



*City of Falls Church, Virginia
Building Safety Division*

Building Safety Preconstruction Manual

*Special Inspections and Other
Construction-Related Requirements*



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Based on the 2012 Virginia Construction Code

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SECTION I – SPECIAL INSPECTIONS PROGRAM

1.1 Introduction

The ***City of Falls Church Special Inspections Program*** provides and coordinates the procedures for special inspections that are required by the *Virginia Construction Code* (hereafter VCC) and are enforced by the City of Falls Church Building Safety Division. These procedures and guidelines are applicable during the design, permitting and construction processes and contain pertinent information needed for successful application and completion of the special inspection requirements.

Special inspections are observations, inspections and tests that are conducted during the construction of building components, elements and connections that require particular expertise to substantiate adequacy. These inspections are required by the VCC and are intended to provide a higher degree of scrutiny for aspects of construction that, upon failure, would cause significant harm. These aspects of construction include support-of-excavation systems, foundation systems, building structural systems, applied fire-resistant materials, certain veneer systems, and smoke control systems.

The Owner must retain a qualified registered design professional to provide these services, and bears the associated costs. Special inspections are required in addition to other inspections prescribed under the *2012 Virginia Uniform Statewide Building Code Part I Virginia Construction Code* (VCC) and the *2012 International Building Code* (IBC). This document shall be used in conjunction with the *2012 Virginia Construction Code*.

This document:

- Contains the policies and procedures underpinning the Special Inspections Program.
- Describes and defines the roles and responsibilities of all parties involved in special inspections.
- Standardizes building code application and implementation for special inspections.
- Provides for an orderly and systematic approach for updating standards which apply to the Special Inspections Program.
- Implements and references the requirements of VCC-1704 *Special Inspections* and its referenced standards. This *2012-SIP* document text summarizes the pertinent VCC provisions, and the code sections are directly referenced (denoted by “VCC-mm.nn” section numbers), but the corresponding code language and code tables are not included.

Chapters and procedural outlines in this document identify the purpose, team members’ responsibilities, time requirements, and scope of various construction activities. The Special Inspections Program applies throughout the construction project, and a copy of this document shall be available at the construction site from the time of the preconstruction meeting through final inspections prior to occupancy. The VCC should also be available on the construction site.

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At the preconstruction meeting, participants shall discuss the scope and extent of the Statement of Special Inspections, which identifies the special inspections and material testing requirements for the project.

The provisions of the Special Inspections Program do not relieve any participant from the proper performance of work according to contracts, approved plans and specifications, and compliance with the VCC requirements and the applicable federal and state safety regulations.

1.2 Definitions

The following words and terms shall, for the purposes of the Special Inspections Program, have the meanings shown herein. The word, “shall”, where used in this document, indicates mandatory requirements. Words and terms not defined herein shall have the meanings ascribed to them in the VCC.

Approved. Acceptable to or as authorized by the Building Official; or if explicit by the context, as reviewed by a registered design professional, with the result that construction or fabrication may proceed (see VCC-202 *Definitions: Approved*).

Approved Agency. An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved. (see VCC-1703.1)

Architect of Record (AR). A registered design professional retained by the Owner to design or specify architectural construction in accordance with the VCC, and whose signature and seal appear on the City-approved architectural construction documents.

Building. Construction with a roof (a “roofed structure”), for use or occupancy (see VCC-202 *Definitions: Building*).

Building core and shell. The basic configuration and construction of a building or structure, with the “shell” structure and “core” public areas and services.

- **Building shell.** The overall structure of foundations, exterior walls, columns, floors, and roof, including stairways, elevator hoistways, common area corridors and grade-level exit passageways, and all fire-protection (detection, suppression and alarms) systems throughout the building.
- **Building core.** Public areas and services including lobbies, required accessible features and rest rooms, and also including the primary and emergency electrical services, plumbing water and sewer services, and primary heat, ventilation and air conditioning systems.

Certification. A signed and sealed statement issued by a registered design professional which shall indicate that the item under consideration, in the registered design professional’s opinion and to the best of the registered design professional’s knowledge:

- Complies with City-approved documents; or
- Complies with requirements of the VCC.

Completion letter. A certification by a registered design professional which shall indicate that the construction elements subject to special inspections and material testing for a specific material or phase of construction have been inspected prior to concealment, the construction is satisfactorily completed, and in the registered design professional’s professional opinion and to the best of the registered design professional’s knowledge, complies with City-approved documents and project specifications. A completion letter shall carry the signature and seal of the registered design professional making the statement. A completion letter may be a portion of the final report of special inspections.

Construction documents. Documents prepared for the purpose of obtaining a building permit (see VCC-202 *Definitions: Construction documents*).

Deep foundation. A deep foundation is a foundation element that does not satisfy the definition of a shallow foundation. A deep foundation usually extends more than 3’-0” below grade. Examples include: driven steel or concrete piles, cast-in-place concrete caissons, helical piles, micropiles, and masonry or concrete piers or columns with heights more than four times their minimum thickness. (see VCC-202 *Definitions: Deep foundation*).

Essential facility. A building or structure that contains occupancies or provides emergency response services that must remain operational after a fire, flood, earthquake, hurricane or other disaster (see VCC-202 *Definitions and notations: Essential facilities and VCC-Table 1604.5 Occupancy category of buildings and other structures and VCC-1613.3.5 Determination of seismic design category*).

Fabrication and erection documents. Written, graphic and pictorial documents prepared or assembled after issuance of a building permit and in addition to the City-approved construction documents, describing the design, location and physical characteristics of the building elements or materials necessary for fabrication, assembly or erection of the components of the project.

Final report of special inspections. A certification by the Special Inspections Engineer of Record (SIER) which indicates that all construction elements subject to special inspections and material testing have complete inspections and comply with City-approved documents and project specifications. The final report of special inspections shall carry the signature and seal of the SIER making the statement.

Formwork, concrete. Temporary structures designed to mold and restrain freshly placed concrete until it reaches sufficient solidity and strength to be self-supporting without the formwork (see also “Shores” and “Reshores”).

Geotechnical Engineer of Record (GER). A registered design professional retained by the Owner to design or specify earthwork and foundations in accordance with the VCC, and whose seal and signature appear on the City-approved geotechnical report.

High-rise building. A building with an occupied floor located more than 75 feet above the lowest level of fire department vehicle access.

Inspection. The continuous or periodic observations of executed work and performance tests, for certain building or structure components, to establish conformance with City-approved documents as required by the VCC and this document.

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Inspection and testing agency (TA). An established and recognized agency meeting the requirements of ASTM E 329 and accredited by an accreditation body recognized by the City, retained by the Owner, independent of the contractors executing the work subject to special inspection, and approved by the Building Official to conduct special inspections and material testing as required by the VCC and this document (see VCC-1702 *Definitions: Approved agency* and VCC-1703.1 *Approved agency*).

Nonstructural elements. Elements of a building that are not primary or secondary structural load-bearing elements. Examples include exterior curtain walls and cladding, nonbearing partitions, guards, and hand rails.

Owner. The word “Owner” shall be construed as though followed by the words “or the owner’s duly authorized representative” (see VCC-202 *Definitions: Owner*).

Pre-engineered structural elements. Structural elements specified by the Structural Engineer of Record but which may be designed by a specialty registered design professional. Examples are items such as open-web steel joists and joist girders; wood trusses; combination wood, metal and plywood joists; precast concrete elements; prefabricated wood or metal buildings; tilt-up concrete panel reinforcement and lifting hardware.

Primary structural system. The combination of structural (load-bearing) elements which serve to support the weight of the building’s structural shell, the applicable live loads based upon use and occupancy, wind loads, snow loads, thermal loads and seismic loads.

Registered design professional. A professional architect or professional engineer licensed in Virginia (see VCC-202 *Definitions: Registered design professional* and *Code of Virginia § 54-1*).

Registered Design Professional in Responsible Charge (RDP). A registered design professional engaged by the Owner to review and coordinate certain aspects of the project, as determined by the Building Official, for compatibility with the design of the building or structure, including submittal documents prepared by others, deferred submittal document and phased submittal documents.

Reshores. Shores placed snugly, but without preloading, under a concrete slab (or other structural member) after the original formwork and shores have been removed, thus allowing the new slab or structural member to deflect, and to support its own weight and existing construction loads. Reshores are used to distribute future loads into slabs and members below (see ACI 318-11 2.2). Reshores may be individual posts, scaffolds, or combinations.

Risk category. Used for structural requirements based on the type of occupancy and the occupant load (see VCC-202 *Definitions and notations: Risk category* and VCC-1604.5 *Risk category*).

Secondary Members. Building elements that are structurally significant (load-bearing) for the function they serve but are not necessary for stability of the primary structure. Examples include: support beams above the primary roof structure which carry a chiller; elevator support rails and beams; retaining walls independent of the primary building; flagpole or light pole foundations; falsework required for the erection of the primary structural system; steel stairs; etc., not fully specified on the City-approved construction documents. (see VCC-202)

Seismic design category. Classification based on occupancy category and earthquake criteria (see VCC-202 *Definitions: Seismic design category* and VCC-1613.3.5 *Determination of seismic design category*).

Shallow foundation. A shallow foundation is an individual or strip footing, a mat foundation, slab-on-grade, or similar foundation element. A foundation element extending 4'-0" or less below grade. Examples include: strip footings, mat foundation, slab-on-grade, and masonry or concrete piers with heights less than four times their minimum thickness. (see VCC-202 *Definitions: Shallow foundation*).

Shores. Vertical (or inclined) temporary supports designed to carry the dead load weight of the concrete and formwork, and construction live loads above (see ACI 318-2.2). Shores may be individual posts, scaffolds, or combinations.

Special inspections. The continuous or periodic observations of executed work and performance tests, and the conduction of materials tests, during construction of building components, elements and connections requiring special expertise to substantiate adequacy in compliance with City-approved documents and VCC requirements. Special inspections are conducted by the SIER, not the Building Official, and are in addition to other inspections required elsewhere by the building code (see VCC-202 *Definitions: Special inspection*).

Special inspection, continuous. Full-time special inspection while the work is being executed (see VCC-202 *Definitions: Special inspection, continuous*).

Special inspection, periodic. Part-time or intermittent special inspection where the work has been or is being executed (see VCC-202 *Definitions: Special inspection, periodic*).

