

PRINCE WILLIAM COUNTY SPECIAL INSPECTIONS MANUAL

(Virginia Uniform Statewide Building Code 2021)



Prince William County, Virginia
Department of Development Services
Building Development Division
5 County Complex Court
Prince William, VA 22192-9201

Tel.: 703-792-6930
www.pwcva.gov/BDD

TABLE OF CONTENTS

CHAPTER 1 - DEFINITIONS	4
CHAPTER 2 - INTRODUCTION.....	7
CHAPTER 3 - WHEN IS PWC SPECIAL INSPECTION APPLICABLE	8
CHAPTER 4 - PRE-CONSTRUCTION AND POST CONCEALMENT INSPECTIONS MEETINGS.....	10
CHAPTER 5 - CONSTRUCTION DOCUMENTS SUBMISSION TO THE SPECIAL INSPECTIONS SECTION	13
CHAPTER 6 - SIER/ INSPECTION AND TESTING AGENCY REQUIREMENTS / QUALIFICATIONS	15
CHAPTER 7 - THE AR/ SER QUALIFICATIONS & RESPONSIBILITIES.....	18
CHAPTER 8 - THE RESPONSIBILITIES OF THE GENERAL CONTRACTOR AND THE OWNER	20
CHAPTER 9 - SOILS AND FOUNDATIONS; INSPECTION AND TESTING	22
CHAPTER 10 - SHEETING AND SHORING	24
CHAPTER 11 - CAST-IN-PLACE/POST-TENSIONED AND TILT-UP CONCRETE CONSTRUCTION - INSPECTION AND TESTING	25
CHAPTER 12 - CAST-IN-PLACE/POST-TENSIONED AND TILT-UP CONCRETE CONSTRUCTION - FORMWORK, STRIPPING AND RESHORING	27
CHAPTER 13 - CAST-IN-PLACE/POST-TENSIONED AND TILT-UP CONCRETE CONSTRUCTION - REQUIREMENTS FOR COLD/HOT WEATHER CONCRETE	28
CHAPTER 14 – PRECAST/PRESTRESSED CONCRETE CONSTRUCTION.....	30
CHAPTER 15 - ON SITE CONCRETE BATCH PLANT	31
CHAPTER 16 - TOWER CRANES.....	32
CHAPTER 17 - MASONRY CONSTRUCTION; INSPECTION AND TESTING	36
CHAPTER 18 - MASONRY CONSTRUCTION; REQUIREMENTS FOR COLD/ HOT WEATHER CONSTRUCTION.....	38
CHAPTER 19 - STRUCTURAL STEEL; OPEN WEB STEEL JOISTS, METAL DECK, COLD-FORMED STEEL STRUCTURAL MEMBERS AND INSPECTION	39
CHAPTER 20 - ELEVATORS, DUMBWAITERS AND CONVEYOR EQUIPMENT.....	41
CHAPTER 21 – SPRAYED FIRE-RESISTANT MATERIALS; MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS & STANDPIPES	42
CHAPTER 22 - EXTERIOR INSULATION AND FINISH SYSTEMS	45
CHAPTER 23 - SMOKE CONTROL SYSTEMS.....	47
CHAPTER 24 - WOOD CONSTRUCTION.....	50
CHAPTER 25 - RETAINING WALLS	52

CHAPTER 26 - FINAL REPORT OF SPECIAL INSPECTIONS & OCCUPANCY PROCESS.....	54
APPENDIX I - ATTACHMENTS (HYPERLINKS).....	57
Appendix I - Attachment A - Instructions for Arranging a Pre-construction Meeting.....	57
Appendix I - Attachment B - Requirements for Post Concealment Inspections.	57
Appendix I - Attachment C - Requirements for Mandatory Third Party Inspections managed by SIB.....	57
Appendix I - Attachment D - Attendees of Preconstruction Meeting.	57
Appendix I - Attachment EB- Statement of Special Inspections - Buildings.....	57
Appendix I - Attachment ER - Statement of Special Inspections - Retaining Walls.	57
Appendix I - Attachment F - Final Report of Special Inspections.	57
Appendix I - Attachment G - Deficiency List.....	57
Appendix I - Attachment H - Building Pad Certification.	57
Appendix I - Attachment J - Approved Third Party Engineers.	57
Appendix I - Attachment K - Building Development Division Policy 1.18, Third Party Certification Program for Minor Critical Projects.	57
Appendix I - Attachment L - Building Development Division Policy 1.7, Inspections – Field Revisions.....	57
Appendix I - Attachment M - Design and Construction Standards Manual.....	57
Appendix I - Attachment N - Building Development Division Policy 1.12, Retaining Wall Safety Devices.	57
Appendix I - Attachment O - Building Development Division Policy 1.14.5, Special Inspections – Field Revisions.	57
APPENDIX II - ATTACHMENTS (HYPERLINKS)	58
Appendix II - Attachment A - Footing & Foundation SER Letter assuming responsibility of Pre-Engineered Metal Building SER.....	58
Appendix II - Attachment B - SIER Letter Accepting the County approved Geotechnical Report	58
Appendix II - Attachment C - RDPR List of Shop Drawings and Other Structural Submittals.....	58
Appendix II - Attachment D - Owner’s Request Letter for Waiver of Preconstruction Meeting	58
Appendix II - Attachment E - SIER Letter of Engagement to Perform Third Party Inspections.....	58
Appendix II - Attachment F - RDPR Letter of Authorization.....	58
Appendix II - Attachment G - Change of SIER Letter from Owner	58
Appendix II - Attachment H - Letter Assuming the Role as the New SIER.....	58
Appendix II - Attachment I - RDPR Shop Drawing Review/Approval Stamp Format	58
Appendix III – Referenced Standards	59
END OF DOCUMENT	62

CHAPTER 1 - DEFINITIONS

Architect of Record (AR): An Architect, registered in the Commonwealth of Virginia, whose signature and seal appear on the County approved drawings. The Architect of Record may designate another registered architect or engineer to sign documents and attend preconstruction meeting on his/her behalf by so indicating in a letter, filed with the PWCSIS. A sample form of the [RDPR Letter of Authorization](#) is provided in Appendix II Attachment F.

Authorized Representative: A registered design professional in the Commonwealth of Virginia working under a registered design professional of record of a special inspections project. The registered design professional of record will identify the authorized representative, who may be assigned the responsibilities of reviewing shop drawings, attend preconstruction meetings and/or perform site visits, by submitting a Letter of Authorization to the Special Inspections Section. A RDP who is identified as the project manager of a special inspections project and works under the supervision of the Special Inspector could represent the Special Inspector in preconstruction meetings. A sample form of the [Letter of Authorization](#) is provided in Appendix II Attachment F.

Note: The registered design professional of record (RDPR) may either be the Architect of Record (AR), Structural Engineer of Record (SER), Geotechnical Engineer of Record (GER), or Mechanical Engineer of Record (MER).

BDD: Building Development Division

Critical/Complex Structures: Structures that require Special Inspections.

Certify (or Certificate): A statement by a registered design professional, licensed in the Commonwealth of Virginia, which shall indicate that the work has been inspected and found to be in compliance with the County approved plans, and in conformance with the project specifications, County approved construction documents and the requirements of the Special Inspections Program. Such "certificate(s)" shall carry the original seal and signature of the registered design professional making the statement.

DDS: Department of Development Services

EIFS: Exterior Insulation and Finish Systems

Final Report of Special Inspections: A certification by the Special Inspections Engineer of Record (SIER) which shall indicate that all construction elements subject to special inspections, as identified in the County-approved Statement of Special Inspections, for all materials or phases of construction have been inspected prior to concealment, and in the SIER's professional opinion and to the best of the SIER's knowledge, the construction project complies with the County-approved documents and project

specifications. The Final Report of Special Inspections shall carry the original seal and signature of the SIER making the Statement. The final report shall be reviewed and approved by the appropriate Registered Design Professional of Record.

GC: General Contractor: The company, retained by the Owner, which coordinates construction and is responsible for job site safety.

Geotechnical Engineer of Record (GER): The registered design professional, licensed in the Commonwealth of Virginia, who is qualified by way of experience to specialize in the field of geotechnical engineering and is retained by the owner to perform geotechnical investigation(s) to make recommendations for foundations design and earthwork in accordance with the County regulations, applicable codes, and industry standards. The GER is also the individual who prepares and submits the geotechnical report to the Department of Public Works, Watershed Division during the site plan submission stage.

Inspection and Testing Agency: An established and accredited agency, meeting the requirements of ASTM E329, retained by the owner, independent of the contractors performing the work subject to special inspections, and approved by the Building Official to perform third party inspections and materials testing required by the VUSBC, IBC and PWCSIM

Inspection: The periodic or continuous observation of work and the performance of tests to verify substantial conformance with the plans and specifications and the design concepts of the Architect and/or Structural Engineer of Record approved by the County.

IBC: International Building Code

IRC: International Residential Code

PEMB: Pre-Engineered Metal Building

PWC: Prince William County

PWCBPRS: Prince William County Building Plan Review Section.

PWCSIS: Prince William County Special Inspection Section.

PWCSIP: Prince William County Special Inspection Program (formerly called the Complex Structures Program).

Registered Design Professional (RDP): An architect or professional engineer, licensed to practice architecture or engineering, as defined under Section 54.1-400 of the Code of Virginia.

Registered Design Professional of Record (RDPR): The RDP, acting as the owner's agent, who prepares plans, specifications and the Statement of Special Inspections

that comply with the codes necessary to obtain a building permit, including all approved revisions.

Retaining Wall Height: Wall height is the measurement from the grade level in front of the wall at a given location to the grade level behind the wall at the same cross section. In the case of a tiered wall system, this measurement is from the grade level in front of the wall located at the lowest elevation, to the grade level behind the wall located at the highest elevation at a given cross section.

Special Inspection Engineer of Record (SIER)/ Special Inspector (SI): The registered design professional, licensed in the Commonwealth of Virginia, who is responsible for the operations of the independent Inspection and Testing Agency. He/She is responsible for the field and laboratory services during the construction phase relating to the Statement of Special Inspections.

Structural Engineer of Record (SER): The registered design professional, licensed in the Commonwealth of Virginia, who is qualified by way of experience to specialize in the field of Structural Engineering and is retained by the owner to prepare the structural design for the project. The Structural Engineer of Record may designate another registered engineer to sign documents, attend preconstruction meeting and make site visits on his behalf by so indicating in a letter, filed with the Prince William County Special Inspection Section. The SER or the appropriate registered design professional of record shall review, seal and sign, and submit the [Final Report of Special Inspections](#) to PWCSIS.

Tiered Wall: When a wall is replaced with several smaller height walls along a given cross section, these walls will be considered to act together as one wall if the horizontal distance between adjacent walls is less than two times the wall height at the lower elevation.

SFRM: Sprayed Fire-Resistant Materials

Statement of Special Inspections (SSI): The Statement of Special Inspections is a Statement prepared by the appropriate RDPR (AR, GER, SER, MER) and submitted by the permit applicant at time of plans submission. The SSI identifies the scope of the special inspections services, applicable to a construction project, and the RDPs and Inspections and Testing Agencies who will provide those services. The SSI is required as a condition for permit issuance in accordance with IBC as amended by VUSBC. The SSI shall include a Special Inspection Schedule that will comply with the requirements of the IBC. There are two SSI, [Statement of Special Inspections – Buildings](#), for building and structures other than retaining walls and [Statement of Special Inspections - Retaining Walls](#), for earth retaining systems.

VUSBC: Virginia Uniform Statewide Building Code

CHAPTER 2 - INTRODUCTION

The purpose of this Manual is to identify responsibilities, outline procedural requirements, emphasize codes compliance and safety, address schedule(s), and other related activities.

When an application for unusual design is filed, or where reference standards in the IBC require special inspections, the Prince William County Building Official and/or the appropriate RDPR may require full time project representation for quality assurance during construction by a registered design professional. This project representative shall keep daily records and submit reports as required by the Building Official. The decision to require special inspections shall be made by the RDPR or by the Building Official for certain designs prior to the issuance of the building permit.

The owner, the AR and/or SER shall be responsible for retaining the services of an independent Inspection/Testing Agency/SIER, if such services are required by this manual. **Under no circumstances shall these services be provided by an independent agency/SIER, retained or engaged by the general construction contractor or any of his subcontractors.** The independent inspection and testing agency shall monitor the quality of construction and provide a communication link with the PWCSIS.

Before issuance of the building permit, a pre-construction meeting shall be held to establish the special inspections requirements for the project. An agreed-to program of document flow and field inspections will govern activities through the life of the project.

All submissions to the County must be accompanied by a cover letter which lists items transmitted and action requested. The transmittal letter must contain project details, such as permit number, project name and address, etc.

The requirements of the Third Party Building and Structures Certification Program and Third Party Inspection Certification Program for Minor Critical Projects, which are described in separate packages, are applicable to the Special Inspection Program.

In case of conflict among the industry standards, the project specifications, and this Manual, the more stringent requirement shall apply.

Special Inspections Manual shall be applied throughout the construction of the project and a copy of the Manual must be available at the project trailer or must be available on site from the time of the Special Inspection Pre-construction Meeting through submission of the Final Report of Special Inspections by the RDPR.

Hyperlinks to Special Inspections forms and handouts are referenced in [Appendix I](#). Sample form letters are provided in [Appendix II](#) of this Manual.

