piping Support	
9			
10			

In Wall Section: _____ Date: _____

#	Status	Description	Explanation
1		Traps/Fittings/Valves	
2		Pipe Size/Type	
3		Piping Support	
4		Sleeves	
5		Rated Wall Penetration	
6		Supply Test	
7		Water Heater Location	
8		Insulation	
9			
10			

Above Ceiling Section: _____ Date: _____

#	Status	Description	Explanation
1		Fitting/Valves/Traps	
2		Pipe Size/Type	
3		Piping Support	
4		Ceiling/Floor Penetration	
5		Insulation	
6			
7			

Comm Electrical Roughin Plans on Site Y N

In ground Section _____

Date: _____

#	Status	Description	Explanation
1		Sleeves	
2		Conduit Support	
3		Transformer Service	
4		Data/Phone/Cable	
5			
6			
7			
8			
9			
10			

In Wall Section: _____ Date: _____

#	Status	Description	Explanation
1		Panel Location	
2		Working Clearance	
3		Receptacles/Data/Phone/Cable	
4		Conduit	
5		Gutters	
6		Draftstopping	
7		Rated Wall Penetration	
8		Wire Protection	
9		Wire Size/Type	
10			

Above Ceiling Section: _____ Date: _____

#	Status	Description	Explanation
1		J Boxes/Cable Trays	
2		Conduit Support	
3		Ceiling/Floor Penetration	
4		Lighting Drops	
5		Wire Protection	
6		Wire Size/Type	
7		Receptacles/Data/Phone/Cable	

Comm Gas Roughin Plans on Site Y N

In ground Section _____

Date: _____

#	Status	Description	Explanation
1		Piping Size/Type	
2		Piping Protection	
3		Pressure Test	
4		Fittings	
5			
6			
7			
8			
9			
10			

In Wall Section: _____ Date: _____

#	Status	Description	Explanation
1		Piping Size/Type	
2		Piping Support	
3		Piping Protection	
4		Pressure Test	
5		Fittings	
6		Shutoff Valve	
7			
8			
9			
10			

Above Ceiling Section: _____ Date: _____

#	Status	Description	Explanation
1		Piping Size/Type	
2		Piping Support	
3		Piping Protection	
4		Fittings	
5		Pressure Test	
6		Shutoff Valve	
7			

Comm Mechanical Roughin Plans on Site Y N

In ground Section _____

Date: _____

#	Status	Description	Explanation
1		Boots/Roughin Air Intake	
2		Sleeves	
3		Rated Wall Penetration	
4		Piping Duct Support	
5		Condensate Drain	
6			
7			
8			
9			
10			

In Wall Section: _____ Date: _____

#	Status	Description	Explanation
1		Service Accessibility	
2		Condensate Drain	
3		Sleeves	
4		Ceiling/Floor Penetration	
5		Piping/Duct Support	
6		Boots/Return Air Intake	
7		Disconnect	
8		Smoke Damper	
9		Suspended Ceiling	
10			

Roof Section: _____ Date: _____

#	Status	Description	Explanation
1		Service Accessibility	
2		Condensate Penetration	
3		Ceiling Penetration	
4		Disconnect	
5			
6			
7			

Comm/Framing/Beams/Girders Plans on Site Y N

#	Status	Description	Explanation
1		Steel Columns	
2		Steel Beams/Girders	
3		Steel Joists	
4		Steel Studs/Plates	
5		Steel Bracing	
6		Steel Decking	
7		Headers/Jacks	
8		Wood Studs Plates	
9		Wood Bracing	
10		Wood Columns	
11		Wood Beams/Girders	
12		Wood Joists	
13		Wood Subfloor	
14		Engineered Truss	
15		Stairs/Landing	
16		Anchors/Bolts/Ties	
17		Roof Sheathing/Deck	
18		Wall Sheating	
19		Wall Support	
20			
21			
22			

Fire Protection Section: _____ Date: _____

#	Status	Description	Explanation
1		Rated Wall Penetration	
2		Rated Doors	
3		Draftstopping	
4			
5			
6			
7			

C – Complete; NC – Not Complete; NI – Not Inspected; CR – Correction/Reinspection Required

ENERGY EFFICIENCY COMPLIANCE

As noted in Chapter 2 of this manual, energy compliance inspections and reporting is an integral part of IBC, Chapter 1 inspections. Compliance is addressed in ASHRAE Standard 90.1 which addressed the design of the building envelope, the lighting systems, HVAC systems and other energy using equipment. For the OSF Approved Inspector, the 90.1 Users Manual is the best available source of information, worksheets and checklists for the purpose of ensuring compliance with Standard 90.1. These forms cannot be reproduced here due to the copyright restrictions. However, the 90.1. Users Manual can be obtained from the American Society of Heating and Air Conditioning Engineers, Incorporated, 1791 Tullie Circle, Atlanta, Georgia 30329. The telephone number is 404-636-8400. On the net they can be reached at ashrae.org.

