Special Inspections Manual

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Department of Planning and Development Review
Bureau of Permits and Inspections
900 East Broad Street, Room 108
Richmond, Virginia 23219
(804) 646-4169

Table of Contents

Special Inspection Manual

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Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections
Email: PDRPermitsAndInspections@rva.gov

Introduction:

The purpose of this document is to familiarize the Owner, Engineer, Architect, Testing/Inspection Laboratory, and Contractor of the Special Inspections required by Chapter 17 of 2021 International Building Code, as adopted by the State of Virginia Uniform Statewide Building Code.

Chapter 17 of the 2021 International Building Code (IBC) has specific requirements for Structural Tests and Special Inspections. These tests and inspections are in addition to the inspections required by VUSBC section 113. The special inspection does not waive the requirement for inspections by the building inspector. The contractor is responsible for scheduling all inspections required by VUSBC, with the Bureau of Permits and Inspections. These tests and inspections are to be made by an agency, inspector, testing lab, and fabricator shop approved by the Commissioner of Buildings.

The approved agency, inspector, testing lab, and fabricator shop must be employed by the owner or the registered design professional in responsible charge acting as the owner's agent.

This handout outlines the mandatory requirements and responsibilities of all parties involved with special inspection and construction. However, recognizing that there are many ways to evaluate construction quality and inspection, this handout is NOT intended to be a step-by-step procedural specification sufficient for all projects. Adjustments may be needed to satisfy a project's particular conditions.

It is hoped that by becoming more familiar with items which will be examined by the special inspector, all parties to the construction process can better prepare to foster quality control in the constructed project.

When special inspections are required by VCC 2021 edition, the Structural Engineer of Record in responsible charge shall prepare a Statement of Special Inspections, for submittal by the permit applicant (see attached exhibit 2). This statement shall include the following:

1. The materials, systems, components, and work required to have special inspection
2. The type and extent of each inspection
3. The type and extent of each test
4. Identification as to whether it will be a continuous or periodic special inspection

This agreement applies to special inspections covered in Chapter 17 of the VCC. It does not waive any other inspections that do not fall under chapter 17. It is the permit holder's responsibility to call for all required inspections prior to concealment and prior to proceeding on with the work.

Preconstruction Meeting / Special Inspection Meeting

Prior to the issuance of a building permit, a special inspection meeting shall be held with the staff of the Bureau of Permits and Inspections. The City of Richmond designated Building Plan Reviewer shall inform the Registered Design Professional in responsible charge of the project, owner or owner agent to contact the City of Richmond's Permit Architect – Special Inspections, to schedule the meeting time and location. The following are required to attend this meeting.

1. The Building Official or the official representative, Plans Examiner, and Building Inspector
2. Owner or designated agent
3. The Registered Design Professional in Responsible Charge or representative.
4. Architect of Record or representative.
5. Structural Engineer of record or representative
6. Geotechnical Engineer of Record or representative
7. The General Contractor or representative.
8. Special Inspections Engineer of Record or representative
9. The Approved Agency or representative.

Definitions and Purpose

Approval of Special Inspection Agencies, Special Inspectors, Fabricator Shop and/or Testing labs:

Special Inspections Agencies, Special Inspectors, Fabricator Shop, and Testing Labs shall disclose any possible conflicts of interest. The Registered Design Professional in responsible charge shall pre-qualify the designated Special Inspection Agencies, Special Inspectors, Fabricator Shop, and Testing Labs, and submit their qualifications as part of the Statement of Special Inspections. The City of Richmond Bureau of Permits and Inspections shall approve the designated Special Inspection Agencies, Special Inspectors, Fabricator Shops, and Testing Labs, prior to any work being performed.

Duties and Responsibilities of the Project Owner:

1. **Agree and sign the Special Inspection and Testing Agreement**

2. **Employ and Fund Special Inspections and Testing Services:**
   The project Owner is responsible for employing and funding the Special Inspection and Testing services. The Special Inspection Agencies, Special Inspectors and Testing Labs, shall not be in the employment of the contractor, a subcontractor or material supplier. In the case of an Owner who is also acting as the contractor; Special Inspection Agencies, Special Inspectors, and Testing Labs shall be employed as specified and approved by the Commissioner of Buildings, and Bureau of Permits and Inspections.