CHAPTER 3 - WHEN IS PWC SPECIAL INSPECTION APPLICABLE

The Special Inspections Program requirements, outlined in the PWCSIM, shall apply to the following structures and/or structural elements, submitted in the Statement of Special Inspections by the appropriate RDPR, or specified in BDD Policy 1.18 for minor critical projects, and/or, when so required by the Building Official:

- All high-rise buildings, as defined by the most current County-adopted IBC
- Construction requiring installation of deep foundations, helical pile foundations (helical piers), vertical masonry foundation elements (foundation piers)
- All pre-stressed concrete elements of buildings and structures regardless of their size
- All precast concrete structural members and tilt-up concrete panels
- All structural steel framed buildings which include any of the following:
 - Field welded, bolted rigid or semi-rigid connections for the purpose of stability or resistance to lateral loads
 - Bolted or welded stability bracing
 - Bolted connections that require a minimum pretension to be achieved
 - Clear spans of over 50 feet
 - Structural steel trusses or joists other than those of SJI specification
 - Plate girders of any span
 - Space frames with clear spans of over 35 feet
 - Cable supported structures
 - Open-web steel-joists and joist-girders (including those manufactured to SJI specifications)
 - Steel floor and roof decks
 - Field-welded shear studs
- Gravity load bearing cold-formed light gage steel structural members, e.g. in roof trusses and walls, temporary and permanent bracing details for roof trusses spanning 60 ft or greater.
- All masonry designed in accordance with ACI 530 /ASCE 5 and ACI 530.1 / ASCE 6 that is used as a structural member and fire rated assembly; (e.g. all load bearing masonry, non-load bearing vertical shaft enclosures, other non-load bearing grouted walls etc.) – See exceptions in IBC
- Elevators, Dumbwaiters, and Conveyor Equipment (Not Special Inspections items. Require mechanical third party inspections)
- Excavations that require structural support (refer to Chapter 10 - sheeting and shoring, for design and document submission requirements)
- All retaining wall systems with unbalanced fill height:
 - Greater than eight (8) feet
 - Between 4 to 8 feet with surcharge either from an adjacent structure or from a slope steeper than 3H:1V
- Wood Construction (e.g. fabrication of high-load diaphragm, metal-plate connected wood trusses spanning 60 ft and greater, etc.)
- Exterior Insulation and Finish System (EIFS) including water-resistive barrier coating – See exceptions in [Chapter 22](#)

- Sprayed Fire Resistant Material
- Mastic and Intumescent Fire-resistant Coatings
- Smoke Control Systems
- Special Cases - when determined by the Building Official

CHAPTER 4 - PRE-CONSTRUCTION AND POST CONCEALMENT INSPECTIONS MEETINGS

Pre-Construction Meeting

Whenever a project or element of a project is classified as requiring Special Inspections, a [pre-construction meeting](#) may take place and requirements discussed then must be satisfied before a building permit may be issued.

Exceptions:

Waiver of Pre-construction meeting: Special Inspections pre-construction meeting may be waived provided a meeting has been held for a similar project within six (6) months and all responsible parties involved in the current project application are the same as those involved in the previous project. The Owner or permit applicant shall submit a request for a waiver of preconstruction meeting. A sample for the [Request for waiver of preconstruction meeting](#) is provided in Appendix II Attachment D. The request letter must reference the previous permit number and the contact information of all the responsible parties. A copy of the request letter shall be sent to all responsible parties. All discussions and decisions of the previous meeting and any additional requirements determined shall apply to the new project.

Mandatory Third Party Inspections managed by the Special Inspections Section: Special Inspections projects, determined by the Building Official to be of minor complexity shall comply with the requirements of the [Building Development Division Policy: Third Party Certification Program for Minor Critical Projects](#). The projects will not require preconstruction meeting and involvement of an RDPR. However, the Owner or his/her authorized agent will be required to engage the services of an independent third party inspection engineer (TPIE)/agency to perform inspections and quality control of the construction. The following items, also listed in the [Requirements for Mandatory Third Party Inspections managed by SIS](#), must be submitted to PWCSIS before issuance of the building permit:

- i. A [Letter of Engagement](#) to perform Third Party Inspections, a sample form provided in Appendix II - Attachment E, shall be submitted by the Third Party Inspections Engineer (TPIE) and supported by a detailed scope of work, resumes and certifications of technicians, and a current laboratory accreditation certificate of the testing agency;
- ii. A [Building Pad Certification](#), if applicable.

PARTICIPANTS OF PRE-CONSTRUCTION MEETING

Owner, AR, SER, GER, GC, SIER, PWCSIS

WHEN REQUIRED

Prior to the issuance of a building permit, for all special inspection projects, excluding the above exceptions. The purpose of the meeting is to introduce all concerned parties to each other and to establish a program of document flow and field inspections which will govern activities through the life of the project.

ACTIVITIES

1. The Owner or his/her authorized representative will identify the participants and schedule the meeting by calling PWCSIS at (703) 792-6112. A contact sheet with names, addresses, e-mails and telephone numbers of those in attendance will be filled out at the meeting and copied and distributed to all attendees.
2. The meeting will normally be held at 5 County Complex Court in one of the conference rooms that will be identified at the time of scheduling. When convenient and/or appropriate, the meeting may also be held at the site.
3. The current version of the Special Inspections Manual will form the basis for the pre-construction meeting and will be used to review, answer or clarify elements of the program.
4. The RDPR (AR/ SER/ GER/MER) will submit to the PWCSIS a list of shop drawings, manufacturers' specifications and other structural documents that must be prepared for his/her approval and review by the County.
5. The SIER will submit copies of resumes and certifications of the individuals assigned to the project, and a copy of the current laboratory accreditation certificate.
6. Requirements for Inspection and Testing Services will be documented on the Statement and Schedule of Special Inspections. A hyperlink to the "Statement of Special Inspections" is in Appendix I Attachment E. The form, if not previously submitted to BPRS, will be submitted at the meeting by the Owner or the permit applicant or his/ her representative.
7. The applicable chapters of the PWCSIM and requirements of special inspections shall be discussed during the pre-construction meeting.

Post Concealment Inspections

When a complaint is received that any of the following events has occurred for a special inspections project or one that would have been a special inspections project, a post-concealment inspection shall take place:

1. Work has started without obtaining a building permit.
2. Required inspections in a permitted work either not performed or inspections performed by an unqualified inspector or any other reason casting doubt on the quality of covered up work.
3. The SIER is replaced during a project.
4. Work performed in the absence of an inspector.
5. Contractor chose to conceal an unapproved work.

1. Work has occurred without a Building Permit.

A [post-concealment inspections meeting](#) will be held, prior to issuance of the building permit and commencement of the post-concealment process. The construction documents submitted to the County for review must be approved before the meeting will be scheduled and held. The owner or the owner's agent is expected to be familiar and comply with all the County rules and regulations in addition to the other applicable codes and industry standards.

2. Required inspections in a permitted work either not performed or inspections performed by an unqualified inspector or any other reason casting doubt on the quality of covered up work.

A post-concealment inspection meeting may not be required for this violation/situation. However, an independent inspections engineer may be engaged to verify that the work performed is code compliant.

3. The SIER is replaced during a project.

The new SIER shall conduct a post concealment inspection or after due diligence take responsibility for the work already executed.

4. Work performed in the absence of an inspector.

The requirements described in item “2” above will be followed.

5. Contractor chose to cover an unapproved product.

The requirements described in item “2” above will be followed.

The post-concealment process, outlined below, shall be followed to resolve the violation/situation.

- a. **Verification of Violations:** The Special Inspection Section (SIS) will verify that violation has occurred.
- b. **Pre Post-concealment Inspections Meeting:** SIS will contact the owner to discuss the post-concealment inspections requirements. The owner will be requested to engage the services of a RDP, approved with the County, to submit a detailed technical proposal for the post-concealment inspections. Any County approved third party engineer involved in the inspections of the work under violation shall not be hired to perform the post-concealment inspections.
- c. **Submission of Proposal:** The new third party engineer, hereon referred to as SIER, will submit his/her proposal to the appropriate RDP of record (SER, AR, MER, GER) for approval and onward transmission to SIS for review and approval.
- d. **Review of proposal:** If the proposal is not approved by the SER(s) and/or SIS, the SIER will be requested to address the deficiencies in the post-concealment inspections proposal and resubmit.
- e. **Post-Concealment Inspections Meeting:** Post concealment inspections meeting will be scheduled and held.
- f. **Issuance of Building Permit:** Building permit will be issued to the owner after requirements of the post-concealment meeting are met, other County policies and procedures are complied with and applicable fees are paid.
- g. **Post concealment Inspections:** The SIER perform will perform post concealment inspections after the owner has obtained building permit. The inspections shall be based on the County approved post concealment inspections proposal.
- h. **Review of Post Concealment Inspection Report.** The post-concealment inspection report is a signed and sealed written report¹ prepared by the SIER upon completion of the post concealment inspection. The report shall be submitted to the SER(s), with a copy to SIS, for review and approval. The SER(s) will submit their approved reports to the SIS for review and approval.
- i. **Correction of Deficiencies in the Report:** If the SER(s) and/ or the SIS reject the report for lack of compliance, the owner and/or the SIER will be requested to address the comments by the SER(s) and/ or the SIS and step ‘h’ will be repeated.
- j. **Acceptance of Report:** When all deficiencies have been corrected, SIS will perform a final walk-through of the project before the report will be accepted.

After special inspections post-concealment process is completed, there may be other inspections to be conducted by the Building Construction Inspections Branch, such as, wall and ceiling concealment, trade inspections and final inspections.

¹ The SIER will establish his/her own format for this report to be self sufficient record of performed inspections and their results. The Final Report of Special Inspections may be utilized for this purpose in which case the Post Concealment Inspection Proposal will replace the Special Inspections Schedule.

CHAPTER 5 - CONSTRUCTION DOCUMENTS SUBMISSION TO THE SPECIAL INSPECTIONS SECTION

RESPONSIBLE PARTIES

Owner, AR, SER, GER, GC, SIER, PWCSIS

WHEN REQUIRED

Prior to the start of construction

ACTIVITIES

1. Prior to the start of construction, one set of County approved plans and other required documents including the building permit shall be available at the construction site.
2. **Approval of Shop Drawings and Other Submittals:**
 - i. Prior to start of construction of related item(s), a minimum of two sets of shop drawings, erection plans, pre-cast shop drawings, tilt-up panels lifting and insert details shop drawings and concrete mix designs, grout and mortar mix designs, EIFS manufacturer's specifications, SFRM manufacturer's specifications, etc. shall be submitted by the General Contractor for review and approval by the appropriate RDP of record (AR, SER, GER, MER) or their authorized representatives and onward submission to PWCSIS for review and approval. One of these sets of drawings shall be full size to be returned to the project site after approval. The other set shall be reduced size 11" x 17" to be retained by PWCSIS for its use.
 - ii. The RDP of record (AR/SER) shall perform a detailed review of the shop drawings and other submissions for compliance with the design concepts and the County approved plans.
 - iii. The review of shop drawings by the PWCSIS is limited to administrative and spot-checking of dimensions, beam sizes, connections, select structural layouts, and compliance to the VUSBC.
3. **Shop Drawings:**
 - i. There are two options with regard to the RDP stamping and initialing the shop drawings. The first option is that each sheet of the shop drawings shall be stamped and initialed by the appropriate RDP of record or their authorized RDP representative. The second option is that an index sheet shall be stamped and initialed by the appropriate RDP of record or their authorized RDP representative. The index sheet shall:
 - a. Be the first sheet of a bound or well stapled set of the shop drawings.
 - b. Indicate dates, titles of sheets, sheet numbers and revisions.A letter of authorization will be required from the appropriate RDP of record to identify the authorized RDP representative.
 - ii. **Concrete, Grout and Mortar Mix Design:** The mix design and the trial mix data/chart (strength test results) for the concrete, grout and mortar shall bear the seal and signature of a registered design professional. The SER shall stamp and initial the **mix proportions and the trial mix chart or field strength test records sheets (historical record)** before being submitted to PWCSIS for approval.
 - iii. **SER/AR approval Stamp:** The RDP of record company's shop drawing review stamp for shop drawings, mix designs and other submittals shall indicate the following terminologies: APPROVED, APPROVED AS NOTED or APPROVED AS CORRECTED, REVIEWED FOR INFORMATION. A sample of [acceptable formats of the SER/AR stamps](#) is shown in Appendix II Attachment I.

- iv. Upon approval of the shop drawings by the appropriate RDP of record or their authorized representative, two (2) copies shall be forwarded to the PWCSIS for review prior to the start of construction.
5. The Owner shall ensure that copies of the approved shop drawing(s) are furnished to the SIER for their use in performing inspections. The original copy shall be maintained on site for use by responsible parties.
6. Shop drawings with design calculations for light gauge steel carrying gravity loads, pre-engineered metal buildings or other designs provided by the Contractor's specialty RDP and previously not approved by Building Plan Review, must be submitted to Plan Review for approval.

CHAPTER 6 - SIER/ INSPECTION AND TESTING AGENCY REQUIREMENTS / QUALIFICATIONS

RESPONSIBLE PARTIES

Owner, SIER, SER, PWCSIS

WHEN REQUIRED

When it has been determined by the County that the Special Inspections Program criteria applies to a given project, or to a portion of a project, an independent Inspection/Testing Agency or agencies shall be employed by the Owner, the AR and/or the SER, to perform inspection and testing on the project.

QUALIFICATIONS

An acceptable independent inspection/testing agency shall have the following minimum qualifications:

1. The personnel involved in the testing and management of the project shall be under the full time direction of a professional engineer registered in the Commonwealth of Virginia, referred to as the Special Inspection Engineer of Record (SIER). **In addition, the SIER shall be on the current PWC [Approved Third Party Engineers](#).**
2. All laboratory facilities must meet the requirements of ASTM Specifications as applicable.
3. Laboratory facilities must be accredited by a County recognized agency such as the National Voluntary Laboratory Accreditation Program (NAVLAP), the American Association for Laboratory Accreditation (AALA), Washington Area Council of Engineering Laboratories (WACEL), or American Association of State Highway and Transportation Officials (AASHTO).
4. Except for individuals who are RDPs licensed in the Commonwealth of Virginia, field personnel shall be certified by examination through a recognized organization such as the American Concrete Institute (ACI), the National Institute for Certification in Engineering Technologies (NICET), Washington Area Council of Engineering Laboratories (WACEL), American Welding Society (AWS), American Society for Nondestructive Testing (ASNT), Virginia Department of Transportation (VDOT) or other organizations whose programs are recognized by the County. Individuals shall perform only those services in which they have demonstrated competency through such a recognized certification or registration program.
5. In the event that there is no program of certification or registration applicable to a specific function, the laboratory or individual involved shall furnish to the County background information exhibiting competency in the particular area, and shall also submit a signed statement from the RDP in Responsible Charge of the independent Inspection and Testing Agency attesting to the competency and identifying the basis upon which such statement is made.