Specifically, we refer you to the following in the 90.1 User Manual:

1. Building Envelope Compliance Forms, pages 5-71;
2. HVAC Compliance Forms, pages 6-79 through 6-80;
3. Service Water Heating Compliance Forms; pages 7-17; and
4. Lighting Compliance Forms, pages 9-34.

CHAPTER 1 INSPECTION SUMMARY BY AREA / BUILDING

Project Name: _____ Inspector: _____	AREA / BUILDING: Initial: _____ Date: _____	AREA/BUILDING: Initial: _____ Date: _____	AREA/BUILDING: Initial: _____ Date: _____
<u>Chapter 1 Inspections</u>			
109.3.1 Footing or foundation inspection _____			
109.3.2 Concrete slab or under-floor inspection _____			
109.3.3 Lowest floor elevation _____			
109.3.4 Frame inspection _____			
109.3.5 Lath or gypsum board inspection _____			
109.3.6 Fire-resistant penetrations _____			
109.3.7 Energy efficiency inspections envelope _____			
Energy efficiency inspections – HVAC _____			
Energy efficiency inspections – SWH _____			
Energy efficiency inspections – Electrical _____			
909.3 Special inspection and test requirements _____			
 Mechanical inspection: M107.1			
1. Underground inspection _____			
2. Rough-in inspection _____			
 Plumbing Code: P107.1			
1. Underground inspection _____			
2. Rough-in inspection _____			
 Electrical Code:			
1. Underground inspection _____			
2. Rough-in inspection _____			

APPENDIX C

SAMPLE CHAPTER 17 INSPECTION REPORTS

- 1. Special Inspection Daily Report**
- 2. Special Inspection Weekly Report**
- 3. Special Inspection Completion Report**
- 4. Special Inspection Requirement Summary**
- 5. Chapter 17 Discrepancy Log**
- 7. Special Inspection Final Reports**
 - a) For Special Inspectors**
 - b) For Design Professionals**

SPECIAL INSPECTION DAILY REPORT

Project Name _____ Date: _____

Project Address: _____ Control #: _____

Indicate the items inspected and/or tested:

REINFORCED CONCRETE

- Placement of Concrete
- Testing of Concrete
- Reinforcing Steel Placement
- Bolts Installed in Concrete
- Prestress or Post-Tension Concrete

SOILS AND FOUNDATIONS

- Verification of Soils
- Excavation
- Structural Fill
- Drilled Piers, Piles,
- Detention Basin
- Earth Retaining Structure

STRUCTURAL MASONRY

- Inspection of Rebar Placement/Grouting
- Mortar and Grout Testing Wall Prisms

WOOD CONSTRUCTION

- Prefabricated structural elements
- Site-built structural assemblies
- High-load diaphragms

SEISMIC

- Ceilings
- Mechanical
- Electrical
- Plumbing

STRUCTURAL STEEL

- High Strength Bolting
- Welding of Structural Steel
- Metal Deck Welding
- Shear Stud Welding
- Welding of Reinforcing Steel
- Steel Frame Inspection

SPRAYED FIRE RESISTANT MATERIALS

- Placement Inspection
- Density Tests
- Thickness Tests

PRECAST CONCRETE

- Inspection of Erected Panels
- Welding of Panel Connections

INSPECTION OF FABRICATORS

- Metal Building Structural Steel
- Precast Concrete

WALL PANELS AND VENEERS

- Interior Panels
- Exterior Veneer

SPECIAL

- Smoke Control
- EIFS

SPECIAL: Smoke Control EIFS Seismic Resistance Suspended Ceilings

OTHER: _____

Were there any discrepancies with the reviewed plans? Yes No

Were there any changes to the reviewed plans? Yes No

Were any previously listed items corrected or resolved? Yes No

If yes, describe: _____

Special Inspections Agency: _____

Inspector: _____ Signature: _____
(Print)

Certification No.: _____

Time Beginning Inspection: _____ Time Ending Inspection: _____

*Attach additional inspection reports if necessary.

SPECIAL INSPECTION WEEKLY REPORT

Project Address: _____ Control #: _____

Project Name: _____

Company Name: _____

This report covers work done between _____ and _____

This is to certify that I inspected and/or tested the following items in accordance with Section 1704, 1707, and 2506.2.1 of the International Building Code: (Check appropriate items)

None - Work Has Not Started

Placement of Reinforced Concrete Testing of Reinforced Concrete Placement of

Reinforcing Steel Placement of Prestressing Steel Post-Tension Concrete

Bolts Installed in Concrete Verification of Soils

Excavation and Filling

Drilled Piers and/or Piles, Earth-Retaining Structure ELFS

Smoke Control Seismic

Other: _____

Except where noted in the attached report, the work was found to be in substantial compliance with the approved plans, specifications, and applicable provisions of the special inspection plan.

