



ARLINGTON COUNTY, VIRGINIA

**DEPARTMENT OF COMMUNITY PLANNING, HOUSING &
DEVELOPMENT**

INSPECTION SERVICES DIVISION

2100 Clarendon Boulevard, 10th Floor, Arlington, VA 22201

PRE-CONSTRUCTION MANUAL

BASED ON 2015 VCC

2019

May 1, 2019

Arlington County Pre-Construction Manual

TABLE OF CONTENTS

SECTION I- SPECIAL INSPECTION PROGRAM	
CHAPTER 1 ADMINISTRATION	
- <i>STRUCTURES AND BUILDING ELEMENTS SUBJECT TO SPECIAL INSPECTIONS</i>	<i>1</i>
- <i>PERMIT REQUIREMENTS</i>	<i>2</i>
- <i>STATEMENT OF SPECIAL INSPECTION</i>	<i>2</i>
- <i>FEES AND COSTS</i>	<i>2</i>
- <i>PRIMARY RESPONSIBILITIES</i>	<i>2</i>
- <i>PRECONSTRUCTION MEETING</i>	<i>10</i>
- <i>REPORTS AND COMMUNICATION FLOW</i>	<i>11</i>
- <i>DEFICIENCY REPORTS</i>	<i>11</i>
- <i>FINAL REPORT OF SPECIAL INSPECTIONS</i>	<i>11</i>
- <i>PERSONNEL QUALIFICATION</i>	<i>11</i>
- <i>CHANGE IN SPECIAL INSPECTION TEAM</i>	<i>12</i>
- <i>OBLIGATION OF PARTIES TO THE CONSTRUCTION</i>	<i>12</i>
- <i>MODIFICATION TO APPROVED DRAWINGS</i>	<i>12</i>
- <i>DETECTION OF CRITICAL PROBLEMS</i>	<i>13</i>
- <i>STATEMENT OF SPECIAL INSPECTIONS (SSI)</i>	<i>13</i>
- <i>FINAL REPORT OF SPECIAL INSPECTION AND CERTIFICATE OF COMPLETION</i>	<i>14-18</i>
CHAPTER 2 DEFINITIONS	19
CHAPTER 3 ADDITIONAL REQUIREMENTS	21
- <i>PRECAST CONCRETE</i>	<i>21</i>
- <i>EARTH RETENTION SYSTEM</i>	<i>23</i>
SECTION II- CONSTRUCTION- RELATED REQUIREMENTS	

Arlington County Pre-Construction Manual

<i>BUILDING ADDRESSING</i>	25
<i>ON-SITE CONCRETE BATCH PLANTS</i>	26
<i>TOWER CRANE</i>	26
<i>TEMPORARY STANDPIPE EXTENSION</i>	29
<i>MATERIAL HOISTS USED FOR CONSTRUCTION</i>	30
<i>PERSONNEL HOIST REQUIREMENT</i>	31
<i>TEMPORARY USE OF ELEVATOR FOR CONSTRUCTION PURPOSES IN SINGLE AND MULTI HOISTWAYS</i>	32
<i>CERTIFICATE OF OCCUPANCY</i>	33
<i>REQUIRED INSPECTIONS</i>	35
<i>CONSTRUCTION SITE TRASH AND DEBRIS REMOVAL</i>	40
<i>MUD AND DUST ON STREETS AND STREET/LANE CLOSINGS</i>	40
<i>USE OF PUBLIC RIGHT-OF-WAY</i>	41
<i>PROTECTION OF PEDESTRAINS</i>	41
<i>APPENDIX A STATEMENT OF SPECIAL INSPECTION</i>	41
<i>APPENDIX B STATEMENT OF SPECIAL INSPECTION FOR SHEETING AND SHORING</i>	54
<i>APPENDIX C APPROVED STAMP REQ / WEATHER TEMP LOG / STRIPPING LETTER</i>	60
<i>APPENDIX C SAMPLE OF THE PRE-CONSTRUCTION MEETING MINUTES</i>	74