PROCEDURAL REQUIREMENTS

1. The Owner, the AR and/or the SER shall advise the County as to who has been retained to provide the services in the Statement of Special Inspections.
2. In most cases the GER for the project will become the SIER. In the event that the SIER is a different individual than the GER, then the SIER will submit a sealed, signed and dated statement to PWCSIS at the Pre-construction meeting that he/she has reviewed the GER's findings and recommendation and accepts them, or propose modifications, as necessary, for approval by the County. The effect of the proposed modification on the design will be evaluated and incorporated before construction may begin. A sample for the [Letter of SIER accepting the County approved geotechnical report](#) is provided in Appendix II - Attachment B.
3. The individual assigned as SIER must have attended PWC conducted seminar for the Third Party Building and Structures Certification Program and should be in good standing on the approved list of engineers, maintained by the County, for Third Party Inspections. The assigned SIER must attend the pre-construction meeting for the project, remain the point of contact, and sign/seal all documents, including final certification.
4. The owner shall assure that copies of the County approved plans, specifications, and concrete mix designs are provided to the SIER before the related construction work is begun.
5. The SIER shall submit resumes of project engineer(s) and inspection personnel, inspectors' certifications from approved agencies, and current laboratory accreditation of facilities.

Only those technicians will be used on the project whose resumes and certifications have been submitted to the County. Any changes must have prior approval of the County. Technicians must be able to produce proof of their certification when asked to do so. Work may be stopped if work in progress requires the presence of a technician and one is not present, or the technician cannot give proof of his/her certification.

6. The approved inspections and testing agency shall perform inspection and testing only after verification of the following:
 - A. That a building permit applicable to the work in progress has been issued, and is on display at the project site. Careful examination of the permit shall be made so that inspections are not made for superstructure work when only footing and foundation permit has been issued.
 - B. An original set of Prince William County approved drawings and specifications are available at the job site. Any changes in the design during construction must be approved by the SER and the County before implementation.
 - C. An original set of the County approved concrete mix design, with the SER approval stamp, is available at the job site.
 - D. An original set of the County approved shop drawings, with the SER approval stamp, has been provided by the Owner for the particular work being performed.
7. One copy of daily inspection and/or test reports shall at the minimum be submitted to the SER for review and to the PWCSIS for review and record. These shall be progressively submitted to PWCSIS within fourteen (14) calendar days of the inspection or test date. The inspection and/or test reports shall be reviewed and their transmittal letters signed and sealed by the responsible RDP at the Inspection and Testing Agency. Whenever action is required from the SER for resolving deficiencies or addressing design changes, the SER shall respond within two weeks or sooner, depending on the nature of the case.
8. All pages of inspection and test reports should bear the correct building permit number, project name, and street address. The transmittal letter shall bear the project name and street address in

addition to the building permit number. All submitted reports must be legible, whether hand written or typed.

9. Approved and rejected reports shall be submitted to relevant parties. Unless deficiencies are discovered, these reports shall indicate that the work has been inspected and found to be in accordance with approved plans and specifications. If any deficiency is encountered, it shall be identified in writing, detailing the nature of the deficiency, its location, size, quantity, and any other pertinent information. Any discrepancies, not corrected the same day, must be notified by the SIER to the SER and the County by a fax or a phone call in addition to documentation in the Field Report. A checklist of deficiencies, also called the [Deficiency List](#), needs to be maintained on site as a permanent record and submitted to the County with field and test reports. The date the deficiencies are resolved, and the approving inspector's name, must be documented on the checklist. The [Deficiency List](#), with all deficiencies satisfactorily resolved, shall be submitted with the [Final Report of Special Inspections](#).
10. Follow-up reports shall be submitted by the Inspection/Testing Agency, documenting the correction of any problems noted in the inspection reports. At the completion of the project, all recorded problems or deficiencies shall be documented as having been corrected or being acceptable to the Architect and/or the Structural Engineer of Record. A completed deficiency list with all deficiencies resolved shall be submitted with the Final Report of Special Inspections.
11. In the event that an error, omission, inconsistency or ambiguity in the County approved plans and specifications is discovered, or a field revision is necessitated by unanticipated conditions, appropriate revisions or clarifications shall be developed by the AR and/or the SER. The AR or SER shall submit to PWCSIS a statement of the revision or clarifications in accordance with the [Building Development Division Policy: Special Inspections – Field Revisions](#).
12. **Neither the inspection/testing agency nor any of its personnel has responsibility for site safety, nor do they have authority or responsibility to stop work. They are, nonetheless, expected to immediately inform the appropriate responsible parties located on the site and the PWCSIS, if necessary, of any clear and present dangers, which in their opinion exist for follow-up, by such parties. It is recognized by all parties that inspection and/or testing firms and their personnel are only capable of expressing an opinion and that some hazards may not be observable or may not be recognized as hazards when observed. The PWCSIS, after consultation with the Building Official, may issue stop work orders if work on the building is being conducted in an unsafe and dangerous manner.**
13. In the event that individuals serving as the GER and/or the SIER are changed during the course of the work, the PWCSIS shall be notified immediately. The new SIER, familiar with the project may assume responsibility for the inspections of the special inspections items by submitting a letter to PWCSIS for approval. A sample for [Letter Assuming the Role as the New Special Inspections Engineer of Record](#), to be submitted, is provided in Appendix II -Attachment H. In the scenario where the new SIER is not familiar with the project, he/she shall request for all necessary and required information, perform independent verification of the completed work, and/or use other means, to be able to accept the role and responsibility.

CHAPTER 7 - THE AR/ SER QUALIFICATIONS & RESPONSIBILITIES

WHEN REQUIRED

When it has been specified by the RDPR or determined by the Building Official that the Special Inspection Program criteria apply to a given project or to a portion of a project, the Owner shall employ an RDPR (AR/ SER/GER/MER) to perform the design and approve the executed work. The appropriate RDPR shall also be retained by the owner during construction to perform the following responsibilities:

QUALIFICATIONS

The AR/ SER must be an RDP, licensed in the Commonwealth of Virginia.

RESPONSIBILITIES

The AR/ SER shall be the same individual that sealed the design drawings. If due to some compelling reasons, the AR/ SER cannot carry out all responsibilities of the project, upon getting an approval from the County, he/she may assign another RDP licensed in the Commonwealth of Virginia to represent him/her for attending the pre-construction meeting, making construction site visits and initialing shop drawings. The AR/ SER will remain the responsible party, and seal and sign the [Final Report of Special Inspections](#). A sample for the [Letter of Authorization](#) is provided in Appendix II – Attachment F.

Exceptions: Pre-engineered building/ prefabricated buildings that are limited area buildings and are one story, 35 feet or less in height, the SER/ AR for the building foundation may attend the preconstruction meeting, make construction site visits, and seal and sign the [Final Report of Special Inspections](#) in lieu of the SER/ AR for the building superstructure.

1. Any change in design shall be approved by the AR/ SER and reviewed and approved by the County before implementation/inspections.
2. The AR/ SER shall periodically visit the site to verify that the work is in accordance with the approved drawings and specifications.
3. The AR/ SER shall approve with his/ her approval stamp and initial any detailed shop drawings before submitting to the County for review and approval.
4. The AR/ SER shall approve with his/ her approval stamp and initial the concrete mix design before submitting to the County for review and approval.
5. Two copies of [Final Report of Special Inspections](#) form bearing the original seals and signatures of the SIER and the appropriate RDPR shall be submitted to PWCSIS.
6. One copy of daily inspection and/or test reports shall at the minimum be submitted to the SER for review. These shall be progressively submitted to PWCSIS within fourteen (14) calendar days of the inspection or test date. Whenever action is required from the SER for resolving deficiencies or addressing design changes, the SER shall respond within two weeks or sooner, depending on the nature of the case.

CHANGE OF AR/SER

When there is a change of the AR/SER during construction of a special inspections project, the Owner shall notify PWCSIS immediately. A new AR/SER shall be identified and the following steps shall be followed to enable the new AR/SER to assume responsibility of the project.

- i. The previous AR/SER shall submit a signed and sealed letter allowing the new AR/SER to take over the approved construction plans. The new AR/SER shall then submit a signed and sealed letter indicating his familiarity with the design and assume full responsibility of the design. In lieu of writing the letter, the new AR/SER has the option to sign and seal the approved plans after the previous AR/SER letter has been accepted.
- ii. Alternatively, if the previous AR/SER is unwilling to submit the release letter, the new AR/SER must submit a new set of design drawings under his/ her seal and signature for approval.

CHAPTER 8 - THE RESPONSIBILITIES OF THE GENERAL CONTRACTOR AND THE OWNER

WHEN REQUIRED

This is to apprise contractors and owners of their responsibilities, which will provide overall efficiency in the special inspections process. The Owner/ Contractor, before commencement and/or during construction, will ensure compliance with the requirements of the special inspections program. The responsibilities include, but are not limited to, the following:

RESPONSIBILITIES

Contractor Responsibilities

1. Site superintendent is present during the preconstruction meeting. The Contractor shall notify the SIS regarding any change of site superintendent.
2. Subcontractors for specialized works such as bridges, prestressing, shotcrete, retaining walls are represented during the preconstruction meeting.
3. Site address and Building Permit are visible from the street.
4. Trailer permit, if applicable, has been obtained, displayed visibly and trailer has been inspected.
5. County approved construction documents including, but not limited to, design drawings, shop drawings, specifications, concrete mix design, mortar/ grout mix design, masonry product data, geotechnical report, Special Inspection Manual, are available at the construction site.
6. Site is made accessible.
7. Erosion and sediment control devices are installed and maintained.
8. Curing box is available and used, if applicable.
9. Revisions, including construction field revisions, to the construction documents are approved by the County before implementation of the revision in accordance with the [Building Development Division Policy: Special Inspections – Field Revisions](#). The original County approved revised documents are maintained at the construction site.
10. Copy the SIS on all RFIs submitted to the design professional of record.
11. Ensure that the SIER maintains a copy of the updated [Deficiency List](#) in the field from the beginning to the end of special inspections.
12. Ensure the presence of an inspector/technician when works requiring continuous inspection, such as concrete construction, soil compaction etc.
13. Coordinate with the owner and report to PWCSIS of any incident or changes in site conditions that will directly or indirectly compromise the integrity of the structure.
14. Ensure that the “Final Report of Special Inspections” has been submitted to SIS and approved before scheduling for building inspections (wall concealment, ceiling concealment, building final)
15. Build strictly in accordance with the County approved plans, specifications, other applicable documents and building and industry codes.
16. Maintain safe environment in accordance with construction documents and VOSHA requirements.

Owner Responsibilities

1. Ensure that the Statement of Special Inspections is completely filled out and submitted to plan review at the time of plan submission.

2. Submit a Building Pad Certification with supporting documents to SIS which is a pre-requisite to the issuance of a building permit.
3. **Change of Registered Design Professional of Record (RDPR):** The Owner or his authorized agent will coordinate with the Building Plan Review Section and take one of the following steps to update the seal and signature on the construction documents if there is change of RDPR before or during construction.
 - i. The previous RDPR shall submit a signed and sealed letter allowing the new RDPR to take over the approved construction plans. The new RDPR shall then submit a signed and sealed letter indicating his familiarity with the design and assume full responsibility of the design. In lieu of writing the letter, the new RDPR has the option to sign and seal the approved plans after the previous RDPR letter has been accepted.
 - ii. Alternatively, if the old RDPR is unwilling to submit the release letter, the new RDPR must submit a new set of design drawings under his/her seal and signature for approval.
4. **Change of Special Inspections Engineer of Record (SIER):** When there is a change in the SIER during construction of a special inspections project, the Owner shall notify PWCSIS immediately in writing using the sample for [The Owner's Letter for Change of Special Inspections Engineer of Record](#) provided in Appendix II Attachment G. The following steps shall be followed for the new RDP, approved with the County, to assume the role as the SIER:
 - i. The new SIER shall be hired by the Owner and another meeting will be held involving all the responsible parties. If the new SIER is familiar with the construction from inception to the time of the change, he/she will submit a signed and sealed letter stating so before assuming the role as the SIER;
 - ii. However, if the SIER is not familiar with the inspections already performed, he/she will perform post concealment inspections in order to certify the work. The new SIER will be responsible for the inspections of the entire project without taking any exception.
5. The Owner or his authorized agent will apply for permit extension if a project remains inactive for more than six (6) months.
6. Ensure that Building Inspections Certifications for all [Mandatory Third Party Inspections projects](#) and [Final Report of Special Inspections](#) for retaining walls have been submitted to SIS upon completion of the project, and final inspections performed and approved by the Special Inspections Section.

CHAPTER 9 - SOILS AND FOUNDATIONS; INSPECTION AND TESTING

RESPONSIBLE PARTIES

Owner, GER/SIER, SER and PWCSIS

WHEN REQUIRED

All structural foundation elements, including spread and continuous footings, mats, piles, caissons, and structural fills (earthwork), including wall backfill, shall be constructed to the requirements, specifications and requirements shown on the approved construction documents and/or as determined by the County approved geotechnical report requirements for the project. Additionally, when it has been determined that the job site contains "problem soils", or if a geotechnical engineering report is required by the [Prince William County Design and Construction Standards Manual](#), all inspection and testing for earthwork, foundations, and related work shall be accomplished under the direct supervision of the GER and/ or the SIER. Problem soils includes but not limited to potentially expansive clayey soils, undocumented fill, unengineered fill, soils with high organic matter, sanitary landfill, etc. All inspection and testing shall be accomplished by a County [Approved Third Party Engineer](#), or by an appropriately certified soils technician under the direct supervision of a County [Approved Third Party Engineer](#).