Special Inspections Engineer of Record (SIER). Referred to as "special inspector" in the VCC. A registered design professional who is directly responsible for special inspections, materials testing and related services as described in the City-approved Statement of Special Inspections and this document. The SIER shall be retained by the Owner, independent of the contractors executing the work subject to special inspection, and be City-approved. (see VCC-202 *Definition: Special Inspector*)

Special Inspections Program (SIP). The technical requirements for special inspections and material testing in accordance with the VCC, and the administrative procedures of the Building Safety Division, for a building or structure with elements or components subject to special inspections and material testing during construction.

Special inspections project. A building or structure to be constructed or altered under the Special Inspections Program.

Statement of Special Inspections. The Statement of Special Inspections is a statement prepared by the Owner and the appropriate registered design professionals (the Architect of Record, the Geotechnical Engineer of Record, and the Structural Engineer of Record) and submitted by the permit applicant as a condition for permit issuance in accordance with the VCC. The Statement of Special Inspections identifies the scope of the special inspections and material testing services applicable to a construction project, and the registered design professionals and the inspection and testing agency selected to provide those services.

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Structural Engineer of Record (SER). A registered design professional retained by the Owner to design or specify structural documents in accordance with the VCC and whose signature and seal appear on the City-approved structural construction documents.

Structure. An assembly of materials which is built or constructed for occupancy or use. (see VCC-202 *Definitions: Structure*).

Tenant space. Construction within a building core and shell to produce a completed, occupiable area. In this context, “tenant space” is construed to mean the additional areas between a building’s core public areas and the building’s exterior walls.

Vertical masonry foundation element. A foundation pier, pier, column or wall, depending upon its dimensions (see VCC-1808.9 *Vertical masonry foundation elements* and VCC-202 *Definitions: Foundation pier*).

1.3 When Special Inspections Are Required

The Special Inspections Program shall apply to newly constructed building elements and to modifications to existing building elements, and to element-fabrication procedures that are subject to special inspections as required by the VCC. Special inspections are required for:

- Inspection of fabricators in accordance with VCC 1704.2
- Steel construction in accordance with VCC 1705.2
- Concrete construction in accordance with VCC 1705.3
- Masonry construction in accordance with VCC 1705.4
- Wood construction in accordance with VCC 1705.5
- Soil and foundation construction in accordance with VCC 1705.6
- Driven-deep foundation in accordance with VCC 1705.7
- Cast-in-place deep foundation in accordance with VCC 1705.8
- Helical pile foundation in accordance with VCC 1705.9
- Special inspection for seismic resistance in accordance with VCC 1705.11
- Testing and qualification for seismic resistance in accordance with VCC 1705.12
- Spray fire-resistant material in accordance with VCC 1705.13
- Mastic and intumescent fire-resistant coating in accordance with VCC 1705.14
- Exterior insulation and finish system (EIFS) in accordance with VCC 1705.15
- Smoke control system in accordance with VCC 1705.17

Special inspection shall also be required for proposed work that is, in the opinion of the Building Official, unusual in its nature, such as, but not limited to, the following examples:

- Unusual design applications of standard construction materials.
- New building materials, equipment, appliances, systems or methods of construction not provided for in the VCC.
- Materials and systems required to be installed in accordance with additional manufacturer’s instructions that prescribe requirements not contained in the VCC or in standards referenced by this code.

- Sheeting and shoring, underpinning, curtain walls, and façade repairs.

While not required by the VCC, the Building Official and Building Safety Division strongly recommend special inspections for fire-resistant penetrations and joints in accordance with IBC 1705.16.

1.4 Statement of Special Inspections

Contents. The Statement of Special Inspections shall be submitted with the construction documents by the permit applicant (see VCC-1704.2 *Statement of Special Inspections*).

The Statement of Special Inspections shall:

- Identify the scope of the special inspections applicable to the project.
- Include the names and firms of the registered design professionals, and the inspection and testing agencies providing special inspection and material-test services.

The Special Inspections Engineer of Record (SIER) and the inspection and testing agency are subject to Building Official approval.

Form. The City’s official Statement of Special Inspections form is provided in Appendix I. The first two pages, to be prepared by the Owner, identify the project and registered design professionals for the project. The next several pages, identified as the Schedule of Special Inspections, shall be completed by the appropriate registered design professionals. The completed Schedule of Special Inspections shall describe and specify the scope and extent of special inspections and material testing services for the project.

The City’s official Final Report of Special Inspections form is also provided. This form shall be prepared by the SIER after all special inspections and material testing services are completed.

Approval. Building Official approval of the completed and signed Statement of Special Inspections is required prior to the issuance of a building permit.

1.5 Building Safety Pre-Construction Meeting

Pre-construction meetings are required for permit approval for projects requiring special inspections, unless waived by the Building Official. The meeting shall be scheduled with the Building Official, will take place at the offices of the Building Official, and shall be attended by the following individuals:

- Owner (required for all projects)
- Structural Engineer of Record (required for building / foundation elements)
- Architect of Record (recommended for all projects)
- Geotechnical Engineer of Record (required for soils / foundation elements)
- General Contractor (required for all projects)
- Special Inspections Engineer of Record (required for all projects)
- Registered Design Professional(s) of Record for each scope of work specified in the SSI (e.g. sheeting and shoring, precast concrete)
- City of Falls Church special inspections staff (required for all projects)

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- Other parties, as deemed appropriate by the Owner or Building Official (other inspection and testing agencies, subcontractors, etc.)

The purpose of the preconstruction meeting is to review the special inspection requirements of the project and establish responsibilities and communication channels among the project team members. Additional construction-related requirements, including site safety, construction fire-hazard prevention, phasing of occupancy, and other critical aspects of the project will be discussed. This meeting may be combined with preconstruction meetings required by other City departments, including Zoning, Planning, Public Works, and Public Safety and may include discussions involving site plans, as-built plans, voluntary concessions, utilities, streets, sidewalks, construction traffic, erosion and sediment controls, and parking.

1.6 Changes in the Special Inspections Team

In the event that the Registered Design Professionals of Record, the General Contractor, the SIER, the Inspection and Testing Agency, or other organizations or individuals contracted for special inspections or testing services are changed during the course of the work, the Owner shall notify the Building Official immediately. The Owner shall provide a written explanation for such change, identify and obtain City approval for the replacement party, and schedule a new meeting with the Building Safety Division and the replacement party. The Owner shall ensure there is a timely transfer of information and responsibility to the replacement party.

Change of the Architect of Record, or change of the Structural Engineer of Record, requires approval by the Building Official, and may invalidate City-approved construction documents, requiring their resubmission for review and approval for new permits.

Change of the Geotechnical Engineer of Record requires approval by the Building Official, and may invalidate the City-approved geotechnical report.

Change of the General Contractor requires notification to the Building Official, and may require a new building permit if the General Contractor is the building permit holder.

Change of the SIER or the inspection and testing agency requires approval by the Building Official and may invalidate further special inspections. In the event the inspection and testing agency has significant changes in management, ownership, personnel certifications or laboratory accreditation, re-approval by the Building Official is required.

1.7 Primary Responsibilities

The following are general responsibilities of the principal parties to the construction project that are involved in the special inspections program. This list is not intended to be all-inclusive. Additional responsibilities may be assigned to the parties identified below, and others, by the Owner or the City.

Owner

- Shall submit permit applications that include a complete Statement of Special Inspections.
- Shall retain all professionals performing special inspections.

- Shall identify the necessary participants and schedule the preconstruction meeting by calling the Building Official at 703-248-5087 (TTY 711).
- Shall submit proof of certification or experience, as applicable, for all special inspections personnel.
- Shall notify the Building Official if there is a change in the special inspections team and reasons for the change.
- Shall assure prompt distribution of special inspections and material testing reports.

Special Inspection Engineer of Record (SIER)

- Shall be a registered design professional retained by the Owner to conduct special inspections and material testing services required by the VCC and this document.
- Shall be independent of the contractors executing the work subject to special inspection.
- Shall work with the Owner and in concert with other members of the special inspections team to develop the Statement of Special Inspections.
- Shall provide construction observation and testing services of required scope and frequency to offer a professional opinion that the constructed project was built in accordance with the City-approved construction documents, and that construction has been tested and inspected in accordance with the approved Statement of Special Inspections and applicable codes and standards.
- Shall verify that all fabricators of structural elements comply with applicable quality assurance programs.
- Shall be responsible for the work of the inspection and testing agency.

Inspection and Testing Agency (TA)

- Shall be an established and recognized agency, retained by the Owner, meeting the requirements of ASTM E 329 and shall be accredited by an accreditation body recognized by the City. See VCC-1702 *Definitions: Approved agency* and VCC-1703.1 *Approved agency* and VCC-1704.1 *Special inspections, general*.
- Shall be independent of the contractors executing the work subject to special inspection.

Structural Engineer of Record (SER)

- Shall have the ultimate responsibility for all structural elements of the building.
- Shall review and approve structural fabrication and erection drawings, including, but not limited to, members and connections designed and/or fabricated by the steel fabricator, concrete and grout mix designs, formwork drawing and stripping criteria, precast erection drawings, including erection sequencing and bracing and grouting plans, and sheeting and shoring design.
- Shall review construction observation and testing reports/records provided by the SIER for conformance with the approved construction documents and the VCC and take appropriate action as required.

Geotechnical Engineer of Record (GER)

- Shall prepare and issue geotechnical report of subsoil evaluation.

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- Shall prepare design criteria for foundations and foundation systems.
- Shall revise geotechnical recommendations if site soil or groundwater conditions differ materially from conditions indicated on the approved geotechnical report, coordinate changes with the design professionals of record responsible for the structural design of foundations, deep foundations or other types of foundation systems.

General Contractor (GC)

- Shall have the ultimate responsibility for the construction.
- Shall provide the means and methods of construction and the temporary shoring and support of construction.
- Shall coordinate construction and ensure that construction loads do not exceed capacity.
- Shall take necessary actions to assure a safe job site that meets OSHA, VOSHA, and other job site safety requirements.
- Shall submit construction documents to the City as identified at the preconstruction meeting.
- Shall schedule and coordinate required inspections and ensure that required inspections are conducted and approved prior to concealing work.

