City of Salem, Virgina Guide to Special Inspections and Quality Assurance

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VCC 2015 Ed.

Guideline for Architects, Engineers, Owners, Developers and Builders

City of Salem, Virginia
Community Development
Building Inspections
21 South Bruffey Street, Salem, VA 24153
540.375.3032
www.salemva.gov

Special thanks to:

FOREWORD

This document provides interested parties with guidance on the administration and implementation of the special inspection requirements of Virginia Construction Code (VCC) Chapter 17, 2015 edition, as adopted by the Virginia Uniform Statewide Building Code (VUSBC). This guidance is based on "recommended practices and the consensus of building officials, design professionals, and inspection and testing agencies…"(ICC). The duties herein describe responsibilities for all parties involved including the building official, special inspector(s), project owner, registered design professional(s) in responsible charge (i.e., architect(s) and/or engineer(s) of record), and the contractor(s).

Previously in years past, special inspection tasks may have not been mandated and were often optional for the project owner or design professionals for critical or high-profile projects. As technology and construction means and methods advance, it has become imperative that certain areas of construction and systems identified as essential for building and life safety are verified during field erection and installation by qualified individuals. As such, special inspection requirements have evolved into the building code mandates now established in the *Virginia Construction Code, 2015 edition,* as adopted by the VUSBC. Under the VCC, special inspection activities are not optional, **they are mandated**. The conditions in which special inspections must be performed is clearly stated in VCC section 1704. At times, work of a minor nature is permitted to be exempted from Special Inspection requirements under the discretion of the City of Salem Building Official.

The guidelines set forth in this document intend to ensure that the process of construction and regulated special inspections conform to the minimum code requirements, and can be used during the design phase, permitting process, and at the construction site to properly implement the procedures needed for successful application of the special inspection program. Projects in which a well thought-out special inspection program is executed with qualified firms or individuals employed as special inspectors "should experience a significant improvement in the quality of construction…" (CASE)

This document is based on several other published guidelines as shown in the reference documents section of this guideline. This document presents the best-management practices for City of Salem as researched through these other documents; as such the CASE documents are referenced heavily throughout this guide. **These guidelines present the preferred means and methods to manage a successful special inspection program for any give project; they are not considered mandated, unless actually required by the Virginia Construction Code**. Any suggestions for improvement and reduction or expansion to this document are welcome.

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Introduction

Purpose

Building codes have intended to regulate testing and inspection of building components for many years. It is only in more recent time that special inspection requirements have been codified in the model building codes. These requirements are intended to provide a higher level of scrutiny for aspects of construction that, upon failure, would cause a significant threat to the safety of the building occupants. These aspects of construction include steel construction, concrete construction, masonry construction, wood construction, soils, driven deep foundations, cast-in-place deep foundations, helical pile foundations, fabricated items, wind resistance, seismic resistance, sprayed fire-resistant materials, mastic and intumescent fire-resistant coatings, exterior insulation and finish systems (EIFS), smoke control and other critical mechanical and electrical systems as detailed in the Virginia Construction Code (IBC).

The Virginia Construction Code (VCC) requires that special inspections be performed in accordance with chapter 17 of the IBC, under the supervision of the registered design professional as stated in VCC section 1704.2. The provisions of special inspections should not be construed as third party inspectors permitted by VCC section 1704.2 which are covered under separate policy (*see **Third Party Inspections** policy)*, but are provided as an addition to the required routine inspections of the City of Salem Community Development in accordance with VCC section 1704. The requirements of the VCC intend for a highly qualified expert to be in responsible charge of the inspection and testing of the identified elements and components. This includes the standard for experience and qualifications needed to control the work being performed, duties of the special inspector(s), reporting requirements and oversight from City of Salem Building Official.

This procedure is intended to safeguard public safety, quality of installations and general welfare through structural strength and design conformance standards by:

1. Clearly defining the responsibility of all parties involved in the special inspection process,
2. Standardizing the necessary qualifications required for special inspectors and laboratories
3. Applying the special inspection provisions of the VCC uniformly and consistently for all projects in City of Salem.

Background

There were numerous structural failures that occurred in the United States in the late 1970's and early 1980's that resulted in personal tragedy and large loss of property costs. Most notably was the 1981 collapse of the Hyatt Regency walkway in Kansas City, often called the "worst structural failure in US history" (Salvadori) causing the toll of deaths to 114 and over 200 injured individuals. Following this collapse the US House of Representatives Subcommittee on

Investigations and Oversight, chaired by Albert Gore Jr., held investigative hearings to examine the causes of structural failures. In 1984, this committee issued the report titled *Structural Failures in Public Facilities, House Report 98-621* was presented to the 98th Congress.

The central issue addressed by the Subcommittee was: *"Are there common problems associated with structural failures, the elimination of which would decrease the number of failures?"* Over 20 contributing factors were identified, with 2 common problems felt to be the most critical:

- The need for improved organization on construction projects and better communication between participants.

- The need for construction inspection by the Structural Engineer of Record (SER) during the construction of principal structural components.

The Subcommittee found that *"For a variety of reasons, the structural engineer of record or his designee is often not present on the job site during the construction of principal structural components.*
The absence of the structural engineer has permitted flaws and changes on site to go unnoticed and uncorrected."

The Subcommittee recommended that *"Professional organizations, such as the Building Officials and Code Administrators International (BOCA), the International Conference of Building Officials (ICBO), and the Southern Building Code Conference International (SBCCI), should make every effort to ensure that provisions are written into building codes and adopted in public forum which make the on-site presence of the structural engineer mandatory during the construction of structural components on public facilities."*

The current requirements for Special Inspections and Quality Assurance are adopted by reference through the Virginia Construction Code. Virginia has adopted the *2015 International Building Code* and all associated referenced codes and standards. The *International Building Code (IBC)* was first published in 2000. The code merged provisions from the 3 model building codes that preceded it, the *BOCA National Building Code*, the *ICBO Uniform Building Code (UBC)* and the *SBCCI Standard Building Code (SBC).*

Definitions and Abbreviations

Words and abbreviations used in this document shall have a meaning as defined in the VCC and the IBC. Unless otherwise expressly stated, other words and terms shall have the meaning shown in this procedure. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

Definitions

Agents of Special Inspector (Agents)*.* Qualified individuals or agencies working under the direction of the SI who are providing the inspections and tests necessary to complete the special inspection process

Approved. See IBC-202

Approved agency*.* See IBC-1702.1

Approved documents. Includes building construction documents as approved by the municipality including all approved revisions; and also Fabrication and erection documents as approved by municipality including all approved revisions

Approved fabricator. See IBC-1702.1

Architect of Record (AR*).* The registered design professional (RDP**)** retained by the Owner to design or specify architectural construction in accordance with the USBC and whose signature and seal appears on the approved architectural construction documents

Building. See VCC-202

Building Official. The local government authority charged with the administration and enforcement of the VVCC. This shall include any duly authorized technical assistant as specified in the VVCC.