Duties and Responsibilities of the Engineer of Record (SER)

The engineer or architect of record has many duties and responsibilities related to special inspection and structural observation activities. These include the following:

1. **Agree and sign the Special Inspection and Testing Agreement:**

   The Engineer or Architect of record shall complete the Special Inspection and Testing Agreement and submit with the Building Permit Application.

2. **Identify the need for special inspections and structural observation services:**

   The project plans and/or specifications which are submitted to the building official shall clearly indicate the design parameters and material selection. The engineer or architect of record is the development team member who analyzes the critical elements of the design and determines where special inspection and structural observation is required in accordance with 2021 VCC chapter 17. Special Inspection and Structural Observation Requirements. The engineer is responsible for submitting the special inspection and structural observation requirements form into the structural plan sets. Also, one separate copy shall be submitted to the Bureau of Permits and Inspections Plan Examiner for office record.

3. **Respond to field discrepancies**

   Material and design discrepancies which are not resolved in a timely manner or are about to be incorporated in the work must be brought to the attention of the engineer or architect of record and the office of the Commissioner of Buildings. Uncorrected field deficiencies observed by the special inspector must also be brought to their attention. The engineer or architect of record is instrumental in effecting the remedial process of deficiency correction. The engineer or architect of record is responsible for any design changes in addition to acknowledgment and approval of shop drawings which may detail structural information, and for submission of such changes to the Bureau of Permits and Inspections for approval.

4. **Submit final special inspection completion report package**

   The engineer of record shall submit an overall final complete special inspection package (include <u>all</u> inspection reports & pictures etc.; all exhibits) to The Bureau of Permits and Inspections stating that all items requiring special inspection and structural observation were performed in accordance with the approved plans, specifications, and applicable workmanship provisions of the VUSBC. See Exhibit (5), Special Inspection Final Compliance Report and Exhibit (6), Structural Observation Final Compliance Report. Final special inspection completion report package shall also include (EXHIBIT 3; 4; 5; 6 & 7 + 1; 2 & Schedule of Chapter 17 Inspections).

Duties and responsibilities of the engineer responsible for the structural observation program

The owner shall employ the engineer or architect responsible for structural design, or another engineer or architect designated by the engineer or architect responsible for structural design, to perform structural observation as defined in IBC. In addition to structural observations per section 1704.6 of VCC, SER periodically (especially prior to concealment) to make visual observations of structural components, to ensure design intend has been met (i.e.: structural steel; structural wood etc...). Observed deficiencies shall be reported in writing to the owner's representative,

Special inspector, contractor, and the City of Richmond Bureau of Permits and Inspections. The structural observer shall submit to the Commissioner of Buildings a written statement declaring that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved. See exhibits 5 and 6 structural observation final compliance report.

Duties and Responsibilities of the Special Inspector

1. **Agree and sign the Special Inspection and Testing Agreement.**

2. **Special Inspector:**
The special inspectors are individuals with highly developed, specialized skills who observe those critical building or structural features which they are qualified to inspect. Duties of special inspectors and/or inspection agencies include the following:

a. Observe and inspect all work for which they are responsible:

Special inspector shall inspect all work for conformance with the Bureau of Permits and Inspections approved plans and specifications and applicable of the code. The special inspector shall be on site to observe construction operations that require continuous or periodic inspections as per tables 1705.2.3, 1705.3, 1705.6, 1705.7 and 1705.8 of VCC 2021 edition. Work shall be inspected according to the approved construction documents, listed standards and nationally recognized testing methods.

b. Provide Timely Progress Report:

The special inspector should complete written inspection reports for each inspection visit and provide the report in a timely manner. The special inspector or inspection agency shall furnish these reports directly to the building official, engineer or architect of record and the general contractor. Special inspectors shall bring all non-conforming items to the immediate attention of the contractor. If any such item is not resolved in a timely manner or is about to be incorporated in the work, the engineer or architect of record and the building official shall be notified immediately. See exhibit 4. A copy of exhibit 4 shall be attached to every report done by the special inspector.

Special inspections reports are due within 48 hours of the inspection. The reports are to be emailed to the Bureau of Permits and Inspections office, attn.: Permit Architect – Special Inspections. Permit BLDC# & project address should be noted.

c. Submit a Final Report.