SECTION I

SPECIAL INSPECTIONS PROGRAM

CHAPTER 1 ADMINISTRATION

1.1 INTRODUCTION

The purpose of this document is to define the Arlington County's Special Inspection Program (SIP) procedures as required by, and in accordance with the 2015 Virginia Uniform Statewide Building Code (VUSBC) and the 2012 International Building Code (IBC):

1.2 STRUCTURES AND BUILDING ELEMENTS SUBJECT TO SPECIAL INSPECTIONS

The SIP shall apply to newly constructed building element and modifications to existing building element and/or foundation element and/or element fabrication procedures that are subject to special inspections required by the 2015 IBC and the 2015 VUBC. Special inspections are required for:

- Steel construction in according with VCC 1705.2
- Concrete construction in according with VCC 1705.3
- Masonry construction in according with VCC 1705.4
- Wood construction in according with VCC 1705.5
- Soil and foundation construction in according with VCC 1705.6
- Driven deep foundation in according with VCC 1705.7
- Cast in place deep foundation in according to VCC 1705.8
- Helical pile foundation in according to VCC 1705.9
- Fabricated Items in according with VCC 1705.10
- Special inspection for wind- resistance in according to VCC 1704.11
- Special inspection for seismic resistance in according to VCC 1704.12
- Testing and qualification for seismic resistance in according to VCC 1704.13
- Spray fire-resistant material in according with VCC 1704.14
- Mastic and intumescent fire-resistant coating in according with VCC 1704.15
- Exterior Insulation and Finish System (EIFS) in according with VCC 1704.16
- Fire-resistant penetration and joins in according with VCC 1704.17
- Smoke Control System in according with VCC 1704.18
- Special inspection shall also be required for the proposed work that is, in the opinion of the building official, unusual in its nature, such as, but not limited to, the following examples:
 1. Unusual design applications of material described in this code.
 2. Construction material and system that are alternative to materials and system prescribe by this code.
 3. Materials and system required to be installed in according with additional manufacturer's instructions that prescribe requirement not contained in this code or in standards referenced by this code.
 4. Sheeting and shoring, underpinning, curtain walls, facade, etc.

EXCEPTION:

1. Special inspections are not required for work of minor nature or as warranted by conditions in the jurisdiction as approved by the building official.
2. Special inspection and tests are not required for one story buildings under 20 feet in height which do not exceed 5000 square feet in building area. And alteration to Group U structures which do not increase loads in according with section 603.7.3 and 603.7.4 of the VEBC

3. Unless otherwise required by the building official, special inspections are not required for occupancies in groups R-3, R-4 or R-5 and occupancies in group U that are accessory to a residential occupancy including, but not limited to, those listed in section 312.1 VCC.

4. Special inspection is not required for portion of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of section 2211.7.

1.3 PERMIT REQUIREMENTS

A valid building permit must be obtained prior to start of the work.

1.4 STATEMENT OF SPECIAL INSPECTION

Owners of buildings and structures whose elements are subject to special inspections must submit, prior to or during preconstruction meeting, a Statement of Special Inspections (SSI). The SSI shall identify the name(s) of the Special Inspection Engineer of record (SIER) and the Inspection and Testing Agency retained by the owner to provide special inspection and testing services. This statement shall include a complete list of materials and work requiring special inspections and the inspections to be performed.

1.5 FEES AND COSTS

Fees and costs associated with the performance of special inspections shall be borne by the owner. Contractors are not permitted to hire engineers, architects and laboratories associated with Special Inspection.

1.6 PRIMARY RESPONSIBILITIES

The following are general responsibilities of the principal parties to the construction project that are affected by Special Inspections. This list is not intended to be all-inclusive. Additional responsibilities may be assigned to the parties identified below, and others, by the owner or the County.