Construction documents. See IBC-202

Contractor. A general contractor (GC) licensed in the Commonwealth of Virginia (See Commonwealth of Virginia, Title 54.1)

Discrepancy. An inspection or test result that is inconsistent or does not comply with the approved construction documents or the VCC.

Fabrication item*.* See IBC-1702.1

Fabrication and erection documents*.* All of the written, graphic, and pictorial documents prepared or assembled after issuance of a building permit and in addition to the municipality approved construction documents, describing the design, location, and physical characteristics of the building components or materials necessary for fabrication, assembly, or erection of the elements of the project. (Examples would include, but are not limited to, concrete reinforcing shop drawings, steel fabrication and erection shop drawings, and metal building fabrication and erection shop drawings.)

Final Report of Special Inspections**.** A certification by the special inspector which shall indicate that all construction elements subject to special inspections as identified by the jurisdiction approved Statement of Special Inspections (SSI) for all materials or phases of construction have been inspected prior to concealment, and in the special inspector's professional opinion and knowledge, the construction project complies with jurisdiction's approved Construction Documents

Geotechnical Engineer of Record (GER). An RDP retained by the Owner to provide earthwork and foundation recommendations in accordance with the VCC, and whose seal and signature appear on the jurisdiction approved geotechnical report

Inspection. The continuous or periodic observation of work and the performance of tests for certain building or structural components to establish conformance with jurisdiction approved documents as required by the VCC and the IBC

Inspection certificate*.* See IBC 202

Inspection and testing agency*.* An established and recognized agency or agencies, meeting the general requirements of ASTM E 329 and accredited, retained by the Owner, independent of the contractors performing the work subject to special inspections, to perform special inspections and materials testing required by the VCC and the IBC. See IBC-1703.1 Approved agency

Owner. See VCC-202

Pre-engineered structural elements. Structural elements specified by the SER but which may be designed by a specialty RDP. (Examples are items such as open web steel joists and joist girders; wood trusses; combination wood, metal and plywood joists; pre-cast concrete elements; prefabricated wood or metal buildings; tilt-up concrete panel reinforcement and lifting hardware.)

Primary structural system. The combination of elements which serve to laterally brace and support the weight of the building's structural shell, the applicable live loads based upon use and occupancy, wind, snow, ice, thermal and seismic environmental loads

Registered Design Professional (RDP). See VCC-202

Registered Design Professional(s) in Responsible Charge. The RDP whose professional seal and signature appears on the construction documents that require special inspection(s)

Special Inspection, continuous and periodic**.** See IBC-202

Spray-Applied Fire-Resistant Materials (SFRM). See IBC-202

***Structural observation*.** See IBC-202

Shall. This term indicates mandatory requirements

Special Inspector (SI). The Special Inspector (SI), also referred to in this Guideline as the Special Inspection Coordinator, is the individual or firm responsible for managing and coordinating the inspection and testing program who is directly responsible for special inspections, materials testing and related services as described in the approved SSI. The SI shall be retained by the Owner, independent of the contractors performing the work subject to special inspection. The SI must be approved by the RDP responsible for the design and the building official

Statement of Special Inspections (SSI). The SSI is a statement prepared by an RDP and shall be approved by the appropriate RDP(s) of Record and submitted by the permit applicant. The SSI includes the scope (schedule) of the special inspection services applicable to a construction project, and the RDPs and inspection and testing agencies that will provide those services. **The SSI is required as a condition for permit issuance in accordance with IBC as amended by USBC and must be approved by the building official**

Structural Engineer of Record (SER). The RDP retained by the Owner to design or specify structural documents in accordance with the USBC, and whose signature and seal appear on the jurisdiction approved structural construction documents

***Structure*.** See VCC-202

Abbreviations

ACI	ACI International (American Concrete Institute)
AISC	American Institute of Steel Construction, Inc
AISI	American Iron and Steel Institute
AR	Architect of Record
ASCE	American Society of Civil Engineers
ASNT	American Society for Non-Destructive Testing
ASTM	American Society for Testing and Materials
AWS	American Welding Society
BIA	Brick Industry Association
CASE	Council of American Structural Engineers
CM	Construction Manager (Project Manager)
CO	Certificate of Occupancy
DB	Design-Builder
EDI	Exterior Design Institute
EIFS	Exterior Insulation and Finish Systems
GC	General Contractor
IBC	ICC 2012 International Building Code, as incorporated by VCC (2015)
ICC	International Code Council, Inc.
NCMA	National Concrete Masonry Association
NEC	NFPA 70-99 National Electrical Code
NFPA	National Fire Protection Association
NICET	National Institute for Certification in Engineering Technologies The
MEPR	Mechanical/Electrical/Plumbing Engineer of Record
OSHA	U.S. Dept. of Labor Occupational Safety & Health Administration Portland
PCA	Cement Association
PCI	Pre-cast /Pre-stressed Concrete Institute
PTI	Post-Tensioning Institute
RDP	Registered Design Professional
SDI	Steel Deck Institute
SER	Structural Engineer of Record
SFRM	Spray-Applied Fire Resistant Material
SJI	Steel Joist Institute
SSI	Statement of Special Inspections
TMS	The Masonry Society
TPI	Truss Plate Institute
VOSHA	Virginia Occupational Safety and Health Administration
VCC	Virginia Construction Code (2015) effective September 4, 2018

Special inspections of building elements and components may be required by:
- The VCC 1704.1 and the IBC Chapter 17; or
- The Code of Virginia § 54.1-402; or
- The building's structural frame design or foundation design by the **SER** and/or **GER**; or
- The soil classification under the building's foundations by the **GER**; or
- The building's seismic design category, wind exposure category or classification as an "essential facility"; or
- The alteration of an existing building's structural frame, foundations, or other items listed above; or
- The Owner

The IBC requires special inspections potentially involving structural, civil/site, mechanical, electrical, plumbing and architectural design disciplines. A special inspections program can be prepared and implemented in various ways and still achieve the Code intent. Common approaches include:

1. Within a given design discipline (eg. structural), assigning separate special inspectors or testing agencies to different construction materials or processes without a coordinator managing the program within that given design discipline. Each inspector or agency is retained individually by the Owner (or Owner's agent) and is independently responsible for their specific portions of the program.