1.8 Approved Documents

Prior to conducting special inspections and materials testing, the SIER shall be responsible for verification of the following:

- **Building permit.** A building permit for the particular construction has been issued and a copy of the building permit is posted at the construction site.
- **City-approved construction documents.** A set of original City-approved construction documents is available at the construction site.
- **Structural Engineer of Record approved fabrication and erection documents.** Fabrication and erection documents shall bear the Structural Engineer of Record review/approval stamp and shall be available at the construction site.
- **Revisions to City-approved documents.** All revisions to City-approved construction documents, or City-approved fabrication and erection documents, or other documents, such as field change orders in response to requests for information, are in writing and have been approved, signed and sealed by the Architect of Record, the Structural Engineer of Record, the Geotechnical Engineer of Record, and the City, as appropriate. If such revisions do not bear the City stamp of approval, the SIER shall confirm with the Building Official whether the revisions are authorized or whether formal re-approval of revised documents is required. It shall be the responsibility of the Architect of Record, the Structural Engineer of Record, and the Geotechnical Engineer of Record, as appropriate, to submit written revisions.
- **Deviations.** The SIER shall not suggest, direct or authorize the fabricator, erector or contractor to deviate from the contract documents, City-approved construction documents, or City-approved fabrication and erection documents, without the express written approval of the Architect of Record, the Structural Engineer of Record, the Geotechnical Engineer of Record and the Building Official, as appropriate.

1.9 Special Inspections and Material Test Reports

The SIER shall report the results of testing and inspections, both approvals and rejections, to the Building Official according to the following procedures:

- **Seal and signature.** Each report shall bear a signature and seal of the SIER and shall include the correct building permit number and project address.
- **Submissions.** Both approval and rejection reports shall be submitted to the General Contractor, the Owner, and the Building Official, and shall be submitted to the Architect of Record, the Structural Engineer of Record, and the Geotechnical Engineer of Record as appropriate. With the exception of situations where a code violation or safety hazard is discovered and must be reported immediately, all inspection and test reports shall be submitted to the Building Official within seven working days of the inspection or test conducted. Submit reports to the Building Official via email to permits@fallschurchva.gov. In the email header, please include the eight-digit building permit number and indicate if new deficiencies are being reported.
- **Compliance.** Unless deficiencies are discovered or code violations are revealed, special inspections and material testing reports shall indicate that the specified work has been inspected and found to be in compliance with City-approved documents.
- **Deficiencies.** Deficiencies shall be reported to the General Contractor for correction. Deficiency reports shall contain the details describing the nature and specific location of the deficiency and include a description of the action recommended by the Architect of Record, the Structural Engineer of Record or the Geotechnical Engineer of Record, as appropriate, to correct it. After correction, re-inspection is required. At the completion of a project, all recorded problems or deficiencies shall be documented as having been corrected and approved by the appropriate registered design professionals.
- **Completion letters.** Upon completion of special inspections and material testing for a particular construction discipline, such as “structural steel”, the SIER may, after review by the appropriate registered design professionals, submit a completion letter to the Building Official as a part of the final report of special inspections.
- **Final report of special inspections.** Upon completion of special inspections and material testing for all construction elements subject to special inspection for all phases of construction, the SIER shall, after review by the appropriate registered design professionals, submit a final report of special inspections to Building Official for approval. Any unresolved deficiencies noted by the appropriate registered design professionals or by the Building Official shall be addressed and corrected prior to final building inspection approval. Building Official approval is required prior to final-building-inspection approval or issuance of a certificate of occupancy

1.10 Stripping Authorization

The SIER shall initiate a stripping letter when concrete strengths have achieved the levels specified by the Structural Engineer of Record. The stripping letter shall contain:

- Minimum required concrete strength for stripping, as established by the Structural Engineer of Record.
- Cold-weather temperature logs and post-tension stressing records.

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- Test break result for the field-cured cylinders.
- Seal and signature of both the SIER and the Structural Engineer of Record.

All stripping letters shall be sent electronically to the Building Official prior to stripping.

1.11 Code Violations

In the event that the SIER observes a condition while conducting special inspections and material testing services that constitutes a violation of the VCC or the *Code of the City of Falls Church, Virginia*, the SIER shall *immediately* notify the appropriate registered design professionals and the Building Official for resolution, followed with a written report submitted to the Building Official within seven working days.

1.12 Construction Site Safety Violations

In the event that the SIER observes a condition that poses an immediate or serious safety hazard to construction site workers or to the general public, the SIER shall *immediately* notify the General Contractor and Building Official for resolution.

Serious work-related injuries or fatalities shall be reported to the Building Official as soon as reasonably possible after the incident. Serious incidents include in-patient hospitalization of one or more employees or an employee's amputation or an employee's loss of an eye, as a result of a work-related incident.

1.13 Qualifications of Inspection Personnel

Direct supervision. The inspection and testing agency personnel assigned to conduct special inspections shall work under the supervision of an approved registered design professional with demonstrated proficiency in the construction discipline to be evaluated.

Certification. Except for individuals who are registered design professionals, inspection and testing agency field inspection personnel shall be certified by examination through WACEL, the American Concrete Institute, the American Welding Society, the American Society for Nondestructive Testing, the National Institute for Certification in Engineering Technologies, or other organizations whose programs are recognized by the City. The SIER shall submit resumes and documentation, for approval by the City, of inspection and testing personnel. The inspection and testing agency personnel shall conduct only those special inspections and material testing services in which they have demonstrated competency through an approved certification or registration program. Different levels or types of special inspections require different levels or types of expertise by the inspector, and competency certifications shall match the tasks. Tests or inspections conducted by unqualified or unapproved inspection and testing agency personnel shall be automatically rejected, and further construction work shall not proceed until re-inspections are conducted and approved.

Unusual functions. In the event there is no certification program applicable to a specific special inspections or material testing function, the SIER shall submit a signed statement attesting to the competency of inspection and testing agency personnel and identifying the basis upon which such statement is made.

1.14 Laboratory Acceptance Standards

All laboratory facilities conducting special inspections and material testing services shall meet the requirements of ASTM E 329, ASTM D 3740, and ASTM C 1077 as applicable and shall be individually accredited by organizations such as WACEL, the American Association for Laboratory Accreditation, the National Institute of Standards and Technology, the National Voluntary Laboratory Accreditation Program, or other organizations whose programs are recognized by the City. Laboratories shall be reviewed and approved by the Building Official on a case by case basis and shall conduct only those tests and analyses for which accreditation has been obtained. The SIER shall approve on-site laboratories provided the on-site laboratory demonstrates that it has and follows an effective quality control program; equipment calibration program; and a technician certification program of an accredited laboratory.

SECTION II – SAFEGUARDS DURING CONSTRUCTION

2.1 Introduction

This section is meant to highlight typical City and VCC requirements regarding safeguards during construction. This should not be considered an all-inclusive document and does not relieve any participant from the proper performance of work according to contracts, approved plans and specifications, and compliance with the VCC requirements and the applicable federal and state safety regulations.

2.2 Protection of the Public

Materials and equipment. The General Contractor is responsible for safe storage and placement of materials and equipment, as required by VCC-3301.2 *Storage and placement*. Keep materials tied down, where possible, to protect from unexpected wind events.

Occupied buildings. Means of egress from occupied buildings shall be maintained at all times, shall not be blocked, and shall not pass through construction areas. In the event that existing exits are proposed to be blocked by construction, alternative exits shall be provided or constructed in advance and approved by the Building Official and by the Fire Marshal. Occupied buildings undergoing remodeling or additions shall also comply with the requirements of VCC-3302 *Construction safeguards*. Fire protection devices and equipment shall be maintained at all times throughout the building.

Fencing, construction railings, barriers and covered walkways. The General Contractor shall install construction site fencing, construction railings, barriers and covered walkways for protection of the public, in accordance with this section and VCC-3306 *Protection of pedestrians* and per the approved site plan, prior to the excavation for footings or underground utilities, and continuing for the duration of the construction project. Impact barricades required for projects located in close proximity to a public-use roadway shall be installed in accordance with the Virginia Department of Transportation regulations. Upon written request by the General Contractor, the criteria outlined below may be modified by the Building Official when a natural barricade surrounding a construction site exists. The SIER shall notify the Building Official if protection is not installed or maintained.

- **Site fencing.** Every construction site shall be enclosed with a non-climbable fence not less than 6'-0" high. The General Contractor shall have the option of fencing the total perimeter of a construction site or an area within a minimum of 20'-0" away from the structure. Fencing shall be maintained until the building can be secured against entry and the exterior site is free of hazards. Fencing shall not enclose fire hydrants and FDC's and shall not interfere with required clearances. FDCs must project through the fencing and be clearly labeled.
- **Construction railings, barriers and covered walkways.** Construction railings, barriers and covered walkways shall be of noncombustible or fire-retardant treated materials and shall comply with VCC-3306 *Protection of pedestrians* and VCC-Table 3306.1 *Protection of pedestrians*, except that construction railings or barriers located outside the building may be of any approved material. Construction railings shall be 3'-6" high. Covered walkways shall be as

wide as required for corridors or exits, or at least 4'-0" wide, whichever is greater, and shall maintain a satisfactory level of light to the space that will be equal to or better than that provided prior to the installation of the protective covering. See VCC-3306.7 *Covered walkways* for construction criteria. Barriers, when required by VCC-Table 3306.1 *Protection of pedestrians*, shall comply with VCC-3306.5 *Barriers* and VCC-3306.6 *Barrier design*. The General Contractor shall submit designs for barriers and covered walkways to the Building Official for approval.

2.3 Extreme Weather Preparation

Contractors are responsible for maintaining their construction sites in a safe and lawful manner at all times, including inclement weather conditions. Contractors must properly secure and prepare construction sites for extreme weather, during which sustained winds reach or exceed 60 miles per hour, or when ordered to do so by the Buildings Official, to ensure public safety and protect adjoining property.

Contractors should register with Falls Church Alerts. Falls Church Alerts is the official City of Falls Church emergency communications system that sends emergency alerts, notifications, and updates to devices. This system enables the City to provide you with critical information in a variety of situations, including severe weather, road closures, missing persons, and neighborhood evacuations. Go to <http://www.fallschurchva.gov/alerts> to sign up.

Extreme weather action plan. Contractors and construction site managers must have an action plan to prepare, secure and protect their construction sites. Action plans shall include proper task planning, shall outline pre-storm preparation, shall establish an emergency-response team and shall outline post-storm inspection and repair procedures. Pre-storm preparations shall include, but not be limited to, the following:

- Band and tie down material and debris to prevent dislodgment from wind. Remove material and debris from roofs.
- Shore masonry walls and steel frames under construction to prevent collapse under wind load.
- Secure wood floor and roofing with positive attachments.
- Remove material and debris from supported scaffolds. Check that tiebacks are properly secured and remove or properly attach planking.
- Brace and secure all construction fencing.
- Secure excavations, support-of-excavation structures (SOE), and underpinning:
 - Inspect excavations both before and after storm event.
 - Complete all SOE shoring systems in accordance with plans if time allows or provide stable, benched berms (no less than 1:1 slope effective, or in accordance with recommendations by engineer of record).
 - Complete all excavated underpinning pits and transfer load. Secure pins against lateral displacement by means of shoring, tiebacks, benching and berming, in accordance with recommendations by engineer of record.