1.6.1 Owner (Owners' Representatives)

- Shall submit permit applications that include a complete statement of special inspections.
- Shall retain all professionals involved in the process of Special Inspection.
- Shall submit time schedules.
- Shall schedule and conduct pre-construction meeting.
- Shall notify the County when project begins.
- Shall oversee the design and construction and permitting for the project to ensure that the project is in compliance with approved construction documents.
- Shall notify the County if there is a change in the design team and reasons for the change.
- Shall assure prompt distribution of inspection activity reports.
- Shall submit all structural revisions to the Structural Engineer of Record (SER) for review and approval, prior to commencement of the work. A copy of the SER-approved revisions must also be submitted to the SIER & County (when required) prior to commencement of the work.

1.6.2 Special Inspection Engineer of Record (SIER)

- Shall be retained by the Owner.

Arlington County Pre-Construction Manual

- Shall provide construction observation and testing services of required scope and frequency to offer a professional opinion that the constructed project was built in accordance with the County-approved construction documents, and that construction has been tested and inspected in accordance with the SSI and applicable codes and standards.
- Shall work with the owner and in concert with other members of the design team to develop the Statement of special inspections.
- Shall verify that all fabricators of structural elements comply with applicable quality assurance programs.

The SIER shall provide special inspections as indicated below:

A. Earth Retention System

Earth retention system shall be designed by a structural engineer licensed in the Commonwealth of Virginia. Designs shall be submitted to the SER for review and comment. The SER shall review and develop a comprehensive inspection list based on the specific needs of the project design. The inspection procedure shall be submitted to the County prior to commencement of construction.

I. Pile/Soldier Beam Installation

- Inspect all types of sheeting and shoring installation
- Inspect the drilling and backfilling
- Inspect the pile size and location as well as plumbness

II. Lagging

- Inspect lagging for size, location, and condition

III. Tieback Installation

- Inspect tieback installation to verify size, anchor length, number of strands, elevation, and angle of declination
- Inspect grouting of tiebacks and take samples as needed
- Inspect the tie back free, bond, and tail length

IV. Rock Bolts

- Inspect location, size, and bonded length

V. Tieback Testing

- Ensure that all hydraulic jacks are used to perform anchor tensioning have current calibration and that the gauge is calibrated to appropriate increments.
- Continuously inspect the contractor's proof test and performance test for tieback
- Continuously verify that the lock off loads are consistent with approved plans and specifications
- Review all contractors' data with regards to installation and testing of the tie back anchors.

VI. Bracing Members

- Inspect material, size, location, angle of declination and welds

VII Support of Excavation (SOE) Monitoring.

- Provide periodic monitoring of the adjacent structure, SOE, inclinometers and settlement point at the site.
- Verify that all monitoring data is below the threshold value established for the project.
- Frequency of monitoring shall be at least twice a week.

VIII Crack monitoring

- The perimeter of the job should be walked to look for out of the ordinary condition such as cracks in the street or sidewalks, settlement of soil along adjacent building, non-level lagging board, that may indicate undue stress in the system.
- A survey for the adjacent building shall be conducted to document any existing crack on the building element, also crack monitoring shall be installed to any significant cracks, reading shall be recorded at least every bi weekly.

B. Underpinning

All underpinning shall be designed by a structural engineer licensed in the Commonwealth of Virginia. Designs shall be submitted to the SER for review and approval. The SER shall review and develop a comprehensive inspection list based on the specific needs of the project design. Any building within a 3H:1V zone of influence from the edge of excavation and dewatering system should be monitored for settlement and lateral deflection during construction. The inspection procedure shall be submitted to the County prior to the commencement of construction.