2. Assigning one overall special inspector/coordinator to manage the project's entire special inspection program, involving all design disciplines.

3. Assigning a separate special inspector coordinator for each design discipline to manage the inspection and testing efforts within the given discipline.

It is recognized that the majority of projects that occur in the Roanoke Valley and the construction profession nationwide follow the second approach, and as such City of Salem Building Inspection believes that the second approach is generally the most practical for most building projects. Therefore, this Guideline focuses on having a single entity coordinate the Special Inspection and Testing Program. This guideline will discuss the value and need of overall coordination of a special inspection program for any given project.

Special Inspection Coordinator

The **Special Inspector (SI)**, also referred to in this Guideline as the **Special Inspection Coordinator**, is the individual or firm responsible for managing and coordinating the inspection and testing program. The SI serves as an agent of the Owner, but is responsible to and reports to the Building Official; as noted in other places throughout this guideline, it is recommended that the Structural Engineer of Record (SER) serve as the SI whenever possible and/or prudent to do so.

The interests of the public, clients, and the AE community are best served when materials and workmanship critical to the structural integrity of structures are monitored through the Special Inspections process by the Structural Engineer of Record (SER).

The extensive on-site presence of the SER through the Special Inspections process is the best means to protect the public, control claims and losses, and improve quality of the completed project. The SER is the only member of the design team with the expertise and intimate knowledge of a particular building's Structural System and, therefore, is the best qualified to recognize and respond to site conditions that require the application of structural engineering judgment. As the Special Inspector, the SER is able to communicate required corrections or Owner-directed changes before they are built into the structure, provide prompt responses to contractor's field questions, expedite corrective measures to address contractor errors, help build and maintain team communication and working relationships with the contractor, and minimize misinterpretation of the structural design intent. The SER should serve as the Special Inspector wherever possible and practical.

The SI will often perform many of the required inspections and tests. The SI submits interim reports to the Contractor, Owner, Building Official, and to appropriate Registered Design Professional. Individual Agents may be retained by the Owner or the SI, but they are responsible to the SI. The Agents who are responsible for conducting tests or inspections shall be identified in the SSI that is submitted to the Building Official. Please note the role of the sub-agents that are responsible to report to the SI:

Inspector Agent

The **Inspector Agent(s)** are firm(s) or individual(s) responsible for performing specific inspections as part of the Special Inspections program. At the completion of the required inspections, the Inspector Agent(s) submits final report to the SI.

Testing Agent

The **Testing Agent(s)** are firms responsible for performing specific tests as part for the Special Inspection program. At the completion of the required inspections, the Inspector Agent(s) submits final report to the SI.

The SI has no control over the Contractor’s means and methods of construction and does not have the authority to stop the work; in addition the SI is not responsible for the construction site safety and is not required to inspect the work for compliance with OSHA or VOSHA standards and regulations. The SI’s role is to verify construction compliance with the Construction Documents, as supplemented by shop drawings and/or other submittals. All discrepancies shall be brought to the attention of the Contractor so that corrective action can take place. The SI shall report deviations from the approved Construction documents to the appropriate RDP of Record for their resolution. Uncorrected work shall be reported to the Building Official and the appropriate RDP of Record. It is recommended that the SI develop a master list of discrepancies for any given project (preferably electronic) that can be reviewed by all project team members at any given time throughout the project.

Upon completion of all required special inspections, the SI shall report to the Registered Design Professional (RDP) in Responsible Charge that all items were fulfilled and reported, to the best of their knowledge in conformance with the approved plans. Items not in conformance, unresolved items, or any discrepancies in inspection coverage (i.e., missed inspections, periodic inspection when continuous was required, etc.) should be specifically itemized in this report.

Registered Design Professional

The **Registered Design Professional (RDP) in Responsible Charge** of the project(s) shall be responsible for informing the Owner of the need to provide Special Inspections and for assisting the Owner as may be needed to retain the services of an SI. The RDP shall complete an SSI that shall include the SI and Agent(s). The RDP shall also be responsible for supplying the SI with necessary copies of current appropriate Construction Documents and approved shop drawing submittals, fabrication, and erection documents including those revisions and change orders affecting work to be inspected or tested. It shall also be the responsibility of the RDP to review and act upon conditions noted in the interim special inspection reports. Please note the following sub-classifications of an RDP that may or may not be an active part of any given project:

Structural Engineer of Record

The **Structural Engineer of Record (SER)** is the Registered Design Professional (RDP) in Responsible Charge of the structural system. The SER is responsible for preparing the *Statement of Special Inspections* (SSI) for the structural elements subject to inspection and testing. The SER should review inspection and testing reports pertaining to the structural system and take appropriate actions when deficiencies are identified.

The SER will often serve as the Special Inspection Coordinator (SI) and perform many of the structural inspections. Special Inspection services are not a part of the SER's basic construction phase services such as shop drawing review and structural observation. Special Inspection services should generally be performed under a separate contract directly with the building Owner.

Architect of Record

The **Architect of Record (AR)** is the Registered Design Professional (RDP) in Responsible Charge of the architectural building elements and is often the Prime Design Professional for "typical" building projects. The Architect is responsible for preparing a *Statement of Special Inspections* (SSI) for the architectural components such as EIFS systems or veneers.

The Architect, when serving as the Prime Design Professional, must inform the building owner of the Special Inspection requirements and assist the Owner in engaging one or more qualified Special Inspectors, inspectors and testing agencies. The Prime Design Professional is responsible for confirming that each Registered Design Professional prepares an SSI for their individual building systems.

Mechanical / Electrical / Plumbing Engineer of Record

The **Mechanical / Electrical / Plumbing Engineers of Record (MEPR)** are the Registered Design Professionals (RDP) in Responsible Charge of the HVAC systems, electrical systems, fire protection systems and plumbing systems. The MEP's are responsible for preparing their own portions of the *Statement of Special Inspections* (SSI) for the MEP systems such as smoke control systems, emergency power systems or piping containing hazardous materials.

At the conclusion of the construction, the Registered Design Professional (RDP) in Responsible Charge is required to submit a *Final Report of Special Inspections (FRSI)* certifying that all of the required inspections and tests have been completed and that all identified deficiencies have been corrected or resolved. See role responsibilities for SI assurance requirements to Registered Design Professional (RDP) in Responsible Charge prior to submission of *FRSI*.

Contractor

The Building **Contractor**, either a General Contractor (GC), Design-Builder (DB), or Construction Manager (CM), is responsible for the construction of the project in accordance with the Construction Documents and the VCC; this would include the coordination and direction of all subcontractors, fabricators and material suppliers.