PROCEDURAL REQUIREMENTS

1. Recommendations of the approved geotechnical report shall be implemented. All fills, supporting the foundation of any structure, and any other engineered fill, including backfill, shall be placed and compacted in accordance with the County approved construction documents. At least one certified soil technician or Professional Engineer shall be present during the entire period of each day's work, to monitor placement, and to test for proper compaction of any structural fill, by measurement of in-place density.
2. The sub-grade for all shallow foundation elements (footings and/or mat) shall be inspected and tested in accordance with accepted engineering practice to verify the required bearing capacity before the placement of concrete. Such verification shall include performing hand auger probes into the underlying soils, or other means determined to be appropriate by the SIER, to be able to verify the bearing capacity of the footing and the underlying soils.
3. Except when bearing on sound (unweathered) rock, or otherwise protected from frost, all footing sub-grades shall extend below the frost lines as stipulated in the County approved construction documents.
4. The footing excavation shall be clean, level and be free of any loose, deleterious and foreign objects, frozen soils, water, snow and ice. The dimensions of foundation elements shall be checked, and must equal or exceed the dimensions shown on the County approved drawings. Care shall be taken to help assure that proper clearances for concrete cover have been maintained between reinforcing steel and adjacent soil. Reinforcing steel shall be inspected, to help assure compliance with approved project documents with respect to size, number, location, spacing, and concrete cover. Concrete used in shallow foundations shall be inspected during placement, and sampled and tested in accordance with the requirements of the section entitled "Cast-in-Place Concrete".
5. Soils, supporting slabs on grade, shall be inspected in accordance with accepted engineering practice, to help assure that they are placed and compacted per the County approved documents, smoothly graded, free of deleterious materials, and prepared for concrete placement as required

by the County approved project documents. Concrete, used in slabs on grade, shall be inspected, sampled, and tested in accordance with the requirements of the Section, entitled "Cast-in-Place Concrete".

6. Deep foundations shall be inspected in accordance with accepted engineering practice. An approved Third Party engineer, or appropriately certified soil technician, shall be present during the entire period of each day's work to monitor construction. The degree of observation shall be established by the GER, taking into account the applicable building code criteria. A report of such inspection shall be submitted to the County, after review by the GER. Pile driving reports shall include findings based on inspection of piles before, during and after driving, and evaluation of the pile capacity based on driving resistance, dynamic pile testing, or static pile load tests. In case of caissons, the report shall indicate soil bearing, observations of the steel reinforcement, orientation, shape, diameter, depth, etc. of caissons.
7. As required in [Chapter 26](#), the SIER shall issue the [Final Report of Special Inspections](#) attesting to the work inspected being in compliance with the County approved construction documents including the soils report and the VUSBC.

CHAPTER 10 - SHEETING AND SHORING

RESPONSIBLE PARTIES

Owner, SER, GER, GC, Sheeting and Shoring Subcontractor, SIER, PWCSIS

WHEN REQUIRED & REQUIREMENTS

1. Temporary Sheeting and Shoring prepared by a Specialty Contractor that are not part of the foundation system and are not part of building's permanent structure:
 - i. Shall be designed by a VA registered design professional.
 - ii. Two (2) sets shall be submitted to PWC Special Inspection for review and documentation; and one approved set will be returned to the Contractor.
2. For sheeting and shoring prepared by a Specialty Contractor that is part of the building's permanent structure or impacts elements of the building under special inspections.
 - i. Shall be designed by a VA registered design professional
 - ii. Two (2) sets including design calculations shall be reviewed and approved by the appropriate RDP of record
 - iii. The approved sets shall be submitted to Building Plan Review for review prior to the start of construction.

INSPECTION ACTIVITIES

1. The County approved set of the sheeting and shoring drawings shall be available at the construction site
2. The SIER shall monitor the installation and in place condition of the work.
3. At the completion of the work, the SIER shall submit a final report of special inspections to the PWCSIS, indicating compliance of plans, specifications, design criteria, and applicable codes.
4. Throughout the course of the project, all slopes shall be protected in accordance with the County approved plans for the project.

CHAPTER 11 - CAST-IN-PLACE/POST-TENSIONED AND TILT-UP CONCRETE CONSTRUCTION - INSPECTION AND TESTING

RESPONSIBLE PARTIES

Owner, Contractor, SIER, SER, PWCSIS

WHEN REQUIRED

Whenever concrete is to be placed in complex structures.

PROCEDURAL REQUIREMENTS

APPROVALS

1. Two copies of concrete mix design and/or reinforcing steel shop drawings, reviewed and approved by the SER shall be submitted to PWCSIS for review and approval prior to concrete placement. The SER shall review and approve the mixture proportions, mixture proportion data, normally presented in a table, chart or field test data, and all supporting concrete materials documents required by ACI.
2. A County approved copy of the mix design(s) shall be provided to the testing agency, by the Owner, for concrete mix verification. A copy of the County approved mix design shall be maintained on site.
3. Two copies of post-tensioning shop drawings shall be submitted to the PWCSIS for review and approval after they have been reviewed and approved by the SER.
4. Prior to erection of the tilt-up concrete panels, two (2) sets of the manuals showing lifting and attachment details to tilt-up reinforced concrete panels and calculations shall be submitted to the SER for review. The SER reviewed documents will be submitted to PWCSIS for review and approval. One set of the County reviewed sets will be returned to the contractor.

TESTING

1. The full-time presence of a certified inspector or technician is required during the placement of concrete. Additional inspectors or technicians shall be required when the point of deposit of concrete cannot be observed by the individual monitoring the discharge from trucks or the batch plant.
2. Before concrete placement, forms shall be inspected by the SIER or his/her representative to verify the type of material, cleanliness, size, and conformity to County approved formwork design drawings.
3. Reinforcing shall be inspected by the SIER or his/her representative with respect to cleanliness, size, quantity, spacing, splices, clearances, embedded items, and grade of steel.
4. The concrete shall be tested for slump, air content (when applicable) and concrete temperature. In addition, ambient temperature and the time from mixing with water to completion of placement shall also be recorded.
5. As a minimum, the following number of concrete test cylinders shall be cast, cured and tested for each day's of concrete placement, or for each 150 cubic yards of concrete, or for each 5,000 square feet surface area of concrete placed, whichever represents the least quantity of concrete. It is emphasized that if the inspector notices any changes in the quality of concrete, he/she shall perform additional tests and mold more cylinders for testing.

For elevated slab (to include Beams, Joists, Girders):	Walls, tilt-up panels, Columns	For Footings, Slabs on Metal Deck and all other Structural Concrete
2 @ 7 days, L.C	2 @ 7 days, L.C	2 @ 7 days, L.C
2 @ 7 days, F.C	2 @ 7 days, F.C	2 @ 28 days, L.C
2 @ 28 days, L.C	2 @ 28 days, L.C	-
2 @ 28 days, F.C	2 @ 28 days, F.C	-

L.C. = Lab cured

F.C. = Field cured

6. Any additional test specimens shall be cast as directed by the AR or the SER. Two specimens are required for each test. To establish break data, two cylinders must be broken and averaged.
7. Additional cylinders may be needed for early concrete form stripping. See [Chapter 12 - Cast-in-Place Concrete: Formwork, Stripping, and Re-shoring](#).
8. All concrete test cylinders shall be cast, stored and tested according to ACI and ASTM standards.
9. Post-tensioned reinforcing shall be inspected for chair heights, tendon profiles, elimination of tendon snaking, and horizontal ties between chairs.
10. A concrete cylinder curing box shall be provided and maintained by the Contractor for curing of concrete cylinders for test purposes. The curing box shall be insulated and shall be of dimensions adequate to store all concrete cylinders that will be produced prior to transportation to the laboratory for testing. The box shall be furnished with a thermometer which measures the internal temperature of the box and can be read from the outside without opening the box. The curing box shall maintain an internal temperature of between 60°F to 80°F during the period of curing of the cylinders.

LOW BREAKS

1. The AR/SER shall submit to the County a copy of records, pertaining to under-strength concrete, with his/her written recommendations and proposed actions in this regard.
2. The AR/SER shall advise PWCSIS as to what type of testing method will be used to evaluate the strength of concrete whenever test results are low. PWCSIS will accept non-destructive testing only if recommended by SIER and accepted by SER.

CHAPTER 12 - CAST-IN-PLACE/POST-TENSIONED AND TILT-UP CONCRETE CONSTRUCTION - FORMWORK, STRIPPING AND RESHORING

RESPONSIBLE PARTIES

Owner, GC, Concrete Subcontractor, SIER, SER, PWCSIS

WHEN REQUIRED

When the approved construction documents and specifications require use of form, stripping and reshoring, the following minimum requirements shall be met before the commencement of work.

PROCEDURAL REQUIREMENTS

1. An RDP, licensed in the Commonwealth of Virginia, shall submit to the AR/SER through the subcontractor and GC, a design encompassing formwork requirements, stripping criteria, and reshoring procedures for structural concrete slabs, beams, walls, and columns.
2. The SER shall review the documents in accordance with the design parameters of the County approved drawings, and then return the approved drawings to the GC.
3. The GC shall submit two (2) copies of the SER approved documents to the PWCSIS, for review and approval, before use in the placement of concrete. The GC will distribute County approved copies to the inspection/testing agency and the concrete subcontractor. A copy of the County approved sets shall be maintained on the construction site.
4. Field cured cylinders shall be kept as close as possible to the location of placement of the concrete they represent, and be exposed to, as near as possible, the same environment.
5. The inspection/testing agency shall distribute to the PWCSIS all ongoing formwork inspection reports.
6. In keeping with the stripping requirements of the County approved plans and specifications, the SIER shall initiate a stripping letter. This letter shall contain the results of the field cured cylinders, molded for this purpose, along with the stripping requirements, stated in the County approved formwork plans. The stripping letter shall contain the seal and signature of the SIER and shall be reviewed by the SER prior to submittal to the PWCSIS.

Formwork shall only be removed after the stripping letter has been reviewed and approved by the PWCSIS.

Possession of this County reviewed letter does not in any way relieve the GC of his responsibilities to evaluate the removal of formwork to determine if it is safe and appropriate prior to commencing removal of forms.

7. When field cured strength test results do not meet formwork removal requirements, the RDP preparing the formwork drawings may review any additional available information and make a recommendation to allow stripping to proceed.
 - 7.1 The SER shall review the formwork design engineer's recommendation and authorize the issuance of a stripping letter. This authorization must be in writing and shall be submitted to the PWCSIS for review and approval.
 - 7.2 When structural members, to be stripped, are of post-tensioned design, elongation records, approved by the SER, shall be attached to the approved stripping letter.

CHAPTER 13 - CAST-IN-PLACE/POST-TENSIONED AND TILT-UP CONCRETE CONSTRUCTION - REQUIREMENTS FOR COLD/HOT WEATHER CONCRETE

RESPONSIBLE PARTIES

Owner, GC, Concrete Subcontractors, SIER, SER, and PWCSIS

WHEN REQUIRED

At the beginning of the Project, County submission requirements will be established during the Special Inspections Pre-construction Meeting. An agreed upon program of temperature monitoring and reporting procedures will be adhered to during cold weather periods.

PROCEDURAL REQUIREMENTS

1. Cold Weather Temperature Requirements
 - A. During cold weather, concrete shall be placed according to recommendations in ACI.
 - B. All concrete (slabs, columns, walls, beams, footings, etc.) shall be maintained above 50° F and must be cured for the first three (3) days with the appropriate curing compound or method.
 - C. If the area is enclosed, the temperature in the enclosure shall be monitored so that it does not exceed 80° F, or as otherwise specified by the SER. Proper moisture levels shall be maintained at all times.
 - D. The use of blankets or insulation on top of exposed concrete, such as elevated slabs, is strongly recommended (especially on cold, windy days) to help maintain the temperature of concrete above 50° F.
 - E. During protection periods outlined above (three successive days of below 40° F mean), inspections personnel shall record temperatures on all exposed concrete for 72 hours or until the mean temperature rises above 40° F for more than three successive days. The use of maximum and minimum thermometers to record temperatures is recommended for determining the mean temperature.
 - F. Temperature readings and appropriate data shall be recorded on a log sheet as per ACI. The temperature log sheet shall be attached to each concrete formwork stripping request to facilitate the engineer's and the County Inspector's review of the stripping request.
 - G. Temperature readings shall be taken at a minimum of four (4) locations along the edge of the slab being monitored. Additional locations may be designated by the County Inspector if the concrete surface area is unusually large.
2. Hot Weather Temperature Requirements.
 - A. During the hot weather, concrete shall be placed according to recommendations in ACI.
 - B. Ingredients shall be cooled before mixing to maintain concrete temperature below 90°F at time of placement. Chilled water or chopped ice may be used to control the temperature, provided water equivalent of ice is calculated and added to total amount of mixing water.
 - C. Reinforcing steel shall be covered with water soaked burlap so steel temperature will not exceed ambient temperature immediately before embedding in concrete.

- D. Forms, steel reinforcement, and sub-grade shall be fog sprayed just before placing concrete. Sub-grade shall be uniformly moistened without standing water, soft spots, or dry areas.
3. Stripping Requirements
- A. The stripping criteria, as approved by the SER, shall be met at all times.
 - B. Stripping operations cannot begin until all testing and inspection reports have been submitted to and approved by the PWCSIS.
 - C. The stripping request shall be in accordance with the Special Inspections requirements of Prince William County.
 - D. The SER shall approve changes to stripping requirements subject to the review and approval of Prince William County.
4. Testing of Cylinders
- A. ACI 318 requires testing of field cured cylinders. The testing shall be done on seven (7) and twenty-eight (28) days.
 - B. The contractor may make additional sets of concrete specimens to verify the adequacy of protective measures.
 - C. If accelerators or other additives are to be used, they shall be shown in the approved mix design, approved by the SER and the PWCSIS.