Special inspectors or inspection agencies shall submit a final report that is sealed, signed and dated by the registered engineer or architect who is responsible for the special inspection to the Bureau of Permits and Inspections office stating that all items requiring special inspection and testing were constructed, to the best of their knowledge, in conformance with the approved design plans, specifications, approved change order and the applicable provision of the building code. See submit final special inspection completion report package (EXHIBIT 3; 4; 5; 6 & 7 + 1; 2 & Schedule of Chapter 17 Inspections).

This report shall be submitted no later than 30 days prior to application for a Certificate of Occupancy or Temporary Certificate of Occupancy. Click below for the Certificate of Occupancy application:

Certificate of Occupancy Application

Duties and Responsibilities of the Contractor:

1. **Agree and sign the Special Inspection and Testing Agreement – Exhibit 1, 2 & 3**

2. **Notifying the Special Inspection Agency, Special Inspector, and Testing Lab.**
The contractor or the holder of the Building Permit is responsible for notifying the Special Inspector, special inspection agency and Testing Lab regarding special inspections required by the Bureau of Permits and Inspections. Adequate notice shall be provided so that the special inspector has time to become familiar with

the project. The permit holder is responsible for calling for all required inspections both from the building inspector and the special inspector.

3. **Provide access to approved Construction documents.**
   The contractor is responsible for providing the special inspector with access to approved plans, construction documents, and approved shop drawings.

4. **Retain special inspection records at the job site:**
   The contractor is responsible for retaining at the job site all special inspection records submitted by the special inspector and testing labs and providing these records for review by the Bureau of Permits and Inspections inspector upon request. Email Exhibit 3, shortly after permit is issued, to Permit Architect at the City of Richmond (see Exhibit 3)

5. **Obtain Bureau of Permits and Inspections approval prior to concealment:**
   The Contractor shall contact the Bureau of Permits and Inspections for required inspections and obtain approval prior to concealing any work requiring Special Inspections.

Duties and Responsibilities of Bureau of the Permits and Inspections

The specific duties and responsibilities of the Bureau of Permits and Inspections relating to Special Inspections include the following:

1. **Review and examine plans, specifications, structural observation, and contract documents for approval and compliance with the Code and Special Inspection program requirements:**
   The Bureau of Permits and Inspections is responsible for reviewing all submitted construction plans, specifications, forms related to the Special Inspection Program, and any other submitted documents for compliance with Virginia Uniform Statewide Building Code. All items submitted must be reviewed and approved prior to issuance of the Building Permit. This includes the following:

   a. Check the qualifications of each Special Inspector, Special Inspection Agency, Testing Lab, and Fabricator Shop that is listed on the Statement of Special Inspections in accordance with The City of Richmond's **Qualification Standard for Special Inspections.**

   b. Check that all parties involved in the Special Inspection Program have completed their portion of the Special Inspection and Testing Agreement.

   c. Issue the Building Permit with the approved Statement of Special Inspections, Special Inspection and testing Agreement, and permit conditions attached to the approved plans that will be kept on the job site.

   d. Determine if pre-construction meeting is required to review the Special Inspection Program with all appropriate members of the construction team.

2. **Monitor Special Inspection and Testing Activities:**
   The Permit Architect may monitor work requiring Special Inspection and Testing Activities at the jobsite to assure that the designated qualified Special Inspectors are performing their duties when work requiring Special Inspection is in progress.

3. **Review Special Inspection Progress Reports:**
   The Permit Architect and Senior Building Inspector will review the submitted Special Inspection progress reports and perform field inspections, as/if necessary, to verify conformance to the approved plans, construction documents, and specifications prior to concealing any work related to the Special Inspections

4. **Perform Final Inspection and Issue Certificate of Occupancy:**
   The Bureau of Permits and Inspections will approve all site inspections as partial inspection and will not perform a final inspection nor approve the final inspection until the final Special Inspection Report has been reviewed and approved by the office of the Commissioner of Buildings.