The Contractor is responsible for means and methods of construction as well as for construction site safety. The Contractor is responsible for scheduling inspections and tests. Sufficient notice and lead time must be allowed for the inspection and testing to be performed without impeding the construction operations. The Contractor must cooperate with the inspection and testing agencies. When deficiencies are identified, the Contractor must take corrective actions to comply with the contract documents or remedy the deficiencies as directed by the Registered Design Professional. The Contractor is responsible for testing services that are required for material submittals and are not part of the Special Inspection program, such as aggregate tests, concrete mix designs, testing of controlled fill materials, etc. The Contractor is the primary person or firm responsible for compliance with OSHA and VOSHA standards and regulations Safe access must be provided to allow inspections and tests to be performed. This may require the Contractor to provide scaffolding, ladders, or lifts.

The contractual responsibility of a Construction Manager (CM) can vary widely, therefore it is important to define the CM's role and responsibility relative to special inspection. The Contractor is responsible for completing the construction work in compliance with the Contract Documents and the Building Code. The Special Inspection and Quality Assurance program does not relieve the Contractor of his or her responsibility to perform Quality Control.

Building Official

The **City of Salem Building Official** also referred to in this guideline as the Building Official or Authority Having Jurisdiction is the individual responsible for enforcing the Virginia Construction Code (VCC) and the issuance of a building permit(s) and a Certificate of Occupancy. Of all the team members involved in the construction process, the building official is the only one with the legal authority to enforce the special inspection provisions of the VCC. Prior to issuance of a building permit the Building Official will review and approve the Construction Documents, the SSI, and the qualifications of the SI and the Agents in accordance with IBC section 1704.2.1.

The Building Official shall review field reports of special inspections as directed by these guidelines and procedures. The Building Official has the authority to issue a stop work order if it is found that the approved special inspectors or laboratories are not being utilized to perform required special inspections; in addition it is the prerogative of the Building Official to not approve a certain inspection prior to a certain special inspection discrepancy(s) to be resolved. The Certificate of Occupancy (CO) shall be issued only after the Building Official has received and approved the *Final Report of Special Inspections (FRSI)*.

Owner

The **Owner** is responsible for engaging the Special Inspector (Coordinator), Inspectors, and Testing Agencies. The Owner is responsible for all fees and costs related to the performance of the Special Inspection services. The Owner or their authorized agent shall sign the SSI.

Qualifications

In preparing the SSI, the RDP should specify the required credentials for the individuals performing specific inspections or tests. These requirements will vary depending on the complexity of the project.

In the attached *Statement of Special Inspections (SSI)*, there are some references to Agency/Personnel qualifications that are already listed; these are considered to be a minimum by the Building Official, unless otherwise specifically approved. A Registered Design Professional (RDP) is considered to meet any of the minimum certification requirements listed above. The following is a discussion of some of the credentials and certifications that should be considered for the Special Inspector, Testing Agent and Fabricator.

Special Inspector (Coordinator & Agents)

Engineering licensure: Engineering education and experience is a valuable prerequisite for performing inspections that require judgment in interpreting the Construction Documents and determining if the work conforms to the design intent.

Professional Engineering (PE) registration with a specialty in Structural Engineering or Geotechnical Engineering is a commonly specified credential for the inspection of critical structural and foundation elements. Fire Protection or Mechanical Engineering registration is required for smoke control commissioning.

Engineer-in-Training (EIT) registration can be specified for inspections that can be performed by an engineer who has not yet attained PE licensure, generally under the supervision of a PE.

American Concrete Institute (ACI): There are several certification programs for concrete testing technicians and inspectors.

Concrete Field Testing Technician – Grade 1 is a certification for technicians who perform the field tests of concrete. The tests include concrete sampling, casting compression test cylinders, testing temperature, slump, air content and unit weight.

Concrete Construction Inspector is a certification for inspectors who inspect reinforcing steel placement, concrete placement, batching, curing and protection.

Laboratory Testing Technician – Grade 1 or 2 and *Strength Testing Technician* are certifications for laboratory testing technicians.

American Welding Society (AWS): Certification programs include the inspection of welding and structural steel.

Certified Welding Inspector (CWI) is a certification for technicians performing visual inspection of welds.

Certified Structural Steel Inspector is a new certification program that is a joint effort of AWS and AISC.

American Society of Non-Destructive Testing (ASNT):
Non-Destructive Testing Technician – Level II or III is a certification for technicians performing nondestructive testing of welds such as ultrasonic testing.

International Code Council (ICC): Originally an ICBO certification program for Special Inspectors, the program includes the following certifications:

Structural Masonry Special Inspector
Structural Steel and Welding Special Inspector
Spray-Applied Fireproofing Special Inspector
Prestressed Concrete Special Inspector
Reinforced Concrete Special Inspector

National Institute for Certification Engineering Technologies (NICET):
Certification programs are oriented towards the testing of materials for highway and transportation structures. Each certification has four levels.

Concrete Technician – Levels I, II, III and IV
Soils Technician – Levels I, II, III and IV
Geotechnical Engineering Technician – Levels I, II, III and IV

Exterior Design Institute (EDI):
EIFS Third Party Inspector certification covers forensic and construction inspection of Exterior Insulation and Finish Systems

Testing Laboratory Agent

Industry depends on reliable assessment of testing and calibration laboratories, inspection agencies and fabricator inspection programs. Accurate test, calibration and inspection results are vital for the protection of public health and safety and to facilitate trade. All laboratory facilities employed to perform test shall be operated under the direct supervision of an RDP and shall meet the general requirements of ASTM E329. Written documentation shall be provided to the building official of the applicable Agency's laboratory accreditation and/or special inspection personnel qualification(s) and certification(s).

Fabricator Shop Inspections

Where structural elements or assemblies are fabricated off site, such as structural steel, pre-engineered metal buildings, pre-cast concrete or prefabricated wood trusses, inspections are required to be performed in the fabricator's shop. The IBC requires that the Special Inspector review the fabricator's quality control procedures. The Code does not specifically state that inspection of the structural elements being fabricated is required, however this is generally understood as the intent. The emphasis of shop inspections should be on inspecting the quality of the fabricator's work rather than his means and methods of operation.