SECTION II – SAFEGUARDS DURING CONSTRUCTION

- Make provision for maintaining ongoing dewatering systems throughout storm, including use of back-up generators. Do not cease ongoing dewatering unless recommended by the engineer of record.
- Remove material and debris from deck of pedestrian covered walkways and secure deck planking against dislodgment .
- Secure mobile cranes:
 - For telescopic cranes, retract boom, stow jibs, retract outriggers, then store and secure crane.
 - For crawler cranes, lower boom to ground or otherwise fasten securely against displacement, and secure body of crane from displacement as per engineer or manufacturer recommendations.
- Secure tower cranes:
 - Place in weather vane mode. Release slew brake and verify (provided that, site surroundings permit weather vane mode). Follow engineer of record’s specific instructions.
 - Place trolley in inner position.
 - Check collars, ties and all connections. Verify with engineer of record need to release tie-ins.
 - Check all base, mast and boom connections.
 - Raise hook with no load.
 - Provide foundation protection surrounding mast base and ensure sufficient drainage.
- Secure construction hoists :
 - Properly secure mast connections, overhead protection, nettings, cat head, outriggers and landing plates.
 - Remove any loose debris from car top, from inside cab, from landing and from surrounding areas.
 - Properly secure hoist cab and counterweight as per manufacturer’s extreme weather recommendations.
 - Shut off electrical power to hoist
- Provide two (2) 24-hour points-of-contact information to Police dispatch at 703-248-5053 (TTY 711) and to the Building Safety Division at 703-248-5080 (TTY 711)

2.4 Fire Protection During Construction

Fire extinguishers. The General Contractor shall be responsible for installing and maintaining portable fire extinguishers during construction, at each floor level, in storage sheds, and wherever flammable or combustible materials are used or stored, as required by VCC-3309 *Fire extinguishers*.

Standpipes. In buildings four stories or more in height, the General Contractor shall be responsible for installing and maintaining standpipes during construction as required by VCC-3311 *Standpipes*.

Standpipes shall be installed during construction as the work of the building progresses, beginning at 40’-0” in height. Standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring and shall be installed and ready for use

as each floor progresses. Free access from the street to such standpipes shall be maintained at all times. Materials shall not be stored within 5'-0" of any fire hydrant (or FDC connection) or in the roadway between such hydrant and the center line of the street. Failure to comply with this section shall result in the immediate stop of all work on the project until such time as the standpipes are properly placed.

Temporary heating devices. Heaters not suitable for use on wood floors shall not be set directly upon them or other combustible materials. When such heaters are used, they shall rest on suitable heat insulating material or at least 1-inch concrete, or equivalent. The insulating material shall extend beyond the heater 2 feet or more in all directions. Heaters used in the vicinity of combustible tarpaulins, canvas, or similar coverings shall be located at least 10 feet from the coverings. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material. Solid fuel salamanders are prohibited in buildings and on scaffolds. LP tanks shall be in approved locations. All devices require a permit from the Fire Marshal.

Hot work permit. Welding, cutting, open torches and other hot work operations and equipment shall comply with requirements of the *Virginia Statewide Fire Prevention Code*. LP tanks shall be in approved locations. A permit shall be obtained from the Fire Marshal.

2.5 Fire Protection and Safety Requirements for Partially Occupied Buildings

General. The existing fire protection, egress paths, and fire-resistant construction protection required for occupied areas shall be maintained at all times while ongoing construction in unoccupied areas is in progress.

Material storage.

- **Noncombustible storage, area limitations.** Noncombustible materials are those that do not support combustion and are not readily ignitable. Examples of noncombustible materials are: drywall; metal studs, fire retardant lumber; metal doors; solid-core wood doors, including packaging aids without voids; sheet metal ducts; masonry; noncombustible insulation; plumbing fixtures; light fixtures wrapped in tight plastic; and other materials of similar characteristics.

Noncombustible storage may be unlimited in area; however, the weight of material stored shall not exceed the structural design capacity of the floor.

- **Combustible storage, area limitations.** Combustible materials are those that readily support combustion or are readily ignitable. Examples of combustible materials are: hollow core wood doors; wood studs, paneling and other wood products; carpet and padding; vinyl core trim and base; insulation with combustible vapor facing; noncombustible products wrapped in large quantities of combustible packaging or storage aids, and other materials of similar characteristics.

Combustible storage shall be limited to 2,500 cubic feet or 10 percent of the floor area, whichever is smaller. The weight of material stored shall not exceed the structural design capacity of the floor. The Owner shall be responsible for obtaining a Fire Prevention Code Permit

SECTION II – SAFEGUARDS DURING CONSTRUCTION

for combustibile storage exceeding these limitations pursuant to the Virginia Statewide Fire Prevention Code. Combustible storage areas located on an occupied floor shall be separated from the occupied areas by one-hour fire-resistance rated fire partitions.

- **Storage arrangement.** Stored materials shall be arranged in neat piles with the floor kept broom clean and free of construction debris. Egress aisles shall be maintained. Storage shall be kept a minimum of 2'-0" below ceilings, sprinkler heads, or the lowest member of the floor/ceiling or roof/ceiling assembly.

Fire suppression system requirements.

- Sprinkler systems shall comply with this section and VCC-3312 *Automatic sprinkler system*.
- In fully sprinkler-protected buildings, sprinkler protection shall be operational at all times throughout the entire building, including areas under construction.

2.6 Occupancy Requirements

It is the responsibility of the Owner to obtain a certificate of occupancy for a building shell prior to any tenant occupancies. It is the responsibility of building "tenants" to file for and obtain a certificate of occupancy for individual commercial tenant spaces prior to occupancy.

This section is meant to highlight typical Building Safety Division occupancy requirements and should not be considered an all-inclusive list. Other City departments, including Public Works, Planning, Zoning, and others will have separate requirements, not mentioned here, that are required prior to the issuance of certificates of occupancy.

Certificate of occupancy. A certificate of occupancy is required prior to initial use or occupancy, or a change in use or occupancy, of a building or tenant space. The certificate of occupancy is issued by the City.

A new certificate of occupancy is required for:

- A new building or tenant space.
- A new business in an existing tenant space (requires certificate of occupancy from zoning)
- Change of Group classification of a building or tenant space.
- Increase or decrease in gross floor area of a building or tenant space.
- Change in business ownership or trade name.

In renovations of an existing building or an existing tenant space having a valid certificate of occupancy, final inspection approvals may serve as the revised certificate of occupancy and a new certificate of occupancy is not required. Change of tenant requires a new certificate of occupancy.

A pre-occupancy meeting may be required for larger projects and phased-development occupancies.

Building core and shell completion. The following building components, fire protection systems and life safety features shall be completed:

- Exit stairs.
- Grade-level exits, lobbies, corridors and passageways.

- Required exit lights and emergency lighting.
- Elevator shaft enclosures.
- Elevators and elevator emergency recall system (at least one elevator shall be approved and operational in high-rise buildings), or elevators shall be locked out of service.
- Approved elevator inspection by National Elevator Inspection Services, Inc. (NEIS).
- Required fireproofing of structural members in the core and occupied areas.
- Firestopping of wiring, piping and other penetrations, both vertical and horizontal, in floors, ceilings and walls.
- Sprinkler systems and fire suppression systems - building core and shell.
- Fire alarm systems - building core and shell.
- Special locking devices - building core and shell.
- Emergency and standby power systems – building core and shell.
- Fairfax County Water Authority water meter.
- Material storage areas complying with this document.
- Removal of combustible trash and construction debris.

All sprinklers, standpipes, alarms, signaling systems and other required fire-suppression or firefighting systems shall be activated throughout the entire structure prior to building shell certificate of occupancy. Under no conditions shall any fire suppression or firefighting system be shut off in any occupied area, unless the valve or other activation control mechanism is continuously manned during the period the system is shut off.

Subject to prior approval by the Fire Marshal and by the Building Official, a fire watch shall be instituted during the time any fire suppression or firefighting system is out of service. See *Falls Church City Code* Section 18-19 Appendix A *Requirements for a Fire Watch*. The General Contractor shall also notify the Fire Marshal when any fire suppression or firefighting system is placed out of service.

Note: Under Section 905.4 (item 6) of the *Virginia Statewide Fire Prevention Code*, the City of Falls Church Fire Marshal requires an additional hose connection be provided when:

- The most remote portion of a nonsprinklered floor or story is more than 150 feet from a hose connection or,
- The most remote portion of a sprinklered floor or story is more than 200 feet from a hose connection.

The location of the additional hose connections shall be approved by the Fire Marshal.

Building core and shell final inspections. A certificate of occupancy for a building shell may be obtained after building core and shell final inspections are approved by the appropriate City organizations:

- For buildings subject to special inspections, the final report of special inspections - by Building Official.
- Electrical, mechanical and plumbing systems final - building core and shell - by Building Safety Division.
- Elevators final – by NEIS.

SECTION II – SAFEGUARDS DURING CONSTRUCTION

- Sprinkler system and fire suppression system finals - building core and shell - by Building Safety Division.
- Fire alarm system final - building core and shell - by Building Safety Division.
- Special locking devices final - building core and shell - by Building Safety Division.
- Fire lanes final - by Building Safety Division and Fire Marshal.
- Emergency and standby power systems – by Building Safety Division.
- Fuel storage tanks final - by Building Safety Division and Fire Marshal.
- Health systems final - building core and shell - by Fairfax County Department of Health Services and Fire Marshal (as applicable, for health spas, food establishments, medical buildings, swimming pools, commercial kitchens, etc.).
- As-Built Site Plan – by Department of Public Works and Planning Division.
- Occupant load postings - by the Building Official. The Owner shall request occupant-load posting documents for common area rooms of assembly with an occupant load of 50 or more, and as otherwise required by the VCC.
- Assembly permit required for uses of type E (over 50), H, I and R (high rise). – by Fire Marshal.
- Final Report of system pre-test for in-building communication coverage, engineers report on radio amplification, and Fire Marshal verification test of communication system – by Fire Marshal.
- Fire Department keys for Knox Box – by Fire Marshal.
- Building services and systems maintenance package – by Building Safety Division and Fire Marshal. Prepare, for the Owner, a complete package of building services and systems documents that will facilitate compliance with the Virginia Statewide Fire Prevention Code. Documentation shall include the manufacturers’ instructions along with the associated maintenance, testing and inspection requirements and schedules for the following:
 - Fuel-fired appliances.
 - Emergency and standby power systems.
 - Electrical equipment, wiring and hazards.
 - Mechanical refrigeration.
 - Approved mechanical balancing and commissioning reports.
 - Elevator operation, maintenance and fire service keys.
 - Stationary storage battery systems.
 - Commercial kitchen hoods.
 - Commercial kitchen cooking oil storage.