Exhibit (1): Special Inspections – Acknowledgements

Department of Planning & Development Review, Bureau of Permits and Inspections
900 East Broad Street, Room 108
Richmond, Virginia 23219
Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections

Project Address: _____ **Plan Number:** _____

I have read and agree to comply with the terms, conditions, and my responsibilities as they are outlined in the Special Inspection and Testing Agreement:

Owner or Tenant (owner's authorized agent):

Print Name/Company Name	Provide Signature	Date

Register Design Professional in Responsible Charge (Project Engineer or Architect of Record):

Print Name/Company Name	Provide Signature	Date

Register Design Professional Structural Engineer (SER):

Print Name/Company Name	Provide Signature	Date

Contractor-GC:

Print Name/Company Name	Provide Signature	Date

Special Inspections, Testing Agencies/Laboratories, and Independent Special Inspectors (SIER):

Print Name/Company Name	Provide Signature	Date	Agent #
		*	
Print Name/Company Name	Provide Signature	Date	Agent #
		*	
Print Name/Company Name	Provide Signature	Date	Agent #

*This signature must be that of the responsible Professional Engineer withing the Special Inspection Agency

Accepted By the City of Richmond Bureau of Permits and Inspections

Print Plan Reviewer Name	Provide Signature	Date
Print Name Permit Architect – Special Inspections (City of Richmond)	Provide Signature	Date

Exhibit (2): Statement of Special Inspections

Department of Planning & Development Review, Bureau of Permits and Inspections
900 East Broad Street, Room 108
Richmond, Virginia 23219
Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections

Project Address: _____

Plan Number: _____ Code Edition: _____

Permit Applicant: _____

Applicant Address: _____

Architect of Record: _____

Structural Engineer of Record (SER): _____

Geotechnical Engineer of Record: _____

Special Inspector's Engineer of Record (SIER): _____

General Contractor: _____

This Statement of Special Inspections is submitted as a condition for permit issuance in accordance with Chapter 17 of the **IBC 2021** as adopted by the Virginia Uniform Statewide Building Code. It includes a schedule of special inspections applicable to this project as well as the name of the Special Inspector, and any testing agencies retained for conducting inspections.

The Special Inspector shall keep records of all inspections and furnish all inspections reports to the code official and appropriate design professionals. Discrepancies found from the approved construction documents shall be brought to the immediate attention of the contractor for correction, the City of Richmond Code Official, as well as the appropriate design professional of record. Daily, weekly, and monthly reports shall be submitted to the Code Official as required unless otherwise agreed upon by the Building Official. A final report of special inspection shall be submitted to the City of Richmond prior to the building needing occupancy i.e.: TCO and/or final inspection and issuance of certificate of occupancy.

Prepared by:

_____	_____	_____
Type or Print Name	Provide Signature	Date

Owner/Representative Authorization:

_____	_____	_____
Type or Print Name	Provide Signature	Date

Building Official Acceptance / Permit Architect:

_____	_____	_____
Type or Print Name	Provide Signature	Date

Exhibit (3): Special Inspections – First Site Visit checklist for GC

Department of Planning & Development Review, Bureau of Permits and Inspections
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https://www.rva.gov/planning-development-review/permits-and-inspections

Project Address: _____

Permit Number: _____ Date Received: _____

Project Name: _____ Site Visit: Date: _____

Special Inspection First Site Visit: ☐ General Contractor ☐ Superintendent

☐ Special Inspection Engineer of Record

Notes:

_____

_____

_____

☐ **Special Inspection Binder kept with Stamped Permit Drawings on Site**
☐ **Exhibit #3 emailed to City of Richmond, within 48 hours of 1st Special Inspection Visit on Site**

Comments:

_____

_____

_____

If/when there is a change with SI agency; GC; any Superintendent's and/or Structural Engineer of record, City Of Richmond will be notified immediately.
We have read and agree to comply with the terms, conditions, and our responsibilities as they are outlined in the Special Inspection and Testing Agreement. I, the GC have e-mailed City of Richmond with above checked items.

General Contractor:

Print Name	Provide Signature	Email Address / Phone Number

Superintendent:

Print Name	Provide Signature	Email Address / Phone Number

Special Inspection Engineer of Record:

Print Name	Provide Signature	Email Address / Phone Number

Exhibit (4): Special Inspection Daily Report

Department of Planning & Development Review, Bureau of Permits and Inspections
900 East Broad Street, Room 108
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Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections

Project Address: _____

Permit Number: _____ Date: _____

Project Name (OPT): _____

Inspection Type: ☐ Continuous ☐ Periodic Frequency: _____

Inspection Kind and Location:

Tests Performed:

☐ **Inspection Approved** ☐ **Inspection Rejected** ☐ **Rejected Inspection Approved on:** _____

Comments:

To the best of my knowledge, work inspected was in accordance with the Bureau of Permits Inspections approved plans, specifications, and applicable workmanship provisions of VCC 2021 Edition Except as noted above.