A fabricator is **exempt from shop inspections when approved by the Building Official**. Fabricators that are certified by industry organizations **such as, but not limited to,** the American Institute of Steel Construction (AISC) or the Pre-cast Concrete Institute (PCI) are considered exempt. It is also permissible to be an exempt fabricator if ICC International Accreditation Services IAS has published an Evaluation Service Report on the fabricator in question. Fabricators that do not fall into one of these two broad categories can be reviewed on a case-by-case basis to determine whether the City of Salem Office of Building Safety determines the fabricator to be exempt from Special Inspector (SI) approval. When a fabricator has been approved, it is common practice for no inspections to be performed in the shop. Approved fabricators are required to submit a *Fabricator's Certificate of Compliance* at the completion of fabrication, per IBC section 17.2.5.2. See Appendix E for a standard form that is to be used for obtaining this certification.

Conflicts of Interest

It is still common practice in some areas for the Contractor to hire an inspector and testing agency to perform special inspections and structural testing. This practice is not in the public interest and constitutes a **conflict of interest**. The VCC and IBC require inspectors and testing agencies to be engaged by the Owner or the Owner's agent and not by the Contractor, per sections 1703.1.1 and 1704.1. This clearly avoids the conflict of interest on a traditional Design-Bid-Build project. There are some projects where the Owner is also the Contractor and a potential conflict of interest may be unavoidable. Inspectors and testing agencies are required to disclose to the Building Official any potential conflicts of interest. Even if an inspector is hired directly by the Owner for a particular project, that same inspector could be working for the project's Contractor on a different project. This represents a potential conflict of interest and should be disclosed.

Special Inspection Requirements

When Required

The USBC requires special inspections be made in accordance with the requirements of the IBC. The requirements for special inspections shall be determined prior to and are requisite for issuance of the building permit.

Special inspections are required for building components identified in the IBC when the design of these components is required to be performed by a professional engineer or architect. (See attached CHART A in Appendix F which is taken from § 54.1 – 402 of the Code of Virginia.)

Special inspections are not required:

- For work of a minor nature or as warranted by conditions in the jurisdiction as approved by the building official.
- Unless otherwise required by the building official, for occupancies in Groups R-3, R-4 or R-5 and occupancies in Group U that are accessory to a residential occupancy.

Note: The list cited below is not intended to be exhaustive list of the requirements of IBC Chapter 17. Check the specific requirements for each component of a building or structure listed in IBC Chapter 17 to determine if the exceptions to the requirement for special inspections of that component are applicable.

Required Inspections

1. Inspection of fabricators – where fabrication of structural load-bearing members and assemblies are being performed on the premises of the fabricator. Note the exception for approved fabricators. See Section 1704.2. Note Exception added 2012 for: cold formed steel light frame construction built per 2211.7 (perscriptive design)

2. Steel construction – See Table 1705.2.2 for detailed information regarding inspections, IBC references and other referenced standards.

Sub-areas under steel construction are:

- Material verification of high-strength and slip-critical bolts, nuts and washers
- Inspection of high-strength and slip-critical bolting
- Material verification of weld filler materials
- Material verification of structural steel
- Inspection of welding for both structural steel and reinforcing steel
- Inspection of steel frame joint details for compliance with approved construction documents

Note Exceptions 1 and 2 listed in Section 1704.3 discussing steel fabrication without heating operations of any kind and continuous and periodic inspection of certain welding operations.

3. Wind Requirements - See section 1704.3.3. In high wind regions identified in 1705.10 statement of inspections shall identify:

- Main windforce resisting system
- Wind re-inforcing components

4. Concrete construction – See Table 1705.3 for detailed information regarding inspections.
Sub-areas under concrete construction (see Section 1705.3) are:
• Formwork inspection for shape, location and dimensions of the concrete member being formed.
• Reinforcing steel, including pre-stressing tendons and placement
• Bolts to be installed in concrete prior to and during placement of concrete
• Verifying use of required design mix
• Sampling fresh concrete and performing slump, air content and fresh concrete temperature at time of making specimens for strength tests
• Proper application techniques for concrete and shotcrete placement
• Maintaining specified curing temperature and techniques
• Pre-stressed concrete, including application of pre-stressing forces and grouting of bonded pre-stressing tendons
• Erection of pre-cast concrete members
• Verifying in-situ concrete strength prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs
Note Exceptions 1, 2, 3, 4 and 5 in Section 1704 discussing footings for buildings three stories or less, nonstructural slabs, foundations and certain exterior concrete features when placed on grade. Be aware of criteria allowing use of these exceptions.

5. Masonry construction – Tables 1704.5.1 and 1704.5.3 show detailed information regarding Level 1 and Level 2 special inspections for masonry construction and whether continuous or period inspection is required.
Sub-areas under masonry construction (see Section 1705.4) are:
• Verification of site-prepared mortar, construction of mortar joints and locations of reinforcement and connectors
• Verification of size and location of structural elements, type, size and location of anchors including details of anchorage of masonry to structural members, frames or other construction
• Verification of specified size, grade and type of reinforcement
• Verifying welding of reinforcing bars
• Verifying protection of masonry during cold or hot weather
• Verifying prior to grouting to ensure grout space is clean and proportions of site-prepared grout
• Verifying grout placement is in compliance with code and construction document provisions
• Preparation of any grout specimens, mortar specimens and/or prisms
• Verification of masonry veneers, glass unit masonry or empirically designed masonry in essential structures (classified Category IV) is in compliance with code and construction document provisions
• Verification of compliance with required inspection provisions of the construction documents and the approved submittals
Note Exceptions 1 and 2 that discuss glass block uses and masonry foundation walls.

6. Wood construction – inspection of the fabrication of wood structural elements and assemblies both prefabricated and field assembled or site built. See Section 1705.6.
Sub-areas for wood construction when high-load diaphragms are constructed (see Section 1705.1):
• Verification of structural wood panel sheathing for grade and thickness
• Verification of nominal size of framing members

• Verification of diameter and length of fasteners and spacing of fasteners in the line of structural members and at panel edges

7. Soils – Inspection site for existing conditions, verification of site preparation prior to placement of prepared fill, verification of fill material and maximum lift thicknesses and verification that in-place densities meet the requirements of the approved geo-technical soils investigation report. See Section 1705.6, 1803.5 and City of Salem Soils Policy.

8. Pile foundations – Inspection of installation and testing of pile foundations and record installation, load tests and cutoff and tip elevation of each pile. See Section 1705.9.

9. Pier foundations – Inspection of pier foundations in accordance with Section 1616.3 for buildings located in Seismic Design Categories C, D, E or F. See Section 1704.9.