All the above final inspections are required prior to:

- Occupancy - building core and shell - by Building Safety Division and Fire Marshal. The Owner shall request this inspection prior to receiving the certificate of occupancy (either before or after the building final inspection).
- Building final - building core and shell - by the Building Official.

After all the above items are satisfied, the final core-and-shell certificate of occupancy will be issued.

Tenant space final inspections. The certificate of occupancy for a building core and shell is required prior to a certificate of occupancy for any tenant space in a building. A certificate of occupancy for a tenant space may be obtained after tenant space final inspections are approved by the appropriate City organizations:

- For tenant spaces subject to special inspections, the final report of special inspections - by the Building Official.
- Electrical, mechanical and plumbing systems final, including cross connections - tenant space - by Building Safety Division.
- Elevators final - tenant space - by Building Safety Division.
- Sprinkler system and fire suppression system finals - tenant space - by Building Safety Division.
- Fire alarm system final - tenant space – by Building Safety Division.
- Special locking devices final - tenant space – by Building Safety Division.
- Health systems final - tenant space - by Fairfax County Department of Health Services (as applicable, for health spas, food establishments, medical buildings, swimming pools, commercial kitchens, etc.).
- Occupant load postings - by the Building Official. The Owner or tenant shall request occupant load posting documents for rooms of assembly with an occupant load of 50 or more, and as otherwise required by the VCC.

All the above final inspections are required prior to:

- Occupancy - tenant space – by Building Safety Division and Fire Marshal. The Owner or tenant shall request this inspection prior to receiving for the certificate of occupancy (either before or after the building final inspection).
- Building final - tenant space – by Building Safety Division.

SECTION III – ADDITIONAL CONSTRUCTION-RELATED REQUIREMENTS

3.1 Construction Hours

Construction of buildings and projects. Per the *Falls Church City Code* Sec. 14-51, it shall be unlawful for any person within the City to operate equipment or perform any outside construction, demolition, alteration or repair work on buildings, structures or projects or to operate any equipment, including but not limited to, any pile driver, pneumatic hammer, derrick, hoist or other construction device during the nighttime, or during the daytime in such a manner to cause a noise disturbance. Daytime denotes the local time of day between the hours of 7:00 a.m. and 9:00 p.m. on weekdays and between the hours of 9:00 a.m. and 9:00 p.m. on Saturdays, Sundays and local legal holidays.

3.2 Use of Public Right-of-Way

Separate permits are required for any construction occurring in the right-of-way, or for use of the public right-of-way for construction fences, sidewalk sheds, trailers and storage. The contractor is expected to contain construction within the site to the greatest extent possible. Requests to utilize the public right-of-way for construction access or staging will be critically analyzed with regards to public impacts and benefits. The Department of Public Works administers all right-of-way permits.

3.3 Related Permits

Separate building permits are required for:

- Support of excavation systems (e.g. sheeting and shoring, underpinning)
- Construction trailers
- Fire sprinkler
- Tower cranes
- Personnel / material hoists and construction elevators
- Pedestrian covered walkways
- Security / door locking
- Temporary electric

Note: Blasting operations and monitoring require a permit from the Fire Marshal.

3.4 Construction Offices Inside Buildings under Construction

For buildings under construction, no space shall be utilized as a construction office without approval and permit by the Building Official.

3.5 Earth-Retention Systems

The requirements of this section shall apply when construction includes earth retention systems or trenching operations, whether permanent or temporary. Earth retention systems include, but are not limited to:

- Building foundation walls.

SECTION III – ADDITIONAL CONSTRUCTION-RELATED REQUIREMENTS

- Retaining walls.
- Soldier piles and lagging, with or without tie-backs, post-tensioning or rock anchors.
- Soil nailing systems.
- Drilled piers or other structural means for stabilization of slopes.
- Sheet piling.
- Braced or shored walls.
- Tied-back walls.
- Slurry walls.
- Trench bracing.

Systems. The following earth retention systems are subject to special inspection:

- All earth retention systems retaining 10'-0" or more of unbalanced fill;
- All trenching operations deeper than 8'-0";
- Segmental block retaining walls of any height, with geosynthetic restraints when designed as restrained walls rather than gravity walls.
- Soldier piles and lagging of any height, with post-tensioned tie-backs.

Submittal Requirements

Earth retention system shall be designed by a structural engineer licensed in the Commonwealth of Virginia. Designs shall be submitted to the Structural Engineer of Record for review, comment and approval prior to submitting to the Building Official. In addition to the structural design, the construction document shall include the following:

- System installation criteria:
 - Load testing and movement acceptance criteria for anchors.
 - Allowable lateral movement.
 - Tieback length (bonded and non-bonded) and angle.
- Any dewatering requirements assumed in the earth retention system design. See Section 2.2 for additional requirements.
- Slope protection requirements.
- Recommendations for protecting adjoining properties, including existing public and private streets.

The City encourages the use of temporary tiebacks as part of sheeting and shoring systems. When it becomes necessary to encroach on adjoining public or private property to drive piles or install tie backs, the applicant shall obtain written permission from the Owner of the adjacent property and submit a copy to the Building Official.

Excavation to install lagging shall not exceed five feet high and all lagging shall be installed prior to further excavation. Unless specifically approved by the earth retention system design professional, material stockpiles shall be a minimum distance away from excavation equal to one-half the excavation depth.

3.6 Tower Cranes

The requirements of this section shall apply whenever a tower crane is to be erected on-site. A separate tower-crane permit is required. Documents shall include the crane location and boom swing. The General Contractor and suppliers of tower cranes are responsible for the safe construction, installation and use. The Structural Engineer of Record is responsible for verifying the structural adequacy of the building to support crane imposed loads. Crane booms shall not swing over public streets without special approval by the Building Official. A building permit for the crane and crane foundation is required. An electrical permit is also required.

Submittal Requirements

- Construction, fabrication and erection documents for the crane and its foundation shall be prepared by registered design professionals.
- Specifications for cranes shall include manufacturer's operating model number, hook height, boom length, and manufacturer's specifications relative to overturn moment, slewing moment, vertical load (minimum and maximum), shear per bolt group, uplift per bolt group, compression per corner and horizontal shear (minimum and maximum).
- Fabrication and erection documents shall include the crane location and crane boom swing.
- Fabrication and erection documents shall include structural calculations and design of crane foundations. Plans and calculations shall clearly indicate footing dimensions, required compressive strength of concrete, steel reinforcement, and required allowable soil bearing pressure. Concrete mix design, and steel reinforcement, shall be reviewed and approved by the registered design professional responsible for design of crane foundations.
- A copy of notification provided to Federal Aviation Administration (FAA).
- The General Contractor shall submit a written contingency plan to ensure continuous operation of pumps and dewatering efforts in the event of a sudden power outage. See Section 2.2.

Inspection Requirements

- The SIER shall conduct foundation inspections, including special inspections for soil bearing capacity, footing construction, and concrete tests.
- Crane erection inspections.
 - Prior to assembly, the crane components shall be inspected for structural defects by the crane or hoist manufacturer or a registered design professional.
 - The crane shall be assembled according to the manufacturer's specifications. All bolts shall be secured in accordance with manufacturer's project specifications, and shall be inspected by the General Contractor at erection, 30 days after erection, and every 90 days thereafter.
 - The crane shall be load tested per OSHA requirements and in accordance with manufacturer's instruction.
 - The General Contractor shall, after review by the appropriate registered design professionals, submit a letter of completion of installation to the Building Official for approval. Approval is required prior to use of the crane.
- An approved electrical inspection by the Building Safety Division is required.

- Prior to the use of the crane, the SIER shall submit to the City a final report of special inspections for the crane foundation.

3.7 Personnel / Material Hoists and Construction Elevators

The requirements of this section shall apply whenever a personnel hoist, material hoist, or construction elevator is to be erected on-site, whether free-standing or attached to the building under construction. The General Contractor and suppliers of personnel hoists, material hoists, and construction elevators are responsible for the safe construction, installation and use of the hoist or elevator. The Structural Engineer of Record is responsible for the structural design strength of the building to support the loads imposed on it by the hoist or elevator.

Personnel hoist, material hoist or construction elevator:

- A building permit for the hoist or elevator and required foundations is required.
- An electrical permit is required.

Construction, fabrication and erection documents for the hoist or elevator and its foundation shall be prepared by registered design professionals. Prior to the placement of the hoist or elevator foundation, the General Contractor, the Owner or the contractor for the hoist or elevator shall submit one record copy of the following information to the Building Official:

- Specifications for hoists shall include load lines, load and boom hoist drum brakes, swing brakes and locking devices such as pawls or dogs. The personnel platform shall be designed by a registered design professional. Hoists shall also comply with VCC-3005.4 *Personnel and material hoists* requirements, including service loads, construction, installation and field testing criteria.
- Fabrication and erection documents shall include structural calculations and design of equipment foundations. Plans and calculations shall clearly indicate footing dimensions, required compressive strength of concrete, steel reinforcement, and allowable soil bearing pressure. Concrete mix design, and steel reinforcement, shall be reviewed and approved by a registered design professional responsible for design of equipment foundations.
- For hoists or elevators located within or supported by the structure, the fabrication and erection documents shall indicate the size and location of slab openings, method of support or attachment of the hoist or elevator, service loads to be delivered to or imposed on the structure, and the inspections required. Such documents shall be reviewed and approved by the Structural Engineer of Record.

Inspection Requirements

- Prior to assembly, hoist components shall be inspected for structural defects by the hoist manufacturer or a registered design professional.
- The hoist shall be assembled according to the manufacturer's specifications. All bolts shall be secured in accordance with manufacturer's project specifications, and shall be inspected by the General Contractor at erection, 30 days after erection, and every 90 days thereafter.
- Approved electrical and building inspections by the Building Safety Division are required.

SECTION III – ADDITIONAL CONSTRUCTION-RELATED REQUIREMENTS

- Prior to the use of the hoists, the SIER shall submit to the City a final report of special inspections for the hoist foundation.
- The General Contractor shall, after review by the appropriate registered design professionals, submit a letter of completion of installation to the Building Official for approval. Approval is required prior to use.