CHAPTER 14 – PRECAST/PRESTRESSED CONCRETE CONSTRUCTION

RESPONSIBLE PARTIES

Owner, GC, SIER, AR/SER, RDP preparing document, PWCSIS

WHEN REQUIRED

Whenever the project includes precast/prestressed concrete structures and other structures with precast skins

QUALIFICATIONS

At the beginning of the Project, County submission requirements will be defined during the Special Inspections Pre-construction Meeting. The agreed program of document flow and field inspections shall be adhered to throughout the life of the project.

PROCEDURAL REQUIREMENTS

1. An RDP, licensed in the Commonwealth of Virginia, with experience in the design of precast/prestressed concrete structures, shall submit to the AR and/or SER, through the general contractor, precast/prestressed shop drawings, connection drawings, mix design, calculations and all other required items, as necessary.
2. The AR/SER shall review submittals for conformance with the design intent of County approved permit drawings, and then return the same to the general contractor.
3. The general contractor shall submit two (2) copies of the approved documents to the PWCBPRS for review and approval prior to construction. The GC will distribute County approved documents to the SIER and to the originating subcontractor.
4. Inspections shall be conducted, as required by the Statement of Special Inspections, VUSBC, County approved plans, specifications, or other appropriate codes and documents.
5. The SIER shall submit to the PWCSIS all strength test results, quality control reports, as well as SIER reports on erection review.
6. The precast plant must be under the direct supervision of an RDP, licensed in the Commonwealth of Virginia, in order to certify that the precast plant has a documented and active Quality Control Program or certified with PCI or NPCA. If the precast plant is not under the direct supervision of a Virginia RDP or certified with PCI or NPCA, the SIER will be required to verify that the precast plant has a documented and implemented Quality Control Program.
7. All connections shall be inspected for conformance with County approved documents. Welded connections shall be inspected in accordance with the AWS. The connections which are not in accordance with approved documents due to field modifications, mis-alignments, etc., shall be designed by the RDP preparing the precast design and approved by the SER. Weld inspection shall be in conformance with the requirements of American Welding Society (AWS). Weld Inspectors shall be certified in accordance with the requirements of AWS.
8. Fabrication, installation, quality requirements and testing of precast concrete wall panels shall comply with the requirements of ACI.

CHAPTER 15 - ON SITE CONCRETE BATCH PLANT

RESPONSIBLE PARTIES

GC, Subcontractor operating the plant, SIER, PWCSIS

WHEN REQUIRED

Whenever a concrete batch plant is to be used on site.

PROCEDURAL REQUIREMENTS

APPROVALS:

1. Prior to the manufacture of concrete, the SIER shall inspect the plant for conformance to standards, outlined in this section, and shall verify the accuracy of scales, before they are used.
2. Batch plant operator must have ACI or State of Virginia concrete batcher and concrete technician certification to operate the plant.

GENERAL SITE REQUIREMENTS:

1. 20 feet wide access road. The roadway should be adequate to prevent delivery trucks from contaminating stockpiles.
2. A mud mat, thick enough to prevent contamination of stockpiles.
3. Barricades and warning devices to prevent workers from entering the working radius of the scraper boom.
4. Stockpiles shall be separated by walls, extending to the outside perimeter of the boom radius. These walls shall have a 45° minimum angle from the leading edge of the stock pile.
5. All other requirements of the current version of ASTM and ACI shall be met.

CHAPTER 16 - TOWER CRANES

RESPONSIBLE PARTIES

GC, Contractor operating the crane, SIER, the manufacturer's representative, the crane owner, PWCSIS

WHEN REQUIRED

When a tower crane is needed for a project.

PROCEDURAL REQUIREMENTS

APPROVALS:

1. The crane owner or GC shall submit the following information to PWCSIS, Manufacturer's operating model number, hook height, boom length, 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).
2. The crane foundation shall be designed by an RDP, licensed in the Commonwealth of Virginia, who shall submit his design and calculations to the PWCBPRS. Design and calculations shall clearly indicate dimensions, required concrete compressive strength ($f'c$), steel reinforcement and allowable soil bearing pressure.
3. Soil bearing pressure shall be as approved by the GER/SIER.
4. An electrical permit shall be obtained and an inspection by a PWC **ELECTRICAL INSPECTOR** shall be scheduled immediately upon completion of installation and shall be performed prior to the use of the crane.
5. The inspection/testing agency shall inspect steel reinforcement and concrete placement, of crane foundation, for conformance with the approved plans and ACI 318.

FOUNDATION CONCRETE:

1. Foundations.

Plans, sealed and signed by an RDP, licensed in the Commonwealth of Virginia, showing the crane location, boom swing and method of support for cranes located within or supported by the structure, shall be reviewed and approved by the SER and submitted to PWCSIS for approval.

2. The concrete mix design shall be submitted to PWCSIS for review and approval after being reviewed and approved by the SER.
3. Compressive strength test results of four (4) concrete test cylinders are required. Two of the test cylinders shall be laboratory cured and tested at 28 days and the other two field-cured and tested at 28 days. Additional field cured cylinders may be required for early installation and use of the tower crane.
4. Concrete test reports shall be submitted to the SER for approval and forwarded to PWCSIS for approval before the installation of tower crane.

SAFETY RULES AND REQUIREMENTS:

In the absence of specific standards for the regulation of climbing tower cranes and traveling tower cranes, the following safety rules and requirements are hereby determined by the authority of VUSBC. VOSHA regulations shall also apply.

1. Erection

All cranes shall be erected and maintained in accordance with the manufacturer's recommendations. Erection shall be performed under the supervision of a person experienced in the erection of climbing tower cranes and traveling tower cranes. A copy of manufacturer's manual on erection and operation shall be furnished to the operator and kept on the job site. Specifications shall be provided to the independent engineer and the PWCSIS. No crane is to be erected in the field before inspection of crane base, tower sections, jib and counter jib for structural defects, by an independent engineer.

- A. Adequate precautions shall be taken during erection, to prevent collapse of the equipment. All guying and bracing shall conform to the manufacturer's recommendations.
- B. Elevation, at four points of the crane base, shall be checked for settlement or other movement by the contractor at erection, at thirty (30) days from the erection date and every ninety (90) days thereafter. All checks must be reported to PWCSIS.
- C. Cranes shall be equipped with load-limiting devices, which shall be set for loads in accordance with the manufacturer's recommendations and sealed at the time of inspection. A record, noting any reason for removing or breaking the seal, shall be kept on the job site. Devices shall remain sealed during the operation of the crane.
- D. Jibs and counterweights shall be erected and maintained so that no part shall strike any building, overhead wiring, or any other object while slewing in a 360 radius. Cranes when idle shall be left to slew in a 360-degree radius unless otherwise recommended by the manufacturer. All signs shall be installed in accordance with the manufacturer's installation instructions.
- E. The ballast, the foot of the tower and the ballast hung from the counterweight, shall be designed, installed, and maintained so that it can neither move nor fall while the crane is in operation.
- F. When the tower is erected within the building structure, the support, vertical shoring and bracing shall be approved by the SER and PWCSIS.
- G. All bolts shall be secured in accordance with manufacturer's specifications, and shall be inspected thirty (30) days after erection and ninety (90) days thereafter. Results of these inspections shall be sent to the PWCSIS.
- H. The climbing device (i.e., hydraulic jacks or wire rope system) shall be checked before each climb.

2. Electrical Equipment - All installation shall comply with the National Electrical Code (NEC).

All motors, controls, switches, etc. shall be grounded in accordance with applicable sections of the National Electrical Code (NEC). All flexible power cords or lines shall be in accordance with the applicable sections of the NEC. All exposed metal parts, including pendant controls, shall be effectively grounded in accordance the NEC.

- A. The operator's remote control system shall be supplied by an isolating transformer.
- B. All electrical connections and fixtures, exposed to weather, shall be of a weatherproof type.

- C. All electric control panel doors shall be equipped with switches and shall be locked when crane is working. If any panel doors are opened, while the crane is in operation, power to the motor shall shut off automatically.
- D. An electrical permit is required for the above work and a final electrical inspection must be done prior to PWCSIS approval of the tower crane being put into operation.
- E. Provision shall be made to prevent accidental reversing of all motors.
- F. Cranes shall be equipped with automatic braking devices to stop all motion except slewing, which shall be stopped by manual device, to permit control in the event of power failures.
- G. All electric motors shall be separately equipped with a current overload prevention device.

3. Safety Devices

All safety devices provided shall be maintained in operable condition at all times.

- A. The trolley shall be equipped with an automatic braking device, capable of stopping trolley movement, in case of trolley cable breakage or power failure.
- B. The crane shall be equipped with a device to limit the upward travel of the hoist block.
- C. Travel limits shall be provided on cranes with derricks or jibs.

4. Test Loads

- A. A load capacity chart shall be mounted on the crane.
- B. A test load of 105% minimum to 110% maximum of the rated capacity of the crane at the tip shall be available on the job site at all times. The PWCSIS Inspector has authority to require a load test at any time.

5. Cabs, Controls, Ladders, and Platforms

- A. When located under or near an overhead working area, the cabs and all other operator stations shall be provided with a roof to protect the operator from falling objects.
- B. The cabs shall be provided with heat.
- C. The cab shall be equipped with an approved fire extinguisher.
- D. A load capacity chart shall be posted in the cab and at all other operator stations.
- E. All controls shall be of the "deadman" type.
- F. All controls shall be clearly marked to indicate their purpose and mode of operation.
- G. Fixed ladders, giving access to the cabs and to other platforms, shall be provided. Ladders shall be erected in accordance with VOSHA requirements.
- H. Platforms shall be provided with standard railings. Where platforms are impractical, safety belts and lines shall be provided for employees performing maintenance or inspection work.

6. Safe Practices

- A. Cranes shall not be operated in winds which exceed the manufacturer's specifications.

- B. No loads shall be moved over public space, unless precautions have been taken to alert pedestrians and vehicular traffic through the use of a flagman or barricades or unless overhead protection is erected over the public space, as approved by the PWCSIS.
- C. An audible alarm shall be provided to warn of crane movement. The alarm shall be operated from the operator's station.
- D. A clearance of eight (8) feet shall be maintained between the bottom of the load and the deck or the platform upon which men are working.
- E. No crane shall be raised to a new working level while construction personnel are working in the immediate area of the crane.
- F. The load line shall be kept in a substantially vertical position at all times.
- G. The moment overload device shall be tested periodically in accordance with manufacturer's specification. All other limit switches shall be checked at the time of erection and malfunction of any of the above mentioned shall be reported to the person in charge.

7. Testing and Inspection

- A. All tower cranes shall be inspected by an independent engineer, PWCSIS engineer and the manufacturer's representative before each erection. The independent engineer shall be specialized in this line of work and accredited by an agency such as The United States Department of Labor/OSHA. Copies of the inspection report shall be submitted by the independent engineer to the PWCSIS, the owner and the user of the crane. This inspection shall include a visual inspection for cracks in welds and component parts. Any defects, apparent as a result of such visual inspection, shall be subject to radiographic or ultrasonic inspection.
- B. Thirty (30) days after erection and every ninety (90) days thereafter, the manufacturer shall inspect the integrity of the crane base, tower section, jib and counter jib, and the inspection report shall be submitted by the contractor to the PWCSIS. The inspection shall be performed and report prepared by the independent engineer or an approved agency.

CHAPTER 17 - MASONRY CONSTRUCTION; INSPECTION AND TESTING

RESPONSIBLE PARTIES

Owner, Contractor, SER, AR, SIER and PWCSIS

WHEN REQUIRED

All masonry used as a structural members and fire rated assembly. See exceptions in IBC.

PROCEDURAL REQUIREMENTS

1. Approvals:

- A. Grout and mortar mix designs and masonry product data, approved by the SER, shall be submitted to PWCSIS for review and approval, prior to its use in a complex structure.
- B. A County reviewed design mix shall be provided to the SIER for use in mix verification.
- C. All masonry materials, to be used in the construction of the complex structure, shall be approved by the SER and PWCSIS.
- D. The general contractor or masonry subcontractor shall submit shop drawings of reinforced (engineered) masonry construction to PWCSIS, prior to construction but after review and approval by the SER.
- E. If applicable, prior to the start of related construction, bracing details prepared by a registered design professional in the Commonwealth of Virginia, shall be submitted to PWCSIS for review and documentation. The bracing details shall be designed per the current basic wind speed requirements of the County.

CONSTRUCTION OPERATIONS

1. Masonry construction shall be as set forth below, in accordance with applicable VOSHA requirements.

- A. Limited access zone shall be established whenever a masonry wall is being constructed. The limited access zone shall conform to the following:
 1. The limited access zone shall be established prior to the start of construction of the wall.
 2. The limited access zone shall be equal to the height of the wall to be constructed plus four feet, and shall run the entire length of the wall.
 3. The limited access zone shall be established on the side of the wall which will be unscaffolded.
 4. The limited access zone shall be restricted to entry by employees actively engaged in constructing the wall. No other employees shall be permitted to enter the zone.
 5. The limited access zone shall remain in place until the wall is adequately supported to prevent overturning and to prevent collapse unless the height of the wall is over eight feet, in which case the limited access zone shall remain in place until the requirements of paragraph (b) of this section have been met.
- B. All masonry walls over eight (8) feet in height shall be adequately braced to prevent collapse unless the wall is otherwise adequately supported. The bracing shall remain in place until permanent supporting elements of the structure are in place.

2. No structural loads shall be imposed on any vertical load carrying masonry member, which is less than seven days old, unless the mortar and grout strength criteria, established by the SER, for carrying such loads are satisfied.

TESTING AND INSPECTION

1. The required inspections for masonry elements of buildings and structures shall be performed by the SIER as outlined in the Statement of Special Inspections schedule.
2. As stipulated in [Chapter 26](#), the SIER shall issue the [Final Report of Special Inspections](#) attesting to the work inspected being in compliance with the County approved documents.
3. Deviation from Standards and Specifications
 - A. The SER shall report to the PWCSIS any deviation from standards or specifications.
 - B. The SER shall submit to PWCSIS, for review and approval, sealed and signed letter of recommended corrective actions.