10. Spray Applied Fire Resistant Materials (SFRM) – Inspection of fire-resistive material applied to structural elements and decks in accordance with Sections 1705.13 through 1705.13.6.3. These tasks would apply to cementitious, and fibrous products. Sub-areas for inspection of sprayed fire-resistant materials are:

• Verification of structural member surface conditions
• Verification of the application of materials per manufacturer's instructions
• Verification of the thicknesses and density of applied materials
• Verification of the bond strength of applied materials

11. Mastic and Intumescent Fire-Resistant Coatings – Inspection of fire-resistive coatings applied to structural elements and decks in accordance with Section 1705.14.

12. Exterior insulation and finish systems (EIFS) – See Section 1705.15 for exceptions to inspection when EIFS is applied over water-resistive barriers with a means for draining excess water and EIFS installed on masonry or concrete.

13. Special cases – Inspections, in the opinion of the building official, that are needed because of the use of alternate materials, unusual design or use of materials not having building code approval or needing to meet special manufacturer requirements. See Section 1705 for examples where the building official has discretion to require special inspection.

14. Smoke control – Inspections involving testing of ductwork during erection, prior to concealment and prior to occupancy for pressure difference, flow measurements and detection and control verification. See Section 1705.17 through 1705.17.2.

15. Special inspection for seismic resistance and wind requirements – Section 1705.11 describes special inspection requirements for seismic resistance required in the following construction systems: structural steel framing, structural wood framing, cold-formed steel framing, storage racks and access floors, architectural components, mechanical and emergency/standby electrical components, per NEC requirements and seismic isolation systems. See Sections 1704, 1705, 1706, 1707, 1708 and 1709 for specific information regarding quality assurance plans, special inspections and testing requirements.

16. Earth Retaining Structures greater than ten (10) feet unbalanced fill – As required by the Building Official's Office and IBC section 1705 all retaining wall structures over 10 feet in height must be inspected with the pertinent provisions of IBC chapter 17 for soils, foundations, concrete, masonry and/or steel construction and load testing for any required guardrails in accordance with IBC chapter 16.

Periodic vs. Continuous Inspection

The IBC specifies the frequency of each inspection task as either periodic or continuous. **Continuous Special Inspection** has been defined as *"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."* **Periodic Special Inspection** has been defined as *"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."*

When continuous inspection is required, 100% of the work must be inspected and it must be inspected **as the work is being performed.** When periodic inspection is indicated, inspection of less than 100% of the work as prescribed for certain elements in the Code, or verification of 100% of the work which is not required to be verified as the work is being performed. Please see IBC section 1702 and the special inspection requirements for each element to determine whether periodic or continuous inspections are required.

Preparing the SSI Plan

The IBC requires the program of inspection and testing for a project to be prepared by the Registered Design Professional (RDP) in responsible charge of the building system requiring inspections and testing. The Structural Engineer of Record (SER) should determine what level of inspection and testing is required for the structural elements such as foundations, concrete, structural steel, etc. The Architect and MEP engineers must prepare aspects of the inspection and testing program for the building systems for which they have responsibility. See Roles & Responsibilities for further information.

In some circumstances there may be more than one RDP responsible for different portions of the structural system. For instance, a pre-engineered metal building will often have a SER for the foundations and a different SER for the superstructure. Each SER should prepare an inspection and testing program for their portions of the structure. The inspection and testing program for soils and foundations such as controlled fill placement or deep foundations should generally be prepared by the SER. In some circumstances, the SER may delegate the inspection and testing program for these items to a geotechnical or civil engineer.

The IBC requires a *Statement of Special Inspections* (SSI) to be submitted to the Building Official along with the application for Building Permit, per IBC section 1704.3. The SSI is a form that indicates specific inspection and testing to be performed, specific firms to perform them, and the qualifications of the individual inspectors and testing technicians. In preparing the program, the RDP must use judgment to determine the appropriate level of inspection and testing for the project. Complex projects will require more intense inspections than simple projects. The IBC mandates a minimum level of

inspection and testing. In addition to complying with code mandated requirements, the RDP will often require additional inspections or tests that are appropriate for specific projects; these are referred to as discretionary (LEED commissioning is included in the Other Category for such a discretionary item).

The RDP should evaluate the credentials of the firms that will be engaged to perform the inspections and testing to confirm that they are qualified and do not have a conflict of interest. The RDP must also specify the specific qualifications or certifications required of the individual inspectors or testing technicians. The RDP should also include a summary of the inspection and testing program in the Contract Documents. Prior to bidding, the Contractor should be informed of his responsibilities and the level of inspection and testing that the work will be subjected to. Therefore, the SSI is often included in the Project Manual along with the technical specifications and general conditions. Please refer to CASE Guideline: *Guideline Program for Structural Testing and Special Inspection - Fourth Edition* for assistance in integrating SSI with specifications. Refer to the Appendix A for Statement of Special Inspections to be used in submittal.

Completing the SSI

1. Who Prepares the Form:
   The program of inspection and testing for a project should be prepared by the Registered Design Professional (RDP) that is in responsible charge of the building project. For further explanation, please refer to the general considerations listed before these instructions.

2. The Front Page:
   - 2-1. At the top of the page indicate the project name and location as they appear on the Contract Documents, provide the Owner's name (individual, private company, municipality, government agency, etc.), and indicate the Design Professional In Responsible Charge. This should be the RDP in responsible charge of the building systems for which this Statement of Special Inspections is being prepared.
   - 2-2. Next, read the first paragraph and check the box below indicating the discipline(s) that this SSI will encompass (Structural, Architectural, Mechanical/Electrical/Plumbing, or Other).
   - 2-3. After reading the remaining paragraphs, the RDP must indicate the frequency of "Interim Reports" required from the Special Inspection Coordinator for the project. This can be indicated directly on the page, i.e. "weekly", or the adjacent box can be checked to attach a more specific schedule.
   - 2-4. Near the bottom of the page, the RDP must print, sign, and date the form, and stamp the form with their professional seal in the box provided.
   - 2-5. The Owner or Owner's agent must sign and date the front page after the SSI has been completed by the RDP.
   - 2-6. The Building Official must sign and date the form upon acceptance.

3. Page 2 – Schedule of Inspection and Testing Agencies:
   3-1. The top of the page lists all of the categories of building systems with a box next to each. The RDP must check the boxes for only the building systems that are going to be covered in this SSI.
   3-2. The chart below is where the members of the Special Inspection Program are listed. Their names, addresses, telephone numbers, and emails should be filled out in the appropriate boxes. If the Inspectors and Testing Agencies have not been determined yet, the RDP can fill in the boxes with "To Be Determined".

4. Page 3 – Quality Assurance Plan:
   4-1. The RDP must review sections 1705 and 1706 in Chapter 17 of the IBC to determine if the project requires a Quality Assurance Plan for the seismic force and wind force resisting systems and components.
   4-2. The RDP must indicate whether or not a Quality Assurance Plan is required by filling in the information requested on the page. It is only necessary to provide descriptions of the seismic and wind force resisting systems if it is determined that a Quality Assurance Plan is required.