Signed: _____ Inspection Agency: _____

Print Full Name: _____ Time of Inspection: _____

Exhibit (5): Completion Report for Special Inspection of each Work Type

Department of Planning & Development Review, Bureau of Permits and Inspections
900 East Broad Street, Room 108
Richmond, Virginia 23219
Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections

Permit Number: _____ Project Address: _____

Special Inspector's Engineer of Record (SIER): _____

Work Type : _____

Pursuant to the requirements of the City of Richmond Special Inspections for construction item specified for this permit have been completed. The building elements subjected to special inspections have been found to be in compliance with project construction documents and the Virginia Uniform Statewide Building Code. All discrepancies discovered during the conduct of special inspections for this particular work type were brought to the attention of appropriate registered design professional of record, the General Contractor, and Building Code Official for resolution and have been corrected and approved.

Submitted by Special Inspections Engineer:

SIER P.E. Seal and Signature

_____ _____
Signature Date

_____
Type or Print Name

Reviewed By

Structural Engineer of Record (SER):

_____ _____
Signature Date

_____
Type or Print Name

Building Official:

_____ _____
Signature Date

_____
Type or Print Name

Exhibit (6): Structural Observation Final Completion Report

Department of Planning & Development Review, Bureau of Permits and Inspections
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Richmond, Virginia 23219
Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections

Permit Number: _____ Project Address: _____

In accordance with Chapter 17 of Virginia Construction Codes 2021 edition, I [Structural Engineer of Record (SER)] have provided structural observation for the items listed below. The owner or the owner's authorized agent shall employ a registered design professional to perform structural observations. The structural observer shall visually observe representative locations of structural systems, details & load paths for general conformance to the approved construction documents. In addition to structural observations per section 1704.6 and 1704.6.1 of VCC, I (SER) periodically made visual observations of structural components, to ensure design intend was met (i.e.: especially prior to concealment for structural steel; structural wood etc...)

Submitted by Structural Engineer of Record performing structural observation:

_____ _____
Signature Date

_____
Type or Print Name

SER P.E. Seal and Signature

Exhibit (7): Final Report of Special Inspections

Department of Planning & Development Review, Bureau of Permits and Inspections
900 East Broad Street, Room 108
Richmond, Virginia 23219
Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections

Permit Number: _____ Project Address: _____

Special Inspections Engineer of Record: _____

Pursuant to the requirements of the City of Richmond Special Inspections Program, I submit this final report of the item listed above for approval. Inspection Report numbered _____ to ____, and test Report number ____ to ____, all submitted and reviewed prior to this Final Report, form a basis for, and are to be considered an integral part of this report.

The special inspections relative to the permit listed above have been completed. The building elements subject to special inspections have been found to be in compliance with the approved construction documents and in conformance with project specifications. All discrepancies discovered during the conduct of special inspections for this permit were brought to the attention of appropriate registered design professional of record, the General Contractor, and Building Code Official for resolution and have been corrected and approved.

Submitted by Special Inspections Engineer of Record:

_____ _____
Signature Date

_____
Type or Print Name

SIER P.E. Seal and Signature

Reviewed by:
Structural Engineer of Record (SER):

_____ _____
Signature Date

Accepted by:
Building Official:

_____ _____
Signature Date

Virginia Construction Code:
Schedule for Special Inspections

Department of Planning & Development Review, Bureau of Permits and Inspections
900 East Broad Street, Room 108
Richmond, Virginia 23219
Office: (804) 646-4169
https://www.rva.gov/planning-development-review/permits-and-inspections

From 2021 IBC -- Adopted by Virginia Uniform Statewide Building Code

Name of SER Firm/ PE : _____ **Date:** _____

Project Address: _____ **Plan Number:** _____

Make sure to Check the box Under the "Yes?" column if an inspection is required – NOTE: to be filled by SER

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
Soils see table 1705.6								
1. Verify material below shallow foundations are adequate to achieve the design bearing capacity.		☐			X	1705.6		
2.Verify excavations are extended to proper depth and have reached proper material		☐			X	1705.6		
3.Perform classification and testing of compacted fill material		☐			X	1705.6		
4. Verify use of proper materials, and procedures in accordance with the provisions of approved Geotech report. Verify densities and lift thickness during placement and compaction of compacted fill.		☐		X		1705.6		