APPENDIX I: STATEMENT OF SPECIAL INSPECTIONS

Cover Sheet

Project Name: _____ Permit Number: _____

Project Address: _____

This Statement of Special Inspections (SSI) is submitted as a condition for permit issuance in accordance with the *Virginia Construction Code*. It includes a Schedule of Special Inspections applicable to this project. The Special Inspections Engineer of Record shall keep records of specified special inspections and testing and shall furnish copies of inspections and testing reports to the Building Official and to the Registered Design Professionals of Record (RDP).

Discrepancies from the approved plans and specifications and code violations observed while conducting special inspections and material testing services shall be brought to the immediate attention of the contractor for correction, to the attention of the Building Official, and to the appropriate RDP.

A final report of special inspections documenting completion of specified special inspections and correction of any discrepancies and observed code violations noted in the inspection and testing reports shall be submitted to and approved by the Building Official prior to final building inspection approval.

Instructions:

1. Provide all required information and signatures on the first two pages. Note: signatures of Owner, Structural Engineer of Record (SER), Geotechnical Engineer of Record (GER), Special Inspections Engineer of Record (SIER) and General Contractor (GC) are required for approval.
2. Complete the Schedule of Special Inspections. This shall be done by the registered design professional in responsible charge (typically the SER). In the last column, identify the agency responsible for each individual test and inspections. Do not omit sheets from the schedule. It is acceptable to strike through sections or pages that are not applicable to the project.
3. Submit everything to the Building Official for review and approval. Once approved, the Building Official will sign the cover sheet and will provide a copy of the approved SSI to the special inspections team.

Inspection Frequency Terms (except structural steel):

C – Continuous special inspections. Requires constant monitoring of specific tasks by a special inspector. These inspections must be carried out continuously over the duration of the particular tasks.

P – Periodic special inspections. Special inspections performed by the special inspector who is intermittently present where the work to be inspected has been or is being performed.

Structural Steel Inspection Frequency Terms:

P – Perform these special inspections tasks for each welded joint or member. (AISC 360 & AISC 341)

O – Observe these special inspections items on a random daily basis. Operations need not be delayed pending these inspections. (AISC 360 & AISC 341)

Contacts and Signature Page

Owner

Company: _____ Address: _____
Phone: _____ Email: _____
Printed Name: _____ Signature and Date: _____

Structural Engineer of Record (SER)

Company: _____ Address: _____
Phone: _____ Email: _____
Printed Name: _____ License Number: _____
Signature: _____ Date: _____

Geotechnical Engineer of Record (GER)

Company: _____ Address: _____
Phone: _____ Email: _____
Printed Name: _____ License Number: _____
Signature: _____ Date: _____

Special Inspections Engineer of Record (SIER)

Company: _____ Address: _____
Phone: _____ Email: _____
Printed Name: _____ License Number: _____
Signature: _____ Date: _____

Inspecting and Testing Agency (TA)

Company: _____ Address: _____
Phone: _____ Email: _____
Printed Name: _____ License Number: _____

Architect of Record (AR)

Company: _____ Address: _____
Phone: _____ Email: _____
Printed Name: _____ License Number: _____

General Contractor (GC)

Company: _____ Address: _____
Phone: _____ Email: _____
Printed Name: _____ License Number: _____
Signature: _____ Date: _____

Building Official or agent

Name: _____ Signature and Date: _____

Schedule of Special Inspections

Fabricators (VCC 1704.2.5) <i>Where fabrication of structural load-bearing members and assemblies is being performed on the premises of a fabricator's shop, special inspections of the fabricated items shall be required. Special inspections at fabricator's shop are not required where fabricator is approved to perform such work without special inspections. Submit proof of certification to Building Official for approval.</i>	Name of Fabrication Shop (or N/A)	Agent (or N/A)
1. Structural steel		
2. Open-web steel joists and girders		
3. Precast / prestressed concrete		
4. Wood construction, including prefabricated wood trusses, wall panels, floor panels, and roof assemblies		
5. Cold-formed steel trusses		
6. Other		

Structural Steel Welding (VCC 1705.2) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Observe or Perform (O/P)	Agent at Fabricator's Shop	Agent at Job Site
Inspection Tasks Prior to Welding AISC Table N5.4-1			
Welding procedure specification (WPSs) available	P		
Manufacturer certifications for welding consumables available	P		
Material identification (type/grade)	O		
Welder identification system	O		
Fit-up of groove welds (include joint geometry) <ul style="list-style-type: none"> • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable) 	O		
Configuration and finish of access holes	O		
Fit-up of fillet welds <ul style="list-style-type: none"> • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) 	O		

APPENDIX I:
STATEMENT OF SPECIAL INSPECTIONS

Inspection Tasks During Welding AISC Table N5.4-2			
Use of qualified welders	O		
Control and handling of welding consumables <ul style="list-style-type: none"> • Packaging • Exposure control 	O		
No welding over cracked tack welds	O		
Environmental conditions <ul style="list-style-type: none"> • Wind speed within limits • Precipitation and temperature 	O		
WPS followed <ul style="list-style-type: none"> • Setting on welding equipment • Travel speed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min/max) • Proper position (F, V, H, OH) 	O		
Welding techniques <ul style="list-style-type: none"> • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirements 	O		
Inspection Tasks After Welding AISC Table N5.4-3			
Welds Cleaned	O		
Size, length and location of welds	P		
Welds meet visual acceptance criteria <ul style="list-style-type: none"> • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld Size • Undercut • Porosity 	P		
Arc strikes	P		
K-area	P		
Backing removed and weld tabs removed (if required)	P		
Repair activities	P		
Document acceptance or rejection of welded joint or member.	P		

Structural Steel High-Strength Bolting (VCC 1705.2) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Observe or Perform (O/P)	Agent at Fabricator's Shop	Agent at Job Site
Inspection Tasks Prior to Bolting AISC Table N5.6-1			
Manufacturer's certification available for fastener material	P		
Fasteners marked in accordance with ASTM requirements	O		
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O		
Proper bolting procedure selected for joint detail	O		
Connecting elements, including the appropriate faying surface condition and the preparation, if specified, meet applicable requirements.	O		

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Pre-installation verification testing by installation personal observed and documented for fastener assemblies and methods used.	O		
Proper storage provided for bolts, nuts, washers and other fastener components	O		
Inspection Tasks During Bolting AISC Table N5.6-2			
Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	O		
Joint brought to the snug-tight condition prior to the pretensioning operation	O		
Fastener component not turned by the wrench prevented from rotating	O		
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges.	O		
Inspection Tasks After Bolting AISC Table N5.6-3			
Document acceptance or rejection of bolted connection	P		

Steel Elements of Composite Construction Prior to Concrete Placement – AISC Table N6.1 <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Observe or Perform (O/P)	Agent at Fabricator's Shop	Agent at Job Site
Placement and installation of steel deck	P		
Placement and installation of steel headed stud anchors	P		
Document acceptance or rejection of steel element	P		

Steel Construction other than Structural Steel (VCC 1705.2.2) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER" or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Material verification of cold-formed steel deck:		
a. Identification markings to conform to ASTM standards specified in the approved construction documents. Per Applicable ASTM material standards	P	
b. Manufacturer's certified test reports	P	
2. Inspection of welding:		
a. Cold-formed steel deck:		
1) Floor and roof deck welds. Per AWS D1.3.	P	
b. Reinforcing steel (Per AWS D1.4; ACI 318: Section 3.5.2):		
1) Verification of weldability of reinforcing steel other than ASTM A706	P	
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement	C	
3) Shear reinforcement	C	
4) Other reinforcing steel.	P	
3. Cold-formed steel trusses spanning 60 feet or greater:		
a. Verify that the temporary installation restraint / bracing is installed in accordance with the approved truss submittal package.	P	
a. Verify that the permanent individual truss member restraint / bracing is installed in accordance with the approved truss submittal package.	P	

Concrete Construction (VCC 1705.3) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER" or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Inspection of reinforcing steel, including prestressing tendons, and placement. ACI 318: 3.5, 7.1-7.7; VCC 1910.4	P	

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2. Inspection of reinforcing steel welding in accordance with Table 1705.2.2, Item 2b. AWS D1.4; ACI 318:3.5.2	---	
3. Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used. ACI 318: 8.1.3, 21.1.8; VCC 1908.5, 1909.1	P	
4. Inspection of post-installed anchors installed in hardened concrete members. ACI 318: 3.8.6, 8.1.3, 21.1.8; VCC 1909.1	P	
5. Verifying use of required design mix. ACI 318: Ch.4, 5.2-5.4 VCC 1904.2, 1910.2, 1910.3	P	
6. At the time fresh concrete is sampled, fabricate specimens for strength tests, perform slump and air content test, and determine the temperature of the concrete. ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8; VCC 1910.10	C	
7. Inspection of concrete and shotcrete placement for proper application techniques. ACI 318: 5.9, 5.10 VCC 1910.6, 1910.7, 1910.8	C	
8. Inspection for maintenance of specified curing temperature and techniques. ACI 318: 5.11-5.13; VCC 1910.9	P	
9. Inspection of prestressed concrete: ACI 318: 18.20 ACI 318: 18.18.4 a. Application of prestressing forces. b. Grouting of bonded prestressing tendons in the seismic force-resisting system.	C	
10. Erection of precast concrete members. ACI 318: Ch.16	P	
11. Verification of 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. ACI 318:6.2	P	
12. Inspect formwork for shape, location, and dimensions of the concrete member being formed, shoring and reshoring. ACI 318: 6.1.1	P	

Masonry Construction – Level B (VCC 1705.4) <i>In Agent box, identify agency performing testing and inspections. Write “SIER”, “SER”, or “N/A”.</i>	Cont. or Period. (C/P)	Agent
Prior to Construction (Spec Article 1.5, TMS-602/ACI 530.1-11)		
1. Review material certificates, mix designs, test results and construction procedures. Verify that materials conform to the requirements of the approved construction documents. (ACI 530, Table 1.19.2, 1)	P	
As Construction Begins (Table 1.19.2, TMS-402/ACI 530-11):		
1. Proportions of site-prepared mortar. Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C 270, and that it is mixed in accordance with Article 2.6 A of TMS-602/ACI 530.1. (ACI 530, Table 1.19.2, 2.a)	P	
2. Construction of mortar joints. Verify that mortar joints comply with Article 3.3 B of TMS-602/ACI 530.1. (ACI 530, Table 1.19.2, 2.b)	P	
3. Grade and size of prestressing tendons and anchorages. Verify that prestressing tendons comply with Article 2.4 B of TMS-602/ACI 530.1 and that anchorages, couplers, and end blocks comply with Article 2.4 H. (ACI 530, Table 1.19.2,2.c)	P	
4. Location of reinforcement, connectors, and prestressing tendons and anchorages. Verify that reinforcement is placed in accordance with Article 3.4 of TMS-602/ACI 530.1. Prestressing tendons shall be placed per Article 3.6 A. (ACI 530, Table 1.19.2, 2.d)	P	
5. Prestressing technique. Verify that prestressing technique complies with Article 3.6 B of TMS-602/ACI 530.1. (ACI 530, Table 1.19.2,2.e)	P	
6. Properties of thin-bed mortar for AAC masonry. Verify that mortar complies with Article 2.1 C of TMS-602/ACI 530.1. Continuous inspection for the first 5000 square feet of wall and periodic for all following applications. (ACI 530, Table1.19.2, 2.f)	P / C	
Prior to Grouting (TABLE 1.19.2, TMS-402/ACI 530-11):		
1. Grout space. Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per Article 3.2	P	