Note:

Appendix B contain a copy of the sheeting and shoring statement of special inspection

C. Soils and Foundation System Inspection and Testing Services

1. Soils

- a. inspect proof-rolling and delineate unsuitable materials within areas proposed for support or structural fill, ground slabs and pavement areas.
- b. Conduct laboratory tests on samples of proposed fill materials.
- c. Inspect placement of engineered fill and backfill materials.
- d. Conduct field density tests on placed compacted fill.
- e. State that fill placement was performed in accordance with approved construction documents.
- f. At least one soil technician shall be present full-time during compaction of structural fill material.

2. Foundations – Footings and mat foundation

Arlington County Pre-Construction Manual

- a. Conduct foundation excavation inspection & testing to determine adequate bearing.
- b. Conduct inspection and testing to determine adequate reinforcement.
- c. State that in his/her professional opinion the footings are bearing on sub grades capable of supporting the design loads.
- d. Conduct inspection of basement and retaining walls for conformance to the County approved construction documents.

3. Pile Foundations

- a. Inspect test pile driving and record data. The data is to include type and size of hammer, the rate of penetration, and the type and dimensions of casings.
- b. Inspect load tests on test piles and record data to determine if tests were performed in accordance with project specifications.
- c. Analyze load test data and provide driving criteria, including revised estimated pile tip elevations at test boring locations.
- d. Inspect pile driving and keep a record of each pile driven containing specifications of pile hammer used, pile dimensions, tip and cut-off elevation of piles, blow count for pile as specified, plumbness of pile, and as-built location obtained from contractor's survey, and other pertinent information pertaining to the pile and its driving.
- e. Ascertain that piles do not exceed driving tolerances as to location, plumbness, and batter angle.
- f. State that in his/her professional opinion all piles were driven and developed bearing capacity in accordance with specifications.

4. Caissons

- a. Inspect the drilling of the caissons to assure sufficient penetration of transition material to develop design side wall skin friction and/or end bearing as required.
- b. Ascertain that caissons are not placed beyond established tolerances for plumbness.
- c. Inspect and approve caisson prior to placement of concrete only after the approved criteria has been met.
- d. Inspect rebar and concrete placement.
- e. State that the caissons have been placed in accordance with approved plans and specifications.

5. Records and Certification

Upon completion of the Geotechnical Engineering Services provide a certified document stating that to the best of his/her knowledge and in his/her opinion the construction of soils and foundations has been completed in accordance with the requirements of the project plans and specifications and the Arlington County Building Code.

D. Super Structure Inspecting and Testing Services

(See the SSI for required verification and inspections of concrete construction)

1. Concrete Structures

- a. Formwork and Reinforcing

Arlington County Pre-Construction Manual

- I. Inspect formwork, shoring, and reinforcing prior to placing concrete.
 - II. Authorize in writing the stripping of formwork and re-shoring prior to removal of these materials only after the criteria approved by SER has been met.
 - III. Stripping letter requirement
The SIER shall initiate a stripping letter when concrete strength have achieved the levels specified by the SER, the test result for the field-cured cylinders shall be included and the stripping requirement as stated in the county approved documents, the stripping letter shall contain the seal and signature of both the SIER and the SER, the stripping letter shall include the minimum require concrete strength for stripping, that was established by the SER , the stripping letter shall also include cold weather temperature loge and post-tension stressing recorded, all stripping letter shall be send electronically to Arlington County prior to stripping.
- b. Batching
- I. Inspect batching tickets and delivery operations for compliance with the project specifications.
- c. Compression Tests
- I. Label each compression cylinder identifying the truck load of concrete from which sample was taken and the exact location in construction where deposited.
 - II. Test Cylinder. Concrete samples for strength testing (both laboratory- cured and filed-cured cylinder) shall be taken in according with ASTM C 172. Concrete test cylinders shall be 6x12 inches in size, with two 6x12 inch cylinders cast for each test.
Exception: Concrete test cylinder may be 4x8 inches in size, subject to the following condition:
 - The use of alternative concrete test cylinder shall be specified by the structural engineer of record on a case by case basis.
 - The use of alternative concrete test cylinders shall be considered by the county on a case by case basis.
 - The use of alternative concrete test cylinder shall be limited to 8000 PSI maximum compressive strength at 28 days
 - Concrete mix design shall be adjusted for the alternative concrete test cylinder and shall be reapproved by the structural engineer of record.
 - Three 4x8 inch cylinder shall be cast for each test.
 - III. Test specimens in accordance with ASTM standard “Method of Test for Compressive Strength of Molded Cylinders.”
 - IV. Field- cured cylinders. As-per. where required by the building official to determine adequacy of curing protection of concrete in the structure, specimens shall be prepared, cured, tested and test results evaluated for acceptance in according with ACI318, Section 5.6.4