CHAPTER 18 - MASONRY CONSTRUCTION; REQUIREMENTS FOR COLD/ HOT WEATHER CONSTRUCTION

RESPONSIBLE PARTIES

GC, Masonry Contractor, SIER, AR, SER and PWCSIS

WHEN REQUIRED

All masonry used as a structural member and fire rated assembly and constructed during cold/ hot weather as described below:

PROCEDURAL REQUIREMENTS

1. Cold Weather Construction: When either the ambient temperature falls below 40°F, or the temperature of the masonry units is below 40°F, cold weather construction requirements as specified in the IBC shall be implemented. The following procedures shall be implemented:
 - A. No frozen materials shall be used.
 - B. When air temperature is below 40°F, mixing water shall be heated.
 - C. When air temperature is between 20°F and 32°F, sand and water shall be heated.
 - D. When air temperature is below 20°F, masonry units shall be heated as well, and heated enclosures shall be used with a minimum temperature of 40°F.
 - E. Masonry must be protected from freezing for 24 hours after laying.
 - F. Temperature monitoring shall be the responsibility of the testing agency and records shall be submitted to PWCSIS with daily inspection reports.
2. Hot Weather Construction: When either the ambient temperature equals or exceeds 100°F, or the ambient temperature equals or exceeds 90°F with a wind speed greater than 8 mph, hot weather construction requirements as specified in the IBC shall be implemented.

CHAPTER 19 - STRUCTURAL STEEL; OPEN WEB STEEL JOISTS, METAL DECK, COLD-FORMED STEEL STRUCTURAL MEMBERS AND INSPECTION

RESPONSIBLE PARTIES

AR/SER, GC, Steel Fabricator or Manufacturer, SIER, Independent Testing and Inspection Agency, PWCSIS

WHEN REQUIRED

1. Buildings/Structures containing structural steel systems listed in [Chapter 3](#) of this manual.
2. Gravity load bearing cold-formed steel structural members (e.g. light gage steel trusses, light gage steel framing that is the primary structural member, light gage metal deck).
3. Temporary and Permanent Bracing for cold-formed steel roof trusses spanning 60 ft or greater.

PROCEDURAL REQUIREMENTS

1. When steel framing is used, steel shop drawings for all projects shall be submitted to PWCSIS. Two sets of steel shop drawings shall be submitted to the AR/SER for review and approval. After approval by the AR/SER, the GC shall submit these shop drawings to PWCSIS for review and approval prior to erection. After the County's review and approval of the shop drawings, one set will stay at the County office. The other set will be returned to the general contractor, to be kept at the construction site until completion of the building, to be used by the SIER for quality control inspections.
2. When the structure exceeds three (3) levels above grade or when the structure, regardless of height, requires field welding of rigid or semi-rigid connections for the purpose of stability or to resist lateral loads, the SER/SIER or their authorized representatives shall inspect connections in accordance with the appropriate industry standard(s).
3. The work will be inspected and tested, at reasonable and appropriate intervals, so that steel elements may be seen before they are covered by other building elements.
4. All welding, performed under this section, will be certified by welders whose certifications are current. All welders shall be certified in accordance with the requirements of AWS or other equivalent national authorities.

TESTING AND INSPECTION

1. Inspection of steel fabricators: Where fabrication of structural load bearing members and assemblies is being performed on the premises of a fabricator's shop, special inspection for the fabricated items shall be required. Exception: Special Inspection of a steel fabricator shall not be required when the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such a case, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, grade, and mill test reports for main stress carrying elements and bolts can be determined.
2. Fabrication procedures: The special inspector shall verify that the fabricator maintains detailed fabrication and quality control procedures which provide a basis for inspection control of workmanship and fabricator's ability to conform to approved drawings, project specifications and

referenced standards. The SIER shall review the procedures for completeness and adequacy, relative to the code requirements, for the fabricator's scope or work. The verification of the fabricator's quality control procedures by the SIER is not required if the fabricator is certified with American Institute of Steel Construction (AISC).

3. Procedures implementation: The SIER shall verify that the fabricator is properly implementing the fabrication and quality control procedures outlined above.
4. Steel Construction: The special inspections for steel elements of buildings and structures shall be performed by the SIER.
5. Material receiving: All main stress carrying elements, welding material, and bolting material shall be inspected for conformance with requirements of the IBC and approved construction plans.
6. Erection: Special inspections are required for bolts, welding, and details as specified in the Statement of Special Inspections.
7. All deficiencies observed during the construction of the structural steel and documented in the [Deficiency List](#) shall be corrected and re-inspected before submission of the [Final Report of Special Inspections](#) to PWCSIS.

CHAPTER 20 - ELEVATORS, DUMBWAITERS AND CONVEYOR EQUIPMENT

RESPONSIBLE PARTIES

Owner, GC, AR/SER, Elevator Fabricator or Manufacturer, Elevator Inspection and Testing Agency or Agent, PWCSIS

WHEN REQUIRED

Whenever elevators, dumbwaiters and conveyor equipment are to be installed.

ACTIVITIES

1. Prior to the start of construction, three (3) sets of elevator plans and specifications shall be submitted to Building Plans Review Section. Plans and specifications shall bear the seal and signature of an Architect or a Professional Engineer, registered in the Commonwealth of Virginia.
2. The owner, AR/SER, or elevator fabricator, or manufacturer, shall specify which of the elevator inspection and testing agencies or agents, approved by DDS is/are to be used for the inspection and testing of the equipment. All costs, associated with third party testing and inspections, shall be borne by the owner.
3. After review and approval by Mechanical Plans Review, one set of plans and specifications shall be retained by DDS and two sets of plans and specifications shall be forwarded to Permits and Records for issuance of the permit.
4. After permit is issued, work may begin.
5. The results of all inspections and testing by the approved elevator inspection and testing agency shall be forwarded to DDS to the attention of the Chief Mechanical Inspector, prior to occupancy or use.
6. DDS's Mechanical Inspections section shall perform quality control monitoring of equipment construction inspections and testing.
7. Upon receipt and approval of the reports, this office will issue a certification card which shall be posted on the equipment.

QUALIFICATIONS:

If the owner, AR/SER, or the elevator fabricator, or manufacturer, requests that inspections or testing be performed by an agency or agent not on DDS's list of approved agencies, qualification and certification information shall be submitted to DDS for approval prior to construction and inspection.

INSPECTIONS AND TESTING:

Inspections and testing shall be performed in accordance with the edition of ANSI/ASME, as referenced by the IBC, as adopted by the Virginia Uniform Statewide Building Code.

CHAPTER 21 – SPRAYED FIRE-RESISTANT MATERIALS; MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS & STANDPIPES

RESPONSIBLE PARTIES

GC, Subcontractor, SIER, AR/SER and PWCSIS

WHEN REQUIRED

The requirements of this chapter, IBC section for sprayed fire-resistant materials and IBC section for mastic and intumescent fire-resistant coatings shall be used to provide required fire resistance ratings for structural elements and decks. Sprayed fire-resistant materials/Mastic and intumescent fire-resistant coatings shall not be applied to building elements until required inspections of the building elements and connections have been conducted and approved.

PROCEDURAL REQUIREMENTS

1. The SIER/ approved inspections agency shall inspect and test sprayed fire-resistant materials/ mastic and intumescent fire-resistant coatings, including preparation of structural member surfaces, verification of substrate ambient temperatures and ventilation requirements, and testing samples for thickness, density and adhesion per the County approved manufacturer's specifications. All reports, approvals, and rejections, must be submitted to PWC. Each report shall be signed and sealed by the engineer of the inspection agency and shall indicate which UL (or other) design has been followed.
2. All other materials and installations, used in fire rated assemblies, that require special tools, must be inspected and reported on by an independent inspector. A typical example would be the strength, thickness and weight of concrete in a rated assembly.
3. **Construction documents.** Designs for sprayed fire-resistant materials/ mastic and intumescent fire-resistant coatings shall be listed by UL to provide the required fire-resistance rating for structural elements and decks. Structural elements shall be classified as thermally unrestrained in accordance with the UL Fire Resistance Directory unless written certification by the SER is provided to PWCSIS that the assembly meets UL restrained criteria. The fire-resistance designs shall be designated on the County-approved construction documents. Copies of the UL listings shall be provided in the field for use by the SIER.
4. **Fabrication and erection documents.** The sprayed fire-resistant material/ mastic and intumescent fire-resistant coatings manufacturer's installation requirements and details, including specific UL listing information, shall be included on the fabrication and erection documents. Non-standard fire-resistance design features such as adhesives, overcoats, metal lath/netting, etc., shall be specifically detailed and sealed by a fire safety engineer. Clips, standoffs or other devices necessary for attachment to other elements of the building shall be specifically detailed.
5. **Review and approval.** The fabrication and erection documents shall be reviewed and approved by the AR, SER or the appropriate authorized RDP representative. The GC shall submit two sets of AR/SER-approved fabrication and erection documents to PWCSIS for approval. After approval, PWCSIS will return one set of County-approved documents, for retention in project site to facilitate construction and inspection.

INSPECTION AND TESTING

Spray Fire-Resistant Materials

The SIER shall inspect and test sprayed fire-resistant materials to verify compliance with the IBC and the following:

1. Building elements and connections

In addition to other required inspections of the building elements and connections, inspections shall include any non-standard design features or devices as shown on the County-approved fabrication and erection documents for sprayed fire-resistant materials/ mastic and intumescent fire-resistant coatings. Other building elements such as pre-cast concrete spandrel panels, electrical conduits, mechanical ductwork or metal studs shall not be installed that interfere with the application of sprayed fire-resistant materials.

2. Application

Sprayed fire-resistant materials/ mastic and intumescent fire-resistant coatings shall not be applied to building elements until required inspections of the building elements and connections have been conducted and approved. The sprayed fire-resistant materials shall be applied to all surfaces and lengths of members such that the continuity of fire-resistance required by the County-approved fire-resistive designs is achieved.

3. Sampling and testing

Sampling and testing for sprayed fire-resistant materials shall be in accordance with requirements of the IBC. Sampling and testing requirements for mastic and intumescent fire-resistant coatings shall be in accordance with the IBC.

4. Attachment of other elements

Sprayed fire-resistant materials/ mastic and intumescent fire-resistant coatings shall be inspected and approved before attachment of other elements of the building. Sprayed fire-resistant materials shall not be scraped off or removed to attach other building elements. Prior to concealment, sprayed fire-resistant materials shall be inspected and approved after attachment of other elements of the building. Any sprayed fire-resistant material damaged, scraped off, or removed shall be repaired.

Mastic and Intumescent Fire-Resistant Coatings

Special Inspections shall be based on the requirements of the IBC, statement of special inspections schedule, fire-resistance design as designated in the approved construction documents, and approved manufacturer's specifications.

Standpipes

1. The GC shall be responsible for the installation and maintenance of standpipes, during construction, as required by the IBC. Standpipes shall be installed during construction as the work of the building progresses. The standpipe system shall be carried up with each floor and shall be installed and ready for use as each floor progresses. Standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring. Free access from the street to such standpipes shall be maintained at all times. Materials shall not be stored within 5 feet of any fire hydrant or in the roadway between such hydrant and the centerline of the street. Failure to comply with this section will result in the immediate halt of all work on the project until such time as the standpipes are properly placed.

2. The GC shall post the previous concrete placement schedule on the door of the GC's field office. This schedule will be used, in case of fire, by the Prince William County Fire Department and should indicate floor, placement number and date of placement.

INSPECTIONS AND TESTING

For projects involving sprayed fire-resistant material applications, special inspections shall be performed after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspended systems for ceilings, where applicable.

In the event that wall and/or ceiling concealment would be required prior to the special inspections of the SFRM application, a partial Final Report of Special Inspections (refer to partial certification requirements in Chapter 26) shall be required. The Special Inspections of the SFRM shall be part of the Final Report of Special Inspections submitted upon completion of all special inspections elements.

CHAPTER 22 - EXTERIOR INSULATION AND FINISH SYSTEMS

RESPONSIBLE PARTIES

Owner, GC, EIFS Subcontractor, AR, SER, SIER, PWCSIS

WHEN REQUIRED

Special inspections shall be required for all EIFS applications, including water-resistive barrier coating when installed over a sheathing substrate. Special Inspections of EIFS shall comply with the requirements of the IBC.

Exceptions:

1. Special inspections shall not be required for EIFS applications installed over a water-resistive barrier with a means of draining moisture to the exterior.
2. Special inspections shall not be required for EIFS applications installed over masonry or concrete walls.

ACTIVITIES

1. Prior to the start of construction, the following shall be submitted to Building Plan Review Section:

- i. Two (2) sets of construction documents illustrating the design intent incorporating coordinated EIFS report and design specific EIFS construction details.
- ii. Two (2) sets of EIFS specifications.

Plans and specifications shall bear the seal and signature of an RDP, licensed in the Commonwealth of Virginia.

2. Construction document set shall include actual International Code Council (ICC) Evaluation Service Report (or other testing agency report when approved by the Building Official).
 - i. The report shall specify materials of construction, installation, condition of use, and identification requirements.
 - ii. The report shall evaluate weather resistance, structural transverse wind load resistance, noncombustible construction, fire-resistance rated construction, surface burning characteristics/ ignition resistance, and water drainage
3. Installation shall comply with the ICC-ES, Inc. report or the equivalent testing agency report approved by the building official; the manufacturer's published installation instruction and IBC. In the event of a conflict between the manufacturer's published installation instructions and the ICC evaluation services report or testing agency report, the ICC evaluation report or the approved testing agency report shall govern.
4. After review and approval by Building Plan Review Section, one (1) set of plans and specifications shall be retained and one (1) set of plans and specifications shall be forwarded to Permits and Records for issuance of the permit.
5. After permit is issued, work may begin.
6. The EIFS shall be installed only by contractors recognized by the product manufacturer, as being trained to perform installation of the EIFS.