Signed: _____ Date: _____

Submit To:

cc: Engineer or Architect of Record and the General Contractor

* Attach additional inspection reports if necessary.

Page ____ of ____

SPECIAL INSPECTION COMPLETION REPORT

Project Name: _____ Date: _____

Project Address: _____ Control #: _____

Indicate the items inspected and/or tested:

REINFORCED CONCRETE

- Placement of Concrete
- Testing of Concrete
- Reinforcing Steel Placement
- Bolts Installed in Concrete
- Prestress or Post-Tension Concrete

SOILS AND FOUNDATIONS

- Verification of Soils
- Excavation
- Structural Fill
- Drilled Piers, Piles,
- Detention Basin
- Earth Retaining Structure

STRUCTURAL MASONRY

- Inspection of Rebar Placement/Grouting
- Mortar and Grout Testing Wall Prisms

WOOD CONSTRUCTION

- Prefabricated structural elements
- Site-built structural assemblies
- High-load diaphragms

SEISMIC

- Ceilings
- Mechanical
- Electrical
- Plumbing

STRUCTURAL STEEL

- High Strength Bolting
- Welding of Structural Steel
- Metal Deck Welding
- Shear Stud Welding
- Welding of Reinforcing Steel
- Steel Frame Inspection

SPRAYED FIRE RESISTANT MATERIALS

- Placement Inspection
- Density Tests
- Thickness Tests

PRECAST CONCRETE

- Inspection of Erected Panels
- Welding of Panel Connections

INSPECTION OF FABRICATORS

- Metal Building Structural Steel
- Precast Concrete

WALL PANELS AND VENEERS

- Interior Panels
- Exterior Veneer

SPECIAL

- Smoke Control
- EIFS

SPECIAL: Smoke Control EIFS

OTHER: _____

The work identified above is complete and to the best of my knowledge was found to be in substantial compliance with the approved plans, specifications, and applicable provisions of the special inspection plan.

Special Inspections Agency: _____

Inspector: _____

(Print Name)

Signature: _____

Certification No.: _____

*Attach additional inspection reports if necessary.

REQUIRED SPECIAL INSPECTIONS

Project _____

INSPECTION ITEMS	CONTINUOUS	PERIODIC	NAME OF SPECIAL INSPECTOR	SPECIAL INSPECTOR CERTIFICATION NO.	AGENCY
REINFORCED CONCRETE (RC)					
PRETENSION TENDONS (PC1)					
POST-TENSION TENDONS (PC2)					
POST-TENSION SLABS-ON-GROUND (PTS)					
WELDING (SW)					
NONDESTRUCTIVE TESTING (SN/) MT, PT, UT or RT					
HIGH-STRENGTH BOLTING (SS)					
STEEL FRAMES (SS)					
STRUCTURAL MASONRY (SM)					
SPRAYED FIRE-RESISTANT MATERIAL (FP)					
PILING & DRILLED PIERS (PDP)					
VERIFICATION OF SOILS (VS)					
MODULAR RETAINING WALLS (MRW)					
PRECAST CONCRETE ERECTION (PCE)					
EXTERIOR INSULATION & FINISH SYSTEM (EIF)					
SMOKE CONTROL (SC)					
SEISMIC RESISTANCE (SR) VERIFY CONTRACTOR RESPONSIBILITIES, SUSPENDED CEILINGS, MECHANICAL, ELECTRICAL, PLUMBING					
DETENTION BASIN (DB)					
SPECIAL CASES (XX)					
WOOD CONSTRUCTION					
WALL PANELS AND VENEERS					

AOR/EOR: _____ DATE: _____ SEAL: _____

Final Report of Special Inspections – Special Inspector

Agent's Final Report

Project: _____

Location: _____

Owner: _____

Agent: _____

Special Inspector: _____

To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Agent in the *Statement of Special Inspections* submitted for plan approval, have been performed and all discovered discrepancies have been reported and resolved.

Comments:

(Attach continuation sheets if required to complete the description of corrections.)

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Agent of Special Inspector

(Type or Print Name)

Signature

Date

Final Report of Special Inspections – Design Professional

Project: _____

Location: _____

Owner: _____

Architect of Record: _____

Engineer of Record:

Structural: _____

Mechanical: _____

Electrical: _____

Plumbing: _____

To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for plan approval, have been performed and all discovered discrepancies, as set forth below, have been reported and resolved.

Comments:

(Attach continuation sheets if required to complete the description of corrections.)

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Design Professional

(Type or Print Name)

Signature

Date