5. Inspection Program Pages For Each Building System:
   5-1. There is an attached schedule that lists the various inspections, tests and field reviews for each of the required systems to be assured. Indicate in the "Y/N" column the special inspections required for this project.
   5-2. Indicate the inspection or testing firm (Agency #) that will perform each inspection task. The Agency # is the number listed next to the Inspector or Testing Laboratory on the chart on page 2 of the SSI.
   5-3. Indicate the required qualifications of the Inspector for each inspection. A list of qualifications of Inspectors and testing technicians is provided on page 4 of the SSI for reference. The RDP may require additional qualifications beyond the ones listed if they feel it is appropriate. Some qualifications have already been printed and are considered minimum qualifications. The RDP must determine what qualifications are appropriate for the particular project and confirm that the selected agency employs individuals with the specified qualifications.
   5-4. Descriptions of all inspections must include the required frequency of each inspection or test.

Conducting the Program

The Contractor is required to schedule inspections and tests and give ample advance notice to the Inspectors and Testing Agencies so that the work will not be delayed.
If a deficiency is identified during an inspection, or if a test fails, the Contractor should be immediately notified so that corrective steps can be taken promptly. It is not the role of the inspector to direct the Contractor as to what remedial work is required to correct a deficiency. That is the responsibility of the Registered Design Professional. In no case, shall inspections be requested by the Contractor to be performed by the Building Official that would allow the concealment of work required to be inspected by the special inspector unless verification has been received that the special inspection has been successfully performed. The Special Inspector shall notify the Contractor of their presence on the jobsite, and shall sign in on the *Special Inspection Record* Card located

adjacent to building permit; This *Special Inspection Record* (See Appendix G) shall be posted in the direct vicinity of the building permit. It is recommended that the SI develop a master list of discrepancies for any given project (preferably electronic) that can be reviewed by all project team members at any given time throughout the project.

The Inspectors and Testing Agencies should prepare reports that document each inspection or test and clearly identify the work that was inspected or tested, any deficiencies that were identified and their resolution. The inspection and testing reports must be submitted to the Special Inspection Coordinator in a timely manner.
The Special Inspection Coordinator collects and reviews the inspection and testing reports. The Special Inspection Coordinator distributes Interim Reports to the Building Official and Registered Design Professional. It is advisable to also distribute Interim Reports to the Contractor and Owner. Interim Reports include all of the individual inspection and testing reports along with a summary. The frequency of Interim Reports (preferably monthly) is subject to the approval of the Building Official.

Refer to Appendix for sample *Statement of Special Inspections*, *Interim Report of Special Inspections*, *Final Report of Special Inspections*, *Contractor's Statement of Responsibility*, and *Fabricator's Certification of Compliance* forms.

Pre-Construction Meeting

Prior to the start of construction, it is necessary to a have a pre-construction conference to discuss the inspection and testing program and to make sure that all of the participants understand their roles and responsibilities.

Pre-construction meetings should be scheduled by the SI with the City of Salem Building Safety Office prior to the start of the project; **building permit will not be issued prior to this meeting taking place**. Please contact our office at 540.772.2065 to schedule an appointment at least 2 days in advance. Meeting location is not specified as meeting space options will vary; on-site meetings or other office locations are preferred, as space at our office is often limited.

The meeting should be attended by the following individuals:

- Special Inspector
- Special Inspection Agent(s)
- Contractor
- Subcontractor's representatives for each trade of work specified in the SSI
- Owner
- RDP(s) of Record for each scope of work specified in the SSI
- Building Official

The meeting should provide a forum to review and explain the following:
- Work to be reviewed as specified in the SSI.
- Inspections performed by the Building Official.
- Timely notification required by the Contractor to the SI of when the work is ready for inspections during the course of the work.
- Procedures to document, correct, re-inspect, and complete items found to be non compliant or deficient.

- Contact information of individuals involved with the project.
- Discussion of the inspections and testing to be performed.
- Proper submission and distribution of reports and supplemental information.
- Discussion of coordination of all work to be performed in accordance with the Contract Documents and that no changes shall be permitted unless authorized and approved in writing by the RDP of Record for the work in question.

Contracts and Fees

The Special Inspector should contract for services directly with the Owner or the Registered Design Professional in responsible charge acting as the Owner's Agent. The other Inspectors and Testing Agencies may also contract directly with the Owner, or they may be engaged by the Special Inspector. When the SER or other Registered Design Professional serves as the Special Inspector, it is important
that they distinguish the Special Inspection services from their Basic Services. When a site visit for structural observation is performed, it should be clearly identified as such on the field report so as not to be confused with a Special Inspection.

It is strongly recommended that fees for Special Inspection services be established on an hourly rate basis. The Owner may request that the Special Inspector estimate the total fee for services, but such estimate should not be a "not to exceed" or "lump sum" amount. The Special Inspector does not have control over the Contractor's scheduling or the quality of workmanship. These factors can have a dramatic effect on the amount of time that is required to properly perform the Special Inspections and Structural Testing. Under certain circumstances it may be appropriate to back-charge the Contractor for some of the inspection and testing costs as follows:

• When work must be re-inspected or re-tested due to the Contractor's work failing to meet the requirements of the Contract Documents.

• When work must be re-inspected or re-tested due to the work not being completed at the time the Contractor scheduled an inspection or test.

• When the Contractor fails to notify the Special Inspector (SI) that field construction is at a point that required special inspections are to be performed.

• When excessive travel expenses are incurred to perform inspection or testing of work performed at a fabricator's shop that is geographically remote from the project site.

The Contract Documents should clearly delineate the circumstances under which the Contractor could be back-charged. In any event, all inspection and testing costs should be billed to the Owner who is responsible for back-charging the Contractor.

Reference Documents

ASTM E329 Standard Specification for Agencies Engaged in Construction Inspection and/or Testing. West Conshohocken: ASTM, Intl.; American Society of Testing Materials, 2007

Fairfax County. Department of Public Works And Environmental Services; Land Development Services. *Special Inspections: Implementation in Fairfax County*. Fairfax: Land Development Services, 2003.