7. The SIER or his/her representative shall verify and document
 - i. Field preparation of materials
 - ii. Expiration dates
 - iii. Installation of components
 - iv. Curing of components
 - v. Installation of joints and sealant
 - vi. Applied dry-film thickness and interface of coating material with flashing
 - vii. Each container or package of material used as part of the EIFS covered by the testing agency report shall be labeled with the manufacturer's name, address, and telephone number; product trade name; shelf life as applicable; product date and batch number; and the evaluation report number.

8. When fabrication of EIFS panels or elements is being performed off-site on the premises of a fabricator's shop, the SIER shall verify that the EIFS plant has a documentation and implementation Quality Control Program and shall notify PWCSIS in writing to be placed in SIS project file. The SIER shall inspect the EIFS plant at appropriate intervals to verify and document that materials, products, methods of fabrication, and quality control practices comply with testing agency report. Prefabricated EIFS panels and elements shall be subject to special inspections during fabrication.

9. Prior to EIFS elements' fabrication, erection, or application, the GC shall submit two sets of EIFS shop drawings to PWCSIS for review, after review and approval by the AR or his/her authorized RDP representative. After PWCSIS approval, one set of county approved shop drawings shall be provided for use on the job site. The other set shall be on file with PWCSIS.

QUALIFICATIONS:

The SIER or inspection and testing agency shall have expertise in the fabrication, erection, application and installation of EIFS.

INSPECTIONS AND TESTING:

EIFS installation shall be performed by trained applicators. All EIFS elements shall be subject to special inspections during erection and application. The SIER shall perform special inspections of EIFS building elements as required by the VUSBC and IBC during erection for conformance with County-approved documents.

The EIFS Contractor shall be certified with the manufacturer or an equivalent agency approved with the County.

CHAPTER 23 - SMOKE CONTROL SYSTEMS

RESPONSIBLE PARTIES

Owner, GC, AR, SER, SIER, Mechanical Engineer of Record, Smoke Control and Fire Protection Inspection and Testing Agency or Agent, PWCSIS

WHEN REQUIRED

Whenever smoke control systems are to be installed.

ACTIVITIES

1. Prior to the start of construction, two (2) sets of smoke control system plans and specifications shall be submitted to PWCBPRS and PWC Fire Marshal's Office. Plans and specifications shall bear the seal and signature of an RDP, licensed in the Commonwealth of Virginia.
2. The owner, AR/SER, or Mechanical Engineer of Record, shall specify which of the Smoke Control and Fire Protection Inspection and Testing Agencies or agents, approved by the Fire Marshal's Office is/are to be used for the inspection and testing of the equipment. All costs, associated with third party testing and inspections, shall be borne by the owner.
3. After review and approval by Mechanical Plans Review and the Fire Marshal's Office, one set of plans and specifications shall be retained by PWC BDD and one set of plans and specifications shall be forwarded to Permits and Records for issuance of the permit,
4. After permit is issued, work may begin.
5. Leakage testing and documentation of all fire protection device locations shall be performed during the erection of ductwork and supporting fire protection elements prior to concealment.
6. After sufficient completion and prior to occupancy, the following shall be performed, verified, and documented to evaluate whether design intent has been achieved: pressure-differences-across-smoke-barriers tests, air flow volume tests, and detection and control mechanism operation tests.
7. Special inspections and documentation for smoke control systems shall include:
 - Smoke barrier construction
 - Pressurization method per VUSBC: **“When approved by the Building Official”**, the means of controlling smoke shall be permitted by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke-control zone of fire origin”.
 - Airflow design method
 - Exhaust method
 - Design fire Equipment
 - i. Exhaust fans
 - ii. Ducts
 - iii. Equipment, inlets and outlets
 - iv. Automatic dampers
 - v. Fans
 - vi. Power systems
 - vii. Detection and control systems
 - viii. Control air tubing

8. A complete report of testing (including failed tests and subsequent re-tests and solutions) shall be prepared by the SIER for the smoke control or special inspection agency. The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or mark. The report shall be reviewed by the responsible registered design professional and when satisfied that the design intent has been achieved, the responsible registered design professional shall original seal, sign, and date three (3) copies of the report.
9. Prior to occupancy or use of the building, the responsible RDP shall then provide one original report to the each of the following:
 - i. PWC BDD to the attention of the Chief Mechanical Inspector;
 - ii. Fire Marshal's Office to the attention of the Fire Protection Engineer/Inspector.
 - iii. The third report shall be maintained in an approved location (such as the fire command center) at the building.

Charts, drawings, and other documentation identifying and locating each component of the smoke control system, and describing its proper function and maintenance requirements, shall be maintained on file at the building as an attachment to the report. Devices shall have an approved identifying tag or mark on them consistent with the other required documentation and shall be dated indicating the last time they were successfully tested and by whom.
10. PWC BDD Mechanical Inspections section and Fire Marshal's Office shall perform quality control monitoring of equipment construction inspections and testing.
11. Upon receipt and approval of the reports, PWC BDD will issue a certification card which shall be posted on the equipment.

QUALIFICATIONS:

Special inspection agencies or agents for smoke control shall have expertise in fire protection engineering, mechanical engineering, and certification as air balancers.

INSPECTIONS AND TESTING:

Inspections and testing shall be performed in accordance with ASHRAE Guideline, as referenced by the IBC, as adopted by the Virginia Uniform Statewide Building Code. The design submission accompanying the construction documents shall clearly detail procedures and methods to be used and the items subject to such inspections and tests. Each smoke control system shall require a unique commissioning plan which shall be in accordance with generally accepted engineering practice based on published standards for the particular testing involved.

Inspections: Special inspections for smoke control systems shall assess, document and verify the following systems/elements:

- Automatic dampers
- Control air tubing/DDC wiring
- Control diagrams and sequences
- Fan belts
- Exhaust fan components
- Power: normal and standby

Tests: Tests shall document and verify the adequate performance of:

- Control elements and sequences
- Control air tubing/ DDC wiring
- Control devices
- Dampers
- Detection devices and their tolerances

- Doors
- Ducts and shafts
- Fans
- Inlets and outlets, including sizes and positions
- Pressurized stair enclosures
- Smoke zone or area boundary elements/ barriers
- Response times
- Leakage of boundary or barrier elements, including doors and partitions.
- Power: normal and standby

Tests, including failed tests and re-tests and corrective actions, shall be recorded and form part of the [Final Report of Special Inspections](#). The Final Report shall verify compliance with all portions of IBC on accepting testing, system acceptance, and smokeproof enclosures, as applicable. The Final Report shall be submitted to PWCSIS after all deficiencies, observed during the final testing of the system, have been resolved satisfactorily.

CHAPTER 24 - WOOD CONSTRUCTION

RESPONSIBLE PARTIES

Owner, SIER, Subcontractor, SER and PWCSIS

WHEN REQUIRED

The requirements of this chapter and IBC shall apply when construction includes wood structural elements as listed in [Chapter 3](#) of this Manual.

1. Special inspections shall be required of the fabrication process of wood structural elements and assemblies in accordance with the requirements of the IBC..
2. Wood prefabricated structural elements shall be subject to special inspections during erection.
3. Metal-plate connected wood trusses spanning 60 ft and greater.

PROCEDURAL REQUIREMENTS

1. An RDP with experience in the design of prefabricated wood elements and assemblies shall prepare, seal and sign fabrication and erection documents for prefabricated wood elements. The fabrication and erection documents shall include, but are not limited to: design drawings and calculations, connection details, supports, rigging requirements and lifting procedures, and erection bracing and details. Permanent bracing systems for lateral stability shall be detailed and included in the fabrication and erection documents. Details for welded or bolted connections shall clearly indicate the seismic-resisting elements of buildings of Seismic Design Category C, D, E, or F. Details for bolted connections shall clearly indicate the amount of tensioning required and the ASTM specifications for the nuts, bolts and washers.
2. The wood prefabricated elements' fabrication and erection documents shall be submitted to the AR, SER and PWCSIS for review and approval prior to wood prefabricated elements' fabrication and/or erection, as appropriate. After County review and approval, the GC shall ensure that County-approved fabrication and erection documents are available for use on the job site. County-approved documents shall be used by the SIER to conduct special inspections during construction.
3. The GC shall submit two (2) sets of AR/SER approved fabrication and erection documents of structural glue-laminated members and sandwich panels to PWCSIS for approval. After County review and approval, PWCSIS will return one set of the County approved fabrication and erection documents for use on the job site.
4. The GC shall submit two (2) sets of AR/SER approved fabrication and erection documents of prefabricated trusses to PWC Building Plan Review Section for approval. After County review and approval, Building Plan Review Section will retain one set of the County approved fabrication and erection documents and return the others for use on the job site.
5. County approval is not required for prefabricated wood I-joists. SER approved fabrication and erection documents shall be available for use on the job site.

INSPECTION OF WOOD FABRICATORS

1. The SIER shall provide special inspection of the wood fabricator and fabrication procedures, and of the fabricated items as required by the IBC. Glue-laminated members and sandwich panels shall bear the mark of an approved agency.

2. The fabricator may demonstrate to the SIER that the requirements of IBC have been met by furnishing evidence of compliance with the Wood Truss Council of America's Quality Control Program, or its equivalent.
3. The SIER shall verify in writing to PWCSIS that the fabricator is properly implementing the fabrication and quality control procedures outlined above. Verification may be on a job basis or by inspection within the previous twelve months.

INSPECTION OF WOOD ELEMENTS

The SIER shall perform special inspections of wood structural elements during erection as specified in the approved [Statement of Special Inspections](#) and the County-approved construction documents.

CHAPTER 25 - RETAINING WALLS

RESPONSIBLE PARTIES

GC, Wall Subcontractor, SIER, SER/GER, PWCSIS

WHEN REQUIRED

Retaining walls with unbalanced fill height greater than eight (8) feet or walls higher than four (4) feet carrying surcharge shall require special inspections. These walls can be part of either commercial or residential projects.

The permit applicant shall submit a [Statement of Special Inspections for Retaining Walls](#), for walls which require special inspections, at the time of plans submission.

PROCEDURAL REQUIREMENT

1. When the permit applicant is notified that his/her plans have been approved by Building Plan Review Section a preconstruction meeting shall be held for walls which require special inspections prior to the issuance of the Building Permit. A preconstruction meeting is not required for walls which are 8ft or less in height but greater than 4ft. Refer to [Policy: Third Party Inspection Certification Program for Minor Critical Projects](#) for prerequisites for issuance of the Building Permit.
2. The Owner or his or her authorized representative will identify the participants and after consulting with PWCSIS schedule the meeting by calling PWCSIS at (703) 792-6112. A contact sheet with names, addresses, and telephone numbers of those in attendance will be filled out at the meeting. Refer to [Instructions for Arranging a Preconstruction Meeting for Special Inspections](#).
3. The meeting will normally be held at 5 County Complex Court in one of the conference rooms that will be identified at the time of scheduling the meeting. When convenient and/or appropriate, the meeting can also be held at the site.
4. The latest Special Inspections Manual, to be used on the project, will form the basis for the Preconstruction Meeting and will be used to review, answer and clarify elements of the program.
5. Prior to the start of construction, one set of County approved plans shall be available at the construction site and the permit shall be posted.
6. The SIER shall verify compliance with the approved construction documents, and shall immediately notify the PWCSIS and the SER (i.e., designer of the wall) of any field modifications or deviations.

INSPECTION REQUIREMENT

At the minimum, the SIER shall observe, test and/or verify the items listed below:

1. The SIER shall verify that the design/construction plans have been approved by Prince William County and that the building permit(s) of the wall(s) have been issued.
2. When required, drilled piers, stone columns or any other deep foundation system specified in the approved construction drawings shall be installed at the appropriate stage/time and in accordance with the County approved construction documents.
3. The bearing capacity of the **footings or leveling pad** shall be verified per approved documents. The reinforcing bars and concrete of footings, and the placement and compaction of leveling pad shall also be verified.

4. The quality of the materials proposed and used for the **backfill** and/or reinforced zones shall meet the minimum requirements specified in the approved construction documents, or be determined to be acceptable by the SER (or designer) of the wall system. The SIER shall verify the placement and compaction of the materials, as well as the general slope of the backfill.
5. The SIER shall verify that below-grade **drainage** system is constructed in accordance with the approved documents. This includes, but not limited to the verification of gravel or crushed stone, drain tiles, filter fabric, weep holes and drain tile daylights, as well as the surface drainage immediately around the wall.
6. For segmental walls, the SIER shall verify the suitability of the **geogrids** (for type, length, elevation, strength orientation and adequate tautness), **block type** and field **connections** between block to block and block to geogrids. For **concrete or masonry** block walls, the reinforcing shall be verified for quality and fabrication, and the concrete, mortar and/or grout shall be sampled and tested for compliance with the documents.
7. The geometry of the built wall shall be in compliance with the approved drawings, including the back batter of the wall.
8. Guardrails shall be installed per the County approved documents and in accordance with the [Building Development Division Policy: Retaining Wall Safety Devices](#).
9. The SIER or the VA licensed land surveyor retained by the owner shall verify that the layout of the retaining wall is in conformance with the County approved site plans or revised site plans. A separate Layout and Wall Geometry certification prepared by the VA licensed land surveyor must be submitted along with the Final Report of Special Inspections prepared by the SIER and approved by the SER to PWC Special Inspections for approval, prior to final inspections by the County.

CHAPTER 26 - FINAL REPORT OF SPECIAL INSPECTIONS & OCCUPANCY PROCESS

RESPONSIBILITY

It is the responsibility of the Owner or the Owner's agent to submit the [Final Report of Special Inspections](#), obtain the necessary building and trades inspections, file and obtain a Certificate of Use and Occupancy from the Building Development Division, prior to occupancy or use of any constructed buildings/structures or tenant spaces.