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
5.Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly		☐			X	1705.6		
Structural Steel 1705.2; TABLE 1705.2.3								
Quality control	In plant inspection	☐				1705.2	AISC 360	
1. Bolts, nuts, washers	Markings meets ASTM standards	☐				1705.2	AISC 360-10	
a. Marking	Markings versus certificate of compliance	☐			X	1705.2	AISC 360;	
b. certificate of compliance		☐			X	1705.2	AISC 360;	
2. High strength bolting	Field inspection	☐				1705.2	AISC 360	
a. bearing type connections	Field inspection	☐			X	1705.2	AISC 360	
b. slip critical connections	Field inspection	☐			X	1705.2	AISC 360	
3. Material verification	Material markings versus certifications	☐				1705.2	ASTM	
a. conforms to ASTM standards		☐				1705.2	ASTM	
b. certified mill test reports		☐				1705.2	ASTM	
4. Verification of weld filler materials		☐				1705.2		
a. markings conform to AWS specification in construction documents	Field inspection	☐				1705.2	AISC 360	
b. manufacturer's certificate of compliance		☐				1705.2		
5. Inspection of welding	Field inspection	☐				1705.2		
a. structural steel		☐				1705.2		
1. penetrations of welds		☐		X		1705.2.1	AWS	
2. multi-pass fillet welds		☐		X		1705.2	AWS	
3. Single pass welds >5/16"		☐		X		1705.2	AWS	

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
4. Single pass welds <5/16					X	1705.2	AWS	
5. Floor & roof deck welds					X	1705.2.1	AWS	
b. Reinforcing Steel						1705.2		
1. verification of weldability					X	1704.5 item6	AWS D1.4; ACI 318	
2. Flexural & axial forces						1705.2	AWS D1.4; ACI 318	
3. shear reinforcement				X		1705.2	AWS D1.4; ACI 318	
4. Other reinforcement					X	1705.2	AWS D1.4; ACI 318	
6. Steel Frame Joint inspections						1705.2.1		
a. bracing & stiffening						1705.2		
b. member locations						1705.2		
c. joint details at connections					X	1705.2		
Structural steel - installation					X	1705.2.1; Table 1705.2.3	ASTM	
Structural steel – size of each member					X	1705.2.1	ASTM	
Location of members	Field inspection – per approved construction documents				X	1705.2.1	ASTM	
Bearing of members	Field inspection – per approved construction documents				X	1705.2.1	ASTM	
Bolts, nuts, washers - installation	In place inspections				X	1705.2.1	AISC 360	
Torque of bolts	Field verify				X	1705.2.1	AISC 360	
Connections	Field verify				X	1705.2.1	AISC 360	
Structural details	Inspection in field				X	1705.2.1		

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
Deep Driven Foundation see table 1705.7								
1. Verify pile/ element materials, sizes and lengths comply with requirements and construction documents	Field inspection – per approved construction documents	☐		X		1705.7		
2. Determine capacities of test piles/ elements and conduct additional load tests as required	Field inspection – per approved construction documents	☐		X		1705.7		
3. Inspect driving operations and maintain complete and accurate records for each pile/ element	Field inspection – per approved construction documents	☐		X		1705.7		
4. Verify placement locations and plumbness confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation pile/ element	Field inspection – per approved construction documents	☐		X		1705.7		
5. for steel piles, perform additional inspections in accordance with section 1705.2	Field inspection – per approved construction documents	☐		X	X	Table 1705.7; Sect. 1705.2		
6. For concrete piles/ elements and concrete filled piles/ elements, perform tests and additional special inspections in accordance with section 1705.3	Field inspection – per approved construction documents	☐		X	X	Table 1705.7; Sect. 1705.3		
7. For specialty piles/ elements, perform additional inspections as determined by the registered design professional in responsible charge	Field inspection – per approved construction documents	☐				1705.7		
Pier and Curtain Wall Foundations see 1809.10								
Drilling	Observe drilling and placement	☐						1809.10 item 1
Placement	Verify placement, size, location, adequate bearing	☐						1809.10 item 2
Materials	For concrete elements, perform additional inspections in accordance with section 1705.3. For Masonry Section 1705.4	☐					ACI 318	1809.10