Arlington County Pre-Construction Manual

Filed –cured cylinder shall be cured as closely as possible to the location of placement of the concrete pour they represent and be exposed as nearly as possible to the same temperature and moisture environment, in accordance with ACI 318 and ASTM C 31.,

Field-cured cylinder for concrete to be pumped shall be taken at the point of discharge (end of the hose) and shall be stored on the deck under the same atmospheric condition as the placed concrete.

Field- cured cylinder is required to evaluate the strength of concrete prior to the removal of concrete formwork, shoring& re-shoring, also prior to stressing post-tensioning cable in order to determine the adequacy of curing and protection of the concrete.

V. Field cured test specimens for frame slab.

- Prior to striping and stressing-post tension cables as per project specification (2-4 days)
- 2-7 day
- 2-28 day

VI Stripping

- When a pour is at least three (3) days old and field cured test cylinders indicate a concrete strength more than 75% of the design strength, the slab shall first be re-shored and then the horizontal and vertical formwork can be removed.
- Reshoring shall be completed for each bay before removing formwork in adjacent bays.
- Under no circumstance formwork shall be removed until concrete has reached a minimum of 75% of the design concrete as determined by field cured concrete test cylinders.
- No added construction loads are permitted on slab while reshoring.
- Stripping letters shall be signed and seal by both the SIER and SER unless the SER wave his approval for the non-post tension part to the SIER (waiver letter shall be submitted to ISD).
- Inspection Services Division reserve the right to review and approved the stripping prior issuing it and that will determine in a case by case.
- No stripping procedure under any circumstance shall be commence with the stripping letter been approved and emailed to the assign ISD structural engineer.

d. Carbon Fiber FRP (fiber reinforce polymer)

Arlington County Pre-Construction Manual

- FRP inspection is per ACI 440.2R- 08-chapter 7 section 7.1, including the FRP Pull-off strength test as per ASTM D7 522/ D7 522M-09
- FRP shall be fire proof by a listed membrane.

e. Connections

- I. Inspect all connections between precast concrete and cast-in-place concrete.
- II. Inspect anchor bolts, plates, etc. installed in the concrete.

Note:

Appendix C contains copies for concrete cold weather log and stripping / stressing authorization request.

2. Post-Tension Concrete Structures

- a. Inspect formwork, tendons and reinforcing prior to placing of concrete.
- b. Inspect all placing of concrete.
- c. Inspect all tensioning and keep elongation records.
- d. Grant permission to contractor prior to all burning, cutting or capping of pre-stressing anchorage only after the criteria approved by SER has been met. Perform testing of concrete as for cast-in-place concrete except as modified in the specifications for post-tensioning structure.

3. Structural Steel Structures

(See SSI for required verification and inspection of steel construction)

- a. Check setting of anchor bolts and base plates.
- b. Determine that members are properly placed and that member sizes and locations are in accordance with approved plans.
- c. Check field welders' qualifications by examining their certificates.
- d. Inspect erected members for proper workmanship and to determine that members are plumb and level.
- e. Inspect shop and field connections for proper workmanship.
- f. Inspect and test welds and connectors as required by project specifications.
- g. Test any shop weld that appears questionable.
- h. Inspect connections to frame (such as welded connections, mechanical connections, etc.)
- i. Inspect sprayed-on fireproofing.
- j. Inspect shear studs.
- k. Inspect steel deck to ensure that it is properly placed, connected and that it is sized and located in accordance with approved plans.
- l. Inspect steel joist to ensure that they are properly placed and that they are sized and located in accordance with approved plans.
- m. Inspect end anchorage, bridging connection. Make sure bridging is installed at appropriate time in erection sequence.