WHEN REQUIRED

Before use or occupancy

PROCEDURAL REQUIREMENTS

1. Inspections:

The following are required prior to issue of Certificate of Use and Occupancy:

A. Final Report of Special Inspections

One (1) original set of the Final Report of Special Inspections bearing the original signatures and seals of the SIER and the appropriate RDPR, shall be submitted to PWCSIS after completion of inspections of all items specified in the County approved special inspections schedule. The Final Report of Special Inspections must be supported by:

- The completed Special Inspections Schedule, indicating the start date and completion date of inspection(s).
- [Deficiency List](#), with all deficiencies resolved. A project in which no deficiencies were carried to the next day shall have a blank Deficiency List submitted.
- Any inspections and testing reports that have previously not been submitted to PWCSIS.

The SIS staff, responsible for the project, will perform review of the report and perform walk-through quality assurance inspections of the project before accepting the report. The Contractor will be allowed to schedule for building inspections, namely, wall and/or ceiling concealment and final inspections only after the Final Report of Special Inspection is approved.

Partial certification

On occasions where portion(s) of the building requires building concealment prior to completion of all special inspection items, partial certification is allowed. The requirements of the partial certification are the same as the requirements for the Final Report of Special Inspections explained above. However, the certification must be identified as partial on the Final Report of Special Inspections form. A letter, supported by a layout of the building, describing the portion of the building that requires partial concealment must be submitted. A Deficiency List shall also be submitted although deficiencies in areas other than the portion of the building to be concealed may not necessarily be resolved at the time of submitting the partial certification.

It is possible to have more than one (1) partial certification. However a [Final Report of Special Inspections](#) must be submitted upon completion of all special inspections items for projects for which partial certifications have been submitted.

Projects that may require submission of partial report include, but not limited to, the following:

- Special Inspections with EIFS construction as an item,

- Buildings with Sprayed fire-resistant material or Mastic and intumescent fire-resistant coatings application
- Multi-story buildings or buildings which require construction in phases.

Final Report of Special Inspections for Pre-Engineered Metal Buildings (PEMB)

For PEMB projects, two (2) separate signed and sealed [Final Report of Special Inspections](#) shall be submitted to PWCSIS for review and approval;

- One (1) final report signed and sealed by the SER for Footing and Foundation and the
- Other by the SER for the PEMB.

However, if the SER for the Footing and Foundation assumed the role as the SER for the entire building (both Footing and Foundation and PEMB), only one (1) [Final Report of Special Inspections](#), bearing the seal and signature of the Footing and Foundation SER, shall be submitted to PWCSIS.

Final Report of Special Inspections for Projects Involving Smoke Control Systems

In addition to the [Final Report of Special Inspections](#) submitted to PWCSIS for other specified building items, a separate [Final Report of Special Inspections](#), bearing the seals and signatures of the SIER and MER for the smoke control system shall be submitted for projects involving smoke control system to PWCSIS for review and approval.

Final Report of Special Inspections for Projects Involving Sprayed Fire-Resistant Material

For projects involving sprayed fire-resistant material applications, special inspections shall be performed after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspended systems for ceilings, where applicable. In the event that wall and/or ceiling concealment would be required prior to the special inspections of the SFRM application, a partial Final Report of Special Inspections (refer to partial certification section above) shall be required. The Special Inspections of the SFRM shall be part of the Final Report of Special Inspections submitted upon completion of all special inspections elements.

- B. Approval from Fire Marshall's Office
- C. Final approval from all four trade sections (Building, Mechanical, Electrical, Plumbing and Gas).
- D. Any tenant space that is to be used for the purpose of food service is required to be approved by the PW Health District.
- E. Approval from the Engineering Inspections Branch on site work.
- F. Approval from the Prince William County Service Authority, if applicable.

2. Partial Occupancy and Tenant Improvements:

The following procedures shall be implemented for protecting buildings during partial occupancy and tenant improvements. In all types of construction, with or without a fire suppression system, the following will be done:

- A. All combustible storage on any floor shall be located and conform to the following conditions:
 - i. The sprinkler system, if applicable, shall be designed for the hazard involved, usually Ordinary Hazard Group II as a minimum.

- ii. Sprinkler heads shall be located within 12 inches of the floor/ceiling above, using upright type of sprinkler heads.
 - iii. If the building design calls for a suspended ceiling, the entire ceiling system shall be in place in the area where combustible storage is located. Pendant type sprinklers are required.
 - iv. If the combustible storage is limited to a partial floor area, the storage area shall be separated from the remainder of this floor by a full height floor/ceiling non-combustible partition or the entire floor shall be sprinkled in accordance with 1, 2, or 3.
- B. All sprinklers shall be activated throughout the entire structure for first tenant occupancy. Under no condition shall the sprinkler system be shut off in any area which is occupied. Sprinkler work required in any occupied area shall be conducted after normal business hours.
- i. Sprinklers can be at ceiling location.
 - ii. Grid may be placed.
 - iii. Ceiling finish need not be completed in areas not occupied.
- C. The entire core including exitways, stairways, and elevator doors must be completed throughout the structure. Any work required in any part of the exitway system, after the first tenant move in, shall be conducted after normal business hours or the building will be ordered evacuated.
- D. Fire alarm systems must be complete and approved for the entire core and the occupied areas. When the fire alarm system must be taken out of service, during normal business hours, a fire watch shall be instituted during this time period.

The above procedures are formulated to accommodate the majority of cases. It is conceivable that individual cases may require individual treatment.

APPENDIX I - ATTACHMENTS (HYPERLINKS)

Appendix I - Attachment A - **Instructions for Arranging a Pre-construction Meeting.**

<http://www.pwcgov.org/government/dept/development/bd/Documents/005539.pdf>

Appendix I - Attachment B - **Requirements for Post Concealment Inspections.**

<http://www.pwcgov.org/government/dept/development/bd/Documents/008372.pdf>

Appendix I - Attachment C - **Requirements for Mandatory Third Party Inspections managed by SIB.**

www.pwcgov.org/DocLibrary/PDF/008371.pdf

Appendix I - Attachment D - **Attendees of Preconstruction Meeting.**

www.pwcgov.org/eBuildingDevelopmentForms/forms/AttendeesOfPreconstructionMeeting.pdf

Appendix I - Attachment EB - **Statement of Special Inspections - Buildings**

www.pwcgov.org/eBuildingDevelopmentForms/forms/StatementOfSpecialInspections.pdf

Appendix I - Attachment ER - **Statement of Special Inspections - Retaining Walls.**

www.pwcgov.org/eBuildingDevelopmentForms/forms/StatementOfSpecialInspections.pdf

Appendix I - Attachment F - **Final Report of Special Inspections.**

www.pwcgov.org/eBuildingDevelopmentForms/forms/FinalReportOfSpecialInspections.pdf

Appendix I - Attachment G - **Deficiency List.**

www.pwcgov.org/eBuildingDevelopmentForms/forms/DeficiencyList.pdf

Appendix I - Attachment H - **Building Pad Certification.**

www.pwcgov.org/eBuildingDevelopmentForms/forms/BuildingPadCertification.pdf

Appendix I - Attachment J - **Approved Third Party Engineers.**

<https://www.pwcva.gov/assets/2021-04/003532.pdf>

Appendix I - Attachment K - Building Development Division **Policy: Third Party Certification Program for Minor Critical Projects.**

<http://www.pwcgov.org/government/dept/development/bd/Documents/008370.pdf>

Appendix I - Attachment L - Building Development Division **Policy: Inspections – Field Revisions.**

<http://www.pwcgov.org/government/dept/development/bd/Documents/005768.pdf>

Appendix I - Attachment M - Design and Construction Standards Manual.

<https://www.pwcva.gov/department/land-development-division/design-construction-standards-manual>

Appendix I - Attachment N - Building Development Division **Policy: Retaining Wall Safety Devices.**

<http://www.pwcgov.org/government/dept/development/bd/Documents/005772.pdf>

Appendix I - Attachment O - Building Development Division **Policy: Special Inspections – Field Revisions.**

<http://www.pwcgov.org/government/dept/development/bd/Documents/10631.pdf>

The above forms are available at <https://eservice.pwcgov.org/eBuildingDevelopmentForms/> & www.pwcva.gov/BDD. If you would like a hard copy of any of these forms mailed to you, please contact the Building Development Division on 703-792-6930.

APPENDIX II - ATTACHMENTS (HYPERLINKS)

The following sample forms are available in [copy-and-paste PDF format](#). Reference the [Special Inspections Program webpage](#) for more information.

Appendix II - Attachment A - **Footing & Foundation SER Letter assuming responsibility of Pre-Engineered Metal Building SER**

Appendix II - Attachment B - **SIER Letter Accepting the County approved Geotechnical Report**

Appendix II - Attachment C - **RDPR List of Shop Drawings and Other Structural Submittals**

Appendix II - Attachment D - **Owner's Request Letter for Waiver of Preconstruction Meeting**

Appendix II - Attachment E - **SIER Letter of Engagement to Perform Third Party Inspections**

Appendix II - Attachment F - **RDPR Letter of Authorization**

Appendix II - Attachment G - **Change of SIER Letter from Owner**

Appendix II - Attachment H - **Letter Assuming the Role as the New SIER**

Appendix II - Attachment I - **RDPR Shop Drawing Review/Approval Stamp Format**

The above sample forms are available at www.pwcva.gov/BDD. If you would like a hard copy of any of these forms mailed to you, please contact the Building Development Division on 703-792-6930.

Appendix III – Referenced Standards

AAALA

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

5301 Buckeystown Pike

Suite 350

Frederick, MD 21704

Phone: 301-644-3248

Fax: 301-662-2974

<http://www.a2la.org/>

ACI

AMERICAN CONCRETE INSTITUTE

38800 Country Club Drive

Farmington Hills, MI 48331, USA

Phone: 248-848-3800

Fax: 248-848-3825

<http://www.aci-int.org/general/home.asp>

AISC

AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC

One East Wacker Drive Suite 700

Chicago, IL 60601-1802

Phone: 312-670-2400

Fax: 312-670-5403

<http://www.aisc.org/>

ASNT

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING

PO Box 28518

1711 Arlingate Lane

Columbus, OH 43228-0518

Phone: 800-222-2768 or 614-274-6003

Fax: 614-274-6899

<http://www.asnt.org/>

ASTM

AMERICAN SOCIETY FOR TESTING AND MATERIALS

100 Barr Harbor Drive,

West Conshohocken, PA, 19428-2959

Phone: 610-832-9500

Fax: 610-832-9555

<http://www.astm.org>

AWS
AMERICAN WELDING SOCIETY
550 N.W. LeJeune Road,
Miami, FL 33126
Phone: 800-443-9353 or 305-443-9353
Fax: 305-443-7559
<http://www.aws.org/>

BIA
BRICK INSTITUTE OF AMERICA
Brick Industry Association (formerly Brick Institute of America)
1850 Centennial Park Drive, Suite 301
Reston, VA 20191
Phone: 703-620-0010
Fax: 703-620-3928
<http://www.brickinfo.org>

CCRL
CEMENT AND CONCRETE REFERENCE LABORATORY
100 Bureau Drive, Stop 8618
Gaithersburg, MD 20899-8618
Phone: 301-975-6704
Fax: 301-975-2243
<http://www.ccrl.us/>

NAVLAP
NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM
National Institute of Standards and Technology
(formerly National Bureau of Standards)
Gaithersburg, MD 20899-2140
Phone: 301-975-4016
Fax: 301-926-2884
http://ts.nist.gov/Standards/214_contact.cfm

NCMA
NATIONAL CONCRETE MASONRY ASSOCIATION
13750 Sunrise Valley Drive
Herndon, VA 20171-4662
Phone: 703.713.1900
Fax: 703.713.1910
<http://www.ncma.org/>

NEC (NFPA 70)
NATIONAL ELECTRIC CODE
PO Box 4558
Englewood, CO 80155-4558
Telephone: 800-922-2820
Fax: 800-338-8441
www.nittinc.com

NICET
NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES
1420 King Street
Alexandria, VA 22314-2794
Phone: 888-476-4238 or 703-548-1518
Fax: 703-682-2756
<http://www.nicet.org/>

NIST
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
(formerly National Bureau of Standards)
100 Bureau Drive, Stop 1070,
Gaithersburg, MD 20899-1070
Phone: 301-975-6478
Fax: 301-926-1630
<http://www.nist.gov/>

NPCA
NATIONAL PRECAST CONCRETE ASSOCIATION
10333 N. Meridian St. Suite 272
Indianapolis, IN 46290
Phone: 800-366-7731 or 317-571-9500
Fax: 317-571-0041
<http://www.precast.org/>

PCI
PRECAST/PRESTRESSED CONCRETE INSTITUTE
209 W. JACKSON BLVD. #500
Chicago, IL 60606
Phone: 312-786-0300
Fax: 312-786-0353
<http://www.pci.org/intro.cfm>

PCA
PORTLAND CEMENT ASSOCIATION
5420 Old Orchard Rd
Skokie, IL 60077
Phone: 847-966-6200
Fax: 847-966-8389
info@cement.org

SDI
STEEL DECK INSTITUTE
P.O. Box 25
Fox River Grove, IL 60021
Phone: 847-458-4647
Fax: 847-458-4648
www.sdi.org

SJI
STEEL JOIST INSTITUTE
3127 Mr. Joe White Avenue
Myrtle Beach, SC 29577-6760
Phone: 843-626-1995
Fax: 843-626-5565
www.steeljoist.org/

VOSHA
VIRGINIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
Department of Labor and Industry
13 South Thirteenth Street
Richmond, VA 23219-4101
Phone: 804-371-2327
Fax: 804-786-0139
<http://www.dli.state.va.us/>

WACEL
WASHINGTON AREA COUNCIL OF ENGINEERING LABORATORIES
7900 Wisconsin Avenue, Suite 305
Bethesda, MD 20814;
Phone 301-652-7925;
Fax 301-907-9326
<http://www.wacel.org/>

END OF DOCUMENT

[Back to Table of Contents](#)