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D and 3.2 F of TMS-602/ACI 530.1. (ACI530, Table 1.19.2, 3.a)		
2. Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages. Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors comply with the approved construction documents and Section 1.16 of TMS 402/ACI 530. (ACI530, Table 1.19.2, 3.b)	P	
3. Placement of reinforcement, connectors, and prestressing tendons and anchorages. Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors are installed in accordance with the approved construction documents and Articles 3.2 E, 3.4, and 3.6 A of TMS 602/ACI 530.1. (ACI 530, Table 1.19.2, 3.c)	P	
4. Proportions of site-prepared grout and prestressing grout for bonded tendons. Verify that grout is proportioned per ASTM C 476 and has a slump between 8-11 inches. Self-consolidated grout shall not be proportioned onsite. (ACI530, Table 1.19.2, 3.d)	P	
5. Construction of mortar Joints. Verify that mortar joints are placed in accordance with Article 3.3 B of TMS 602/ACI 530.1. (ACI 530, Table 1.19.2,3.e)	P	
During Masonry Construction (TABLE 1.19.2, TMS-402/ACI 530-11):		
1. Size and location of structural elements. Verify the locations of structural elements with respect to the approved plans and confirm that tolerances meet the requirements of Article 3.3 F of TMS 602/ACI 530.1. (ACI 530, Table 1.19.2, 4.a)	P	
2. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction. Verify that correct anchorages and connections are provided per the approved plans and Sections 1.16.4.3 and 1.17.1 of TMS 402/ACI 530. (ACI 530, Table 1.19.2, 4.b)	P	
3. Welding of reinforcement. Verify welded reinforcement meet the requirements of Section 2.1.7.7.2, 3.3.3.4(c), and 8.3.3.4(b) of TMS 402/ACI 530. (ACI 530, Table 1.19.2,4.c).		
4. Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F). Verify that cold-weather construction is performed in accordance with Article 1.8 C of TMS 602/ACI 530.1 and hot weather construction per Article 1.8 D of TMS 602/ACI 530.1. (ACI 530, Table 1.19.2, 4.d)	P	
5. Application and measurement of prestressing force. Verify the proper prestressing force is applied per Article 3.6 B of TMS 602/ACI 530.1. (ACI 530, Table 1.19.2,4.e)	C	
6. Placement of grout and prestressing grout for bonded tendons is in compliance. Verify placement of grout is done in accordance with Article 3.5 of TMS 602/ACI 530.1 and placement of grout for bonded tendons is in accordance with Article 3.6 C of TMS 602/ACI 530.1. (ACI 530, Table 1.19.2, 4.f)	C	
7. Placement of AAC masonry units and construction of thin-bed mortar joints. Verify that mortar is placed in accordance with Article 3.3 B.8 of TMS-602/ACI 530.1. Continuous inspection for the first 5000 square feet of wall and periodic for all following applications. (ACI 530, Table 1.19.2,4.g)	P / C	
8. Observation of grout specimens, mortar specimens, and/or prisms. Confirm that specimens/prisms are performed as required by Article 1.4 of TMS-602/ACI 530.1. (ACI 530, Table 1.19.2, 5)	P	
Minimum Testing (TABLE 1.19.2, TMS-402/ACI 530-11):		
1. Verification of Slump Flow and Visual Stability Index (VSI) for self-consolidating grout. Compressive strength tests should be performed in accordance with ASTM C 1019 for slump flow and ASTM C 1611 for VSI. (ACI 530, Table 1.19.2)	---	
2. Verification of f'm and f'AAC. Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Article 1.4 B of TMS 602/ACI 530.1 prior to construction. (ACI 530, Table 1.19.2)	---	

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Wood Construction (VCC 1705.5) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. High-load diaphragms. Verify thickness and grade of sheathing, size of framing members at panel edges, nail/staple diameters and length, and the number of fastener lines and fastener spacing are per approved plans. (VCC 1705.5.1)	P	
2. Metal-plate-connected wood trusses spanning 60 feet or greater. Verify that temporary and permanent truss bracing is installed in accordance with approved truss package. (VCC 1705.5.2)	P	

Soils (VCC 1705.6) <i>In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Verify materials below shallow foundation are adequate to achieve the design bearing capacity.	P	
2. Verify excavations are extended to proper depth and have reached proper material.	P	
3. Perform classification and testing of compacted fill material.	P	
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	C	
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	P	

Support of Excavation: Sheeting and Shoring and Underpinning <i>In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Soldier piles. Verify materials, location, size, orientation and plumbness. For drilled piles, verify bottom of hole elevation and observe backfilling operation.	C	
2. Timber lagging. Verify materials. Visually inspect for size, location and condition.	P	
3. Tieback installation. Visually inspect tieback installation to verify size, length, number of strands, elevation, and angle of declination. Verify that tieback free, bond, and tail lengths conform to the construction documents. Inspect grouting of tiebacks and take samples.	C	
4. Tieback Testing. Verify hydraulic jacks have current calibrations and that the gauge is calibrated in the appropriate increments. Continuously inspect the contractor's proof of performance test. Continuously verify that the lock-off loads are consistent with the construction documents. Review all tieback proof and performance test logs.	C	
5. Bracing Members. Verify that member sizes, locations, and materials conform to construction documents. Welding in accordance with AWS D1.1. Verify welder certifications.	P	
6. Underpinning. Visually inspect the bottom of the pits to verify that they are free of loose material. Verify bearing capacity as required by construction documents. Inspect installation of concrete and take samples. Periodically verify pit depth and plumbness. Visually inspect pit boards for size and condition.	P	
7. Monitoring. Measure lateral deflection, vertical heave / settlement, and angle of inclination of every 2 nd or 3 rd soldier piles. Verify that soldier pile movement is below the threshold value established in the approved construction documents. Frequency of monitoring shall be twice weekly during excavation and once weekly during construction.	P	

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Driven Deep Foundation Elements (VCC Table 1705.7) <i>In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Verify element materials, sizes and lengths comply with the requirements.	C	
2. Determine capacities of test elements and conduct additional load tests, as required.	C	
3. Observe driving operations and maintain complete and accurate records for each element.	C	
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blow per foot of penetration, determine required penetration to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	C	
5. For steel elements, perform additional inspections in accordance with section 1705.2.	---	
6. For concrete elements and concrete-filled elements, perform additional inspections in accordance with section 1705.3.	---	
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.	---	

Cast-in-Place Deep Foundation Elements (VCC 1705.8) <i>In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Observe drilling operations and maintain complete and accurate records for each element.	C	
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.	C	
3. For concrete elements, perform additional inspection in accordance with section 1705.3.	---	

Helical Pile Foundations (VCC 1705.9) <i>In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Record installation equipment used, pile dimensions, tip elevations, final depth, and final installation torque.(IBC 1705.9)	C	
2. Verify that helical piles used match the approved submittal.	C	

Push Pier Foundations <i>In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Verify supplied bracket and pier elements are per approved submittal and manufacturer's requirements. Verify bracket plumbness, bearing, and anchorage.	P	
2. Verify pier elements, including lead and extension sections, installed per manufacturer's recommendations.	P	
3. Observe and document field proof load tests.	C	
4. Verify materials, densities, and lift thicknesses during backfill placement and compaction.	C	

Sprayed Fire-Resistant Materials SFRM (VCC 1705.13) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Surface condition. Prior to application, confirm that surface has been prepared per the approved fire-resistance design and manufacturer's instructions. (IBC 1705.13.2)	P	
2. Application. Prior to application, confirm that the substrate meets the minimum	P	

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ambient temperature per the approved fire-resistance design and manufacturer's instructions. (IBC 1705.13.3)		
3. Material thickness. Verify that the thickness of the SFRM to structural elements is not less than the thickness require by the fire-resistant design in more than 10 percent of the measurement, but in no case less than minimum allowable thickness required by 1705.13.4.1. (IBC 1705.13.4)	P	
4. Material density. Verify that the density of the SFRM to structural elements is not less than the density specified in the fire-resistant design. (IBC 1705.13.5)	P	
5. Bond strength. Verify cohesive/adhesive bond strength of the cured SFRM applied to the structural elements is not less than 150 psf. (IBC 1705.13.6)	P	

Mastic and Intumescent Fire-Resistant Coatings (VCC 1705.14) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Surface preparation. Prior to application, confirm that surface temperature and substrate are acceptable in accordance with AWCI 12-B. (AWCI 12-B, 3)	P	
2. Thickness. Final thickness of coating must be verified in multiple locations prior to applying top coat per AWCI 12-B. (AWCI 12-B, 6)	P	

Exterior Insulation and Finish Systems (EIFS) (VCC 1705.15) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Material and installation. Verify that water-resistive barrier, complying with ASTM E 2570, is installed appropriately over a sheathing substrate. (AWCI 12-B, 7)	C	

Fire-Resistant Penetrations and Joints (IBC 1705.16) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Penetration firestops. Listed systems shall be inspected in accordance with ASTM E 2174. (IBC 1705.16.1)	P	
2. Fire-resistant joint sytems. Listed systems shall be inspected in accordance with ASTM E 2393. (IBC 1705.16.2)	P	

Smoke Control (VCC 1705.17) <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Verify device locations and perform leakage testing. Perform during erection of ductwork and prior to concealment. (IBC 1705.17.1.1)	P	
2. Pressure difference testing, flow measurements and detection and control verification. Perform prior to occupancy and after sufficient completion. (IBC 1705.17.1.2)	P	