4. Structural Masonry Structures

(See SSI for required Level 1 & Level 2 Special Inspections)

- a. Inspect placing of masonry units.
- b. Inspect placement of reinforcing.
- c. Inspect placement of grout/mortar.
- d. Conduct prism tests per contract documents.

5. Precast Concrete Structures

- a. Shall provide full time inspection and observation of fabrication process.
- b. Shall provide full-time construction observation and inspection of erection process in accordance with erection plans and sequence.
- c. Shall notify appropriate design professionals of record and the County if inspection and/or test results do not meet the requirements of the County-approved construction documents.
- d. Shall ensure that all required approvals are obtained prior to inspection, approval and continuation of construction.
- e. Shall submit a final report of special inspections.
- f. SEE CHAPTER 3 for additional requirements
- g. Records and Certification

Upon completion of the structural phase of the building, the inspection agency shall provide a certified document stating that to the best of his/her knowledge and in his/her opinion the construction of the super structure has been completed in accordance with the requirements of the project plans and specifications and the Arlington County Building Code.

1.6.3 Structural Engineer of Record (SER)

- Must be retained by the Owner.
- Shall have the ultimate responsibility for **all** structural elements of the building.
- Shall review and design **approval** structural shop drawings including all connections.
- Shall review and design **approval** structural members and connections designed and/or fabricated by the steel fabricator.
- Shall **approve** concrete and grout mix designs.
- Shall review and design approval formwork design and criteria for removal of the formwork.
- Shall review and approve sheeting and shoring design. SER shall also establish and submit the criteria for inspection, testing and removal of sheeting and shoring.
- Shall approve construction bracing designs, mortar and grout mix designs and other building element designs that affect the approved structural construction documents for conformance with those documents.
- Shall review construction observation and testing reports/records provided by the SIER for conformance with the approved structural construction documents and the VUSBC and takes appropriate action(s) as required. Confirm temporary and final support for vertical load from precast design calculations and erection drawings.
- Provide temporary and final support for gravity and lateral loads at the bottom of precast columns/walls from the precast design.
- Provide temporary and final support of eccentric loads from precast design.
- Review and approve precast erection drawings, including erection sequencing and bracing and grouting plans.

Arlington County Pre-Construction Manual

- Upon completion of foundation and superstructure, provide a professional opinion that the project complies with the structural construction documents and specifications and Arlington County Building Code.

1.6.4 Geotechnical Engineer of Record (GER)

- Shall be retained by the Owner.
- Shall prepare and issue geotechnical report of subsoil evaluation.
- Shall prepare design criteria for foundations and foundation systems.
- Shall revise geotechnical recommendations if site soil or groundwater conditions differ materially from conditions indicated on the approved geotechnical report, coordinate changes with the design professionals of record responsible for the structural design of foundations, deep foundations or other types of foundation systems.
- Upon completion of the geotechnical phase of the building, the GER shall provide a certified document stating that to the best of his/her knowledge and in his/her opinion the construction of the soils and/or foundation systems (as appropriate) has been completed in accordance with the requirements of the project plans and specifications and the Arlington County Building Code