Guide to Special Inspections and Quality Assurance – Third Edition. Washington, DC: CASE Council of American Structural Engineers, 2004

Guideline Program for Structural Testing and Special Inspections– Fourth Edition. Minnetonka: CASE; Council of American Structural Engineers, 2003

Hampton Roads Regional Special Inspection Guidelines and Procedures. Norfolk: Hampton Roads Special Inspection Committee, 2005

Levy, Salvadori. *Why Buildings Fall Down*. New York: W. W. Norton & Company, 1992

Model Program for Special Inspection. Country Club Hills: International Code Council, 2005

2012 International Building Code. Country Club Hills: International Code Council, 2006

Virginia. Department of Housing and Community Development. *Uniform Statewide Building Code, Part I - Virginia Construction Code.* Richmond: Virginia Board of Housing and Community Development, 2012.

Appendices

APPENDIX A – STATEMENT of SPECIAL INSPECTIONS (SSI)

APPENDIX B – INTERIM REPORT of SPECIAL INSPECTIONS

APPENDIX C – FINAL REPORT of SPECIAL INSPECTIONS (FRSI)

APPENDIX D – CONTRACTOR'S STATEMENT of RESPONSIBILITY

APPENDIX E – FABRICATOR'S CERTIFICATE of COMPLIANCE

APPENDIX F – A/E REQUIREMENTS of DESIGN
(City of Salem Revision**)**

APPENDIX G – SPECIAL INSPECTION RECORD CARD

APPENDIX H – IBC 2012 CHAPTER 17 EXCERPTS

APPENDIX A

STATEMENT of SPECIAL INSPECTIONS (SSI)

Adapted with Permission from:

Council of American Structural Engineers
American Council of Engineering Companies
1015 Fifteenth St., NW
Suite 802
Washington, DC 20005-2605

APPENDIX B

INTERIM REPORT of SPECIAL INSPECTIONS (IRSI)

Adapted with Permission from:

Council of American Structural Engineers
American Council of Engineering Companies
1015 Fifteenth St., NW
Suite 802
Washington, DC 20005-2605

APPENDIX C

FINAL REPORT of SPECIAL INSPECTIONS (FRSI)

Adapted with Permission from:

Council of American Structural Engineers
American Council of Engineering Companies
1015 Fifteenth St., NW
Suite 802
Washington, DC 20005-2605

APPENDIX D

CONTRACTOR'S STATEMENT of RESPONSIBILITY

Adapted with Permission from:

Council of American Structural Engineers
American Council of Engineering Companies
1015 Fifteenth St., NW
Suite 802
Washington, DC 20005-2605

APPENDIX E

FABRICATOR'S CERTIFICATE of COMPLIANCE

Adapted with Permission from:

Council of American Structural Engineers
American Council of Engineering Companies
1015 Fifteenth St., NW
Suite 802
Washington, DC 20005-2605

APPENDIX F

A/E REQUIREMENTS of DESIGN (City of Salem Revision)

Adapted with Permission from:

Building and Fire Code Related Laws Package
Virginia Department of Housing and Community Development
Division of Building and Fire Regulation
501 N. Second Street
Richmond, VA 23219-1321

ROANOKE COUNTY COMMUNITY DEVELOPMENT

PROFESSIONAL SEAL ON DRAWINGS

The purpose of these charts and notes is for quick reference to determine in accordance with § 54.1 - 402 of the Code of Virginia if an architect's or engineer's (A/E) seal is required on documents for proposed construction.

CHART A - GENERAL DESIGN

A proposed structure which is classified within any of the categories marked "Yes" requires an A/E seal on the documents. Separate requirements apply as to when the electrical, plumbing or mechanical systems in such structures require an A/E seal (see Charts B and C).

GROUP	BRIEF DESCRIPTION	AREA (SQ. FT.)			HEIGHT (STORIES)	
		5,000 OR LESS	5,001 TO 15,000	OVER 15,000	3 OR LESS	OVER 3
A[1]	ASSEMBLY	YES	YES	YES	YES	YES
B	BUSINESS	_	YES	YES	_	YES
E	SCHOOLS& DAY CARE CENTERS	YES	YES	YES	YES	YES
F	FACTORY & INDUSTRIAL	_	_	YES	_	YES
H	HIGH HAZARD	YES	YES	YES	YES	YES
I	INSTITUTIONAL	YES	YES	YES	YES	YES
M	MERCANTILE	_	YES	YES	_	YES
R-1	HOTEL, MOTEL & DORMITORY	YES	YES	YES	YES	YES
R-2[7]	MULTI-FAMILY RESIDENTIAL	_	_	YES	YES	YES
R-3	2 FAMILY ATTACHED	_	_	YES	_	YES
R-4	RESIDENTIAL ASSISTED LIVING	_	_	YES	_	YES
R-5	1 & 2 FAMILY DWELLINGS	_	_	YES	_	YES
S	STORAGE (NON-FARM)	_	_	YES	_	YES
U	UTILITY & MISCELLANEOUS	_	_	YES	_	YES
ALL	INTERIOR DESIGN	SEE NOTE NUMBER 4				

Notes: (Apply the following notes to all categories as applicable.)

1. Churches are exempt if building does not exceed 5,000 square feet or three stories, and the occupant load does not exceed 100.
2. A local building code official may require an A/E seal even if not required to do so by this chart.
3. The law requires that, where an A/E seal is not present, the plans must be signed by the individual (not company) responsible for the design, including the individual's occupation and address.
4. Additions, remodeling or interior design defined under § 54.1-400 of the Code of Virginia might not require an A/E seal. For construction, additions or remodeling resulting in a change in occupancy, occupancy load, modification to the structural system, change in access or egress or an increase in fire hazard an A/E seal is required in accordance with § 54.1-400, although notes 1 and 2 still apply.
5. Any unique design of structural elements for floors, walls, roofs or foundations requires an A/E seal, regardless of whether or not the remainder of the plans require such certification.
6. Buildings, structures, or electrical and mechanical installations which are not otherwise exempted but which are of standard design, provided they bear the certification of a professional engineer or architect registered or licensed in another state, and provided that the design is adapted for the specific location and conformity with local codes, ordinances and regulations, and is so certified by a professional engineer or architect licensed in Virginia may not require an A/E seal.
7. One exit and three stories or less Group R-2 buildings would normally be exempted from an A/E seal except where required by Note 2. Most all other three stories or less Group R-2 multi-family buildings are required by the building officials to have A/E seals for the construction documents.

APPENDIX G

SPECIAL INSPECTION RECORD CARD

Adapted with Permission from:

International Code Council
ICC Publications
4051 W. Flossmoor Road
Country Club Hills, IL 60478-5795

APPENDIX H

IBC 2009 CHAPTER 17 EXCERPTS

Adapted with Permission from:

International Code Council
ICC Publications
4051 W. Flossmoor Road
Country Club Hills, IL 60478-5795