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
Masonry see 1705.4 (Category I, II, III, IV)							TMS 402: TMS 602' TMS 604	2104
Drilling	Observe drilling and placement					1705.4		
Placement	Verify placement, size, location, adequate bearing					1705.4		
Materials	Review products supplied versus material submitted				X	1705.4		2103
Acceptance test					X	1705.4		
Strength	Testing & review of strength				X	1705.4	ACI 318; TMS 402; TMS 602	2106; 2107; 2108
Reinforcing in walls	Field inspection – per approved construction documents				X	1705.4	TMS 602	2103.4
Placement of anchors	Field inspection – per approved				X	1705.4		1404.6
Mortar and grout placement	construction documents				X	1705.4	TMS 602	2103.2; 2109.2.4.2
Mortar joints	Field inspection – per approved				X	1705.4	TMS 602	2103.2
Grout strength	construction documents				X	1705.4	TMS 602	2103.3
Mortar type	Field inspection – per approved				X	1705.4	TMS 602	2103.2
Grade of reinforcing	construction documents				X	1705.4	TMS 602	
Cold weather construction	Field inspection – per approved				X	1705.4	TMS 602	
Shallow Foundation section 1809								
Location of footing	Field inspection of footing – per approved plans?							1809.6
Depth and Width of Footing	Field inspection of footing– per Approved plans?							1809.4
Strength of footing PSI	Laboratory testing– per approved plans?							

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
Stepped Footing	Field inspection of footing							1809.3
Frost protection & Frost Protection at required exits	Field inspection of footing							1809.5; 1809.5.1
Prescriptive Footing for Light –frame construction	Field inspection of footing							1809.7
Plain Concrete Footing	Field inspection of footing							1809.8
Concrete Construction see Table 1705.3; Chapter 19						Sect. 1705.3; Table 1705.2		1901; 1905
1. Inspection of reinforcing steel, including pre-stressing tendons, and placement.	Field inspection including proper size and placement				X	1705.3	ACI 318: CH.20, 25.2, 25.3, 26.6.1-26.6.3	
2. Reinforcing steel welding				X	X	1705.3.1	AWS D1.4 ACI318: 26.6.4	
3.Inspection of anchors cast-in concrete where allowable loads have been increased or where strength design is used				X	X	1705.3	ACI 318: 17.8.2	1901.3; 1905;
4.Inspection of anchors post-installed in hardened concrete members				X	X	1705.3	ACI 318: 17.8.2.4; ACI 318: 17.8.2.	1901
5.Verifying use of required design mix					X	1705.3	ACI 318: CH 19, 26.4.3, 26.4.4	1904.1; 1904.2
6.Prior to concrete placement, to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete				X		1705.3	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	
7. Inspection of concrete and shotcrete placement for proper application techniques.				X		1705.3	ACI 318:26.5	
8. Inspection for maintenance of specified curing temperature and techniques.					X	1705.3; Table 1705.3	ACI 318: 26.5.3-26.5.5	
9.Inspection of pre-stressed concrete						1705.3		1901.5
Application of pre-stressed forces				X		1705.3	ACI 318:26.10	1901.5
Grouting of bonded pre-stressed tendons in the seismic-force resisting system				X		1705.3	ACI 318: 26.10	1901.5
10.Erection of precast concrete members					X	1705.3	ACI 318: 26.9	1905; 1901.7.2; 1906

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
11.For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Deign Category C, D, E or F, inspect such connections and reinforcement in the field for:		☐		X			ACI 318: 26.13.1.3 ACI 550.5	
a. Installation of the embedded parts		☐		X			ACI 318: 26.13.1.3 ACI 550.5	
b. Completion of the continuity of reinforcement across joints.		☐		X			ACI 318: 26.13.1.3 ACI 550.5	
c. Completion of connections in the field		☐		X			ACI 318: 26.13.1.3 ACI 550.5	
12.Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5		☐			X		ACI 318: 26.13.1.3	
13.Verification of in-situ concrete strength prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs		☐			X	1705.3; 1708	ACI 318:26.11.2	
14.Inspect formwork for shape location and dimensions of the concrete member being formed, shoring and reshoring		☐			X	1705.3 & Table 1705.3	ACI 318:26.11.1.2(b)	
Cast- In-Place Deep Foundation Elements Verification/Inspection **see table 1705.8**		☐						
1. Inspect drilling operations and maintain complete and accurate records for each element.		☐		X		1705.8		
2. Verify placement locations and plumpness confirm element diameters, bell diameters (if applicable) lengths embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes		☐		X		1705.8		
3.For concrete elements perform tests & additional inspections in accordance with section 1705.3		☐				1705.3 1705.8		