Fiber-Reinforced Polymer (FRP) Composite System <i>In Agent box, identify agency performing testing and inspections. Write "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Surface condition. Prior to application, confirm that surface has been prepared per the approved FRP design and manufacturer's instruction. Verify ambient and concrete temperatures and surface dryness.	P	
2. Installation. Verify resin and/or adhesive mix ratios. Verify saturation, application, fiber orientation, splices and overlaps, number of layers, and application of special coatings,	P	

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including fireproofing, per the approved FRP design and manufacturer's instructions.		
3. Curing. Verify procedures, cure temperature ranges and curing times per manufacturer's instructions.	P	
4. Identification and Repair of Defects. Visually inspect for complete adherence to substrate. Sound suspect area and map defects. Inspect repairs of all defects.	P	
5. Testing Requirements. Verify tensile properties meet or exceed FRP composite system properties per approved documents in accordance with ASTM D3039.	P	

Segmental Retaining Walls <i>In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent
1. Layout. Verify wall location, grades and affected structures/utilities per approved documents.	P	
2. Site Conditions. Verify foundation soil properties, retained soil and wall heights, adjacent slopes, and wall loading per approved documents.	P	
3. Materials. Verify gravel fill, wall units, shear connectors, drainage pipe, geosynthetic reinforcement, reinforced soil and retained soils per approved documents.	C	
4. Installation. Verify leveling pad dimensions and compaction. Verify gravel fill, reinforced fill, and retained soil lifts and compaction. Verify drainage location and slope. Verify SRW unit and geosynthetic reinforcement placement.	C	

Other Special Inspections <i>Provide brief description of any required tests or inspections not otherwise listed in schedule. In Agent box, identify agency performing testing and inspections. Write "GER", "SIER", "SER", or "N/A".</i>	Cont. or Period. (C/P)	Agent

APPENDIX III: BUILDING CONSTRUCTION ORGANIZATIONS

The American Association for Laboratory Accreditation (A2LA)

301-644-3248

www.a2la.org

American Concrete Institute (ACI)

248-848-3700

www.concrete.org

ACI 318-11 *Building Code Requirements for Structural Concrete*

American Institute of Steel Construction, Inc. (AISC)

312-670-2400

www.aisc.org

AISC 303-10 *Code of Standard Practice for Steel Buildings and Bridges*

AISC STD cert. Certification: Standard for Steel Building Structures

AISC CSE cert. Certification: Certified Steel Erector

AISC 341-10 *Seismic Provisions for Structural Steel Buildings, including Supplement No. 1*

AISC 360-10 *Specification for Structural Steel Buildings*

American Iron and Steel Institute (AISI)

202-452-7100

www.steel.org

American Society of Civil Engineers (ASCE/SEI) Structural Engineering Institute

1-800-548-2723

www.asce.org

American Society for Nondestructive Testing (ASNT)

1-800-222-2768

www.asnt.org

ASTM International (ASTM)

610-832-9500

www.astm.org

ASTM A 706/A 706M-09 *Standard specification for low-alloy steel deformed and plain bars for concrete reinforcement*

ASTM A 751-08 *Standard test methods, practices and terminology for chemical analysis of steel products*

ASTM C 31/C 31 M -08b *Standard practice for making and curing concrete test specimens in the field*

ASTM C 39-10 *Standard test method for compressive strength of cylindrical concrete specimens*

ASTM C 42-10a *Standard test method for obtaining and testing drilled cores and sawed beams of concrete*

ASTM C 94/C 94M-09 *Standard specification for ready-mixed concrete*

ASTM C 172-08 *Standard practice for sampling ready-mixed concrete*

ASTM C 685-10 *Standard specification for concrete made by volumetric batching and continuous mixing*

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- ASTM C 803-03(2010) *Standard test method for penetration resistance of hardened concrete*
ASTM C 1077-11a *Standard practice for laboratories testing concrete and concrete aggregates for use in construction and criteria for laboratory evaluation*
ASTM D 1557-09 *Standard test methods for laboratory compaction characteristics of soil using modified effort (56,000 ft-lb/ft³)*
ASTM D 2487-06e1 *Standard practice for classification of soils for engineering purposes (Unified soil classification system)*
ASTM D 3740-10 *Standard practice for minimum requirements for agencies engaged in testing and/or inspection of soil and rock as used in engineering design and construction*
ASTM E 329-02 *Standard specification for agencies engaged in the testing and/or inspection of materials used in construction*
ASTM E 605-93(2006) *Standard test methods for thickness and density of sprayed fire-resistive material (SFRM) applied to structural members*
ASTM E 736-00(2006) *Test method for cohesion/adhesion of sprayed fire-resistive materials applied to structural members*
ASTM F 606-11 *Standard test methods for determining the mechanical properties of externally and internally threaded fasteners, washers, direct tension indicators, and rivets*

The Association of the Wall and Ceiling Industries International

703-538-1600

www.awci.org

- AWCI 12-B-98 *Technical Manual 12-B, second edition: Standard practice for the testing and inspection of field applied thin film intumescent fire-resistive materials; an annotated guide*

American Welding Society (AWS)

1-800-443-9353

www.aws.org

- AWS D1.1-10 *Structural welding code - Steel*
AWS D1.3-98 *Structural welding code - Sheet steel*
AWS D1.4-98 *Structural welding code - Reinforcing steel*

Brick Industry Association (BIA)

703-620-0010

www.bia.org

Council of American Structural Engineers (CASE) American Council of Engineering Companies

202-347-7474

www.acec.org

Cement and Concrete Reference Laboratory (CCRL)

Building and Fire Research Laboratory

National Institute of Standards and Technology

301-975-5900

www.bfrl.nist.gov

Concrete Reinforcing Steel Institute (CRSI)

847-517-1200

www.crsi.org

(City of) Falls Church, Virginia

Department of Development Services

Building Safety, Planning and Zoning Divisions
300 Park Avenue, 300 West
Falls Church, VA 22046
703-248-5080 (TTY 711)
www.fallschurchva.gov
Code of the City of Falls Church, Virginia: www.municode.com

Police Department
300 Park Ave, G2 East
Falls Church, VA 22046
703-248-5053 (TTY 711)

Public Works Department
300 Park Ave, 100 West
Falls Church, VA 22046
703-248-5350 (TTY 711)

Fire Marshal
300 Park Ave, G2 East
Falls Church, VA 22046
703-248-5058 (TTY 711)

International Code Council, Inc. (ICC)

1-888-ICC-SAFE (422-7233)
www.iccsafe.org

Model codes:

2012 International Building Code (IBC)
2012 International Existing Building Code (IEBC)
2012 International Property Maintenance Code (IPMC)

State codes (Virginia amendments composited with model codes, effective July 14, 2014):

2012 Virginia Construction Code (VCC)
2012 Virginia Rehabilitation Code (VRC)
2012 Virginia Maintenance Code (VMC)

National Concrete Masonry Association (NCMA)

703-713-1900
www.ncma.org

National Fire Protection Association (NFPA)

617-770-3000
www.nfpa.org

National Institute for Certification in Engineering Technologies (NICET)

1-888-IS-NICET (476-4238)
www.nicet.org

National Institute of Standards and Technology (NIST)

301-975-NIST (6478)
www.nist.gov

APPENDIX III:
BUILDING CONSTRUCTION ORGANIZATIONS

National Voluntary Laboratory Accreditation Program (NVLAP)

National Institute of Standards and Technology
301-975-4016
www.nist.gov/nvlap

Occupational Safety & Health Administration (OSHA)

U.S. Dept. of Labor
1-800-321-OSHA (6742)
www.osha.gov

Portland Cement Association (PCA)

847-966-6200
www.cement.org

Precast/Prestressed Concrete Institute (PCI)

312-786-0300
www.pci.org

PCI MNL 116-99 *Quality Control for Plants and Production of Structural Precast and Prestressed Concrete Products*

PCI MNL 117S-96 *Quality Control for Plants and Production of Architectural Precast and Prestressed Concrete Products*

PCI MNL 124-89 *Design for Fire Resistance of Precast Prestressed Concrete*

PCI MNL 128-01 *Recommended Practice for Glass Fiber Reinforced Concrete Panels*

Post-Tensioning Institute (PTI)

602-870-7540
www.post-tensioning.org

Research Council on Structural Connections (RCSC)

c/o American Institute of Steel Construction, Inc.
312-670-2400
www.boltcouncil.org
Specification for Structural Joints Using High-Strength Bolts, 2012 edition
Specification for Structural Joints Using A325 or A490 Bolts, 2004 edition

Steel Deck Institute (SDI)

847-458-4647
www.sdi.org

Steel Joist Institute (SJI)

843-626-1995
www.steeljoist.org

The Masonry Society (TMS)

303-939-9700
www.masonrysociety.org

Truss Plate Institute (TPI)

703-683-1010
www.tpinst.org

Underwriters Laboratories, Inc. (UL)

1-847-272-8800

www.ul.com
Fire Resistance Directory

Virginia, Commonwealth of
www.virginia.gov
Code of Virginia (<http://leg1.state.va.us/000/cod/toc.htm>)

Virginia Department of Housing and Community Development (DHCD)
804-371-7150
www.dhcd.virginia.gov
(Virginia amendments to the International Code Council, Inc., model codes):
Virginia Uniform Statewide Building Code (VUSBC) (effective March 1, 2011)
Part I Virginia Construction Code (VCC) 13 VAC 5-63-10 ... 5-63-390
Part II Virginia Rehabilitation Code (VRC) 13 VAC 5-63-400 ... 5-63-440
Part III Virginia Maintenance Code (VMC) 13 VAC 5-63-450 ... 5-63-500

Virginia Department of Transportation (VDOT)
804-786-2801
www.virginiadot.org
2008 Road and Bridge Standards

Virginia Occupational Safety and Health Administration (VOSHA)
Department of Labor and Industry
804-371-2327
www.doli.state.va.us
29 CFR Part 1926 *Virginia Occupational Safety and Health Standards for the Construction Industry*
Subpart N - Section 1926.550 *Cranes and Derricks*
Subpart N - Section 1926.552 *Material Hoists, Personnel Hoists and Elevators*
Subpart Q - Section 1926.700 *Concrete and Masonry Construction*

WACEL: An Association of Engineering Laboratories, Inspection Agencies and Building Officials, Inc.
301-652-7925
www.wacel.org

WTCA (Wood Truss Council of America)
c/o Structural Building Industry Components Association (SBCA)
608-274-4849
www.sbcindustry.com

WTCA QC In-Plant Quality Control Program



City of Falls Church
Building Safety Division
300 Park Avenue, Suite 300W
Falls Church, VA 22046
703-248-5080 (TTY 711)
www.fallschurchva.gov/building
permits@fallschurchva.gov