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
Helical Piers				X		1705.9		
Slabs (ground or elevated)								1907
Thickness	Field inspection – per approved construction documents	☐				1705.3		Section 1907
Rebar sizes	Field inspection – per approved construction documents	☐				1705.3		
Rebar spacing	Field inspection – per approved construction documents	☐				1705.3	AWS D1.4 ACI 318	
Rebar location in slab	Field inspection – per approved construction documents	☐				1705.3	ACI 318	
Floor penetrations	Field inspection – per approved construction documents	☐				1705.3		Section 714
STEEL Construction **see Table 1705.2**								
1. Material verification of cold-formed steel deck:		☐			X	1705.2.2		
a. Marking		☐			X	1705.2.2		
b. certificate of compliance		☐			X	1705.2.2		
2. Inspection of Welding:		☐			X	1705.2.2		
a. Cold-formed steel deck		☐				1705.2.2	SDI QA/QC Table 1705.2.3	2207.
1.Floor and roof deck welds		☐			X	1705.2.2	AWS	
b. Reinforcing steel:		☐				1705.2.2		
1.Verification of weldability of reinforcing steel other than ASTM A 706		☐			X	1705.2.2	AWS D1.4 ACI 318	
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	Markings meets ASTM standards	☐		X		1705.2.2	AWS D1.4 ACI 318	

Work Type	Description	Yes?	Firm	Continuous	Periodic	Chapter 17	Other Standard	Non Chapter 17
3. Shear reinforcement	Markings versus certificate of compliance	☐		X		1705.2.2	AWS D1.4 ACI 318	
4. Other reinforcing steel	Field inspection	☐			X	1705.2.2	AWS D1.4 ACI 318	
Wood sections 1705.5; 1705.11								
Fabrication/quality control	Review submittals and installation	☐			X	1704.2.5; 1705.5		
High load diaphragms	Inspection of sheathing, framing size nail and staple size, number of fasteners, and spacing of fasteners	☐		X	X	1705.5.1; 1705.5.2; 1705.5.3		2306.2
Structural wood		☐		X	X	1705.5 1705.11.1 1705.12.1		
Fire resistive wood		☐			X			2303.2 722.6
Fire resistive wood marking	Paint once on site on the sides so that it can be identified when cut and MFG markings aren't visible	☐			X	1703.5		2303.1.1.1 2303.1.9.1
Fire Resistance								722
Spray on materials	Review surface conditions, applications, thickness	☐			X	1705.15		722.5.2.2 722.5.1.3 722.6
Fire resistant coatings	Review surface conditions, applications, thickness	☐			X	1705.15.2		
Thermal and Sound -Insulating	Review applications	☐						Section 720
Special Cases	Review surface preparations and applications	☐				1705.1.1 EIFS-1705.17 ASTM E2570		
Smoke Control See section 909						1705.19		
Duct testing for leaks	Prior to concealment	☐						909.5.2
Pressure and flow testing	Prior to completion	☐						909.6, 909.6.1, 909.6.2, 909.6.3

Abbreviations:

AISC	AMERICAN INSTITUTE OF STEEL
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWS	AMERICAN WELDING SOCIETY
ACI	AMERICAN CONCRETE INSTITUTE
TMS	THE MASONRY SOCIETY
CO	CERTIFICATE OF OCCUPANCY
EIFS	EXTERIOR INSULATION AND FINISH SYSTEMS
IBC	INTERNATIONAL BUILDING CODE
PE (P.E.)	PROFESSIONAL ENGINEER
QA/AC	QUALITY ASSURANCE/ QUALITY CONTROL
SER	STRUCTURAL ENGINEER OF RECORD
SIER	SPECIAL INSPECTION ENGINEER OF RECORD
SDI	STEEL DECK INSTITUTE
TCO	TEMPORARY CERTIFICATE OF OCCUPANCY
VCC	VIRGINIA CONSTRUCTION CODE
VUSBC	VIRGINIA UNIFORM STATEWIDE BUILDING CODE

Links to Other Forms and Applications:

Application for Permit Extension

Building and Trade Permit Fees

Certificate of Occupancy Application