1.6.5 General Contractor (GC)

- Shall have the ultimate responsibility for the construction.
- Shall provide the means, methods and materials and temporary shoring and support of construction.
- Shall coordinate construction and verify, as necessary, so that the building is capable of carrying construction loads.
- Shall take necessary action to assure a safe job site and meet OSHA, VOSHA, and other job site safety responsibilities.
- Shall submit construction documents to the County as identified at the preconstruction meeting.
- Shall notify the County and appropriate design professionals of record of construction schedules as identified at the preconstruction meeting.
- Shall schedule and coordinate that the required inspections are conducted and approved prior to proceeding with the work.
- Shall not conceal any work without prior approval of the inspecting professional.
- Shall ensure that all required approvals are obtained prior to continuation of construction.
- Shall provide temporary shoring and bracing as required to maintain stable structure during all stages of construction.
- Upon completion of the work shall provide a professional opinion that to the best of his/her knowledge, information and belief, the work has been constructed in accordance with approved plans, specifications, Arlington County Building Code and the SSI.

1.7 PRECONSTRUCTION MEETING

A pre-construction meeting is required for every project whose elements are subject to special inspections as a condition of permit issuance. The meeting shall take place after plans have been reviewed and approved by the County but prior to the issuance of a permit.

The SSI and the qualifications of the SIER and/or the Inspection and Testing Agency Engineer of Record are also reviewed again by County building officials and approved at the preconstruction meeting prior to the issuance of a permit.

Arlington County Pre-Construction Manual

1.7.1 Participants

The following members of the construction team shall participate in pre-reconstruction meetings, as required:

- Owner or owner's duly authorized representative
- Structural Engineer of Record (SER)
- Architect of Record
- Special Inspector (SIER)
- General Contractor (GC)
- County building officials
- Professional in charge of geotechnical services, as required.
- Professional in charge of structural inspection, as required.
- Professional in charge of fabricated building elements.

1.7.2 Purpose

The purpose of the preconstruction meeting is to review the special inspection requirements of the project and establish communications among the project team members. The parties shall agree on the scope of inspection. The Owner shall submit a Statement of Special Inspections (SSI). At a minimum, the following shall be discussed:

- a. **Project Construction Requirements:** Project construction requirements of the Arlington County Special Inspections Program (SIP), including construction methods, site safety and fire hazard prevention during the construction process.
- b. **Statement of Special Inspections (SSI):** The scope of special inspections for the project.
- c. **Qualifications:** Qualifications of proposed inspection professionals and testing agencies, including evidence of laboratory accreditation and technician certification from recognized authorities subject to the approval of the County. These qualifications documents shall be submitted before, or at preconstruction meeting, prior to commencement of permitted work.
- d. **Responsibilities:** The roles and responsibilities of each party.
- e. **Communication:** Communication channels between the County and owner's representatives and members of the design and construction teams.
- f. **Phased Construction:** Requirements for phasing of permits, certificates of completion and occupancy requirements.
- g. **Revision:** requirements for revised shop drawings, revisions to construction documents, etc.
- h. **Inspections:** Requirements for special inspections & code inspections, to include requirements for approval of revised plans prior to scheduling inspections.

1.8 REPORTS AND COMMUNICATION FLOW

The SIER shall keep records of inspections. The SIER shall furnish inspection reports to the building official as required by the SSI and this manual, to the owner or owner's designee and to the registered design professional as appropriate. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional of record, prior to the completion of that phase of the work. A final report of inspections documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted.

Arlington County Pre-Construction Manual

Any deviation from the approved construction documents must be brought to the immediate attention of the registered design professional of record and the Building Official.

The SIER shall provide reports of special inspection signed and sealed by the professional in charge as required by the SSI and this Special Inspections document within five business days. Deficiency reports shall be submitted within three business days.

1.9 DEFICIENCY REPORTS

Deficiency reports shall describe the nature and specific location of the deficiency and include a description of the action recommended by the appropriate professional in charge. Each deficiency item, by discipline, shall be sequentially numbered.

1.10 FINAL REPORT OF SPECIAL INSPECTIONS

Upon completion of the specified special inspections and testing, the SIER, and other design professional(s) of record providing special inspections and observation and testing services shall submit a final report of special inspections to the County, owner and others designated by the owner. Reports shall indicate that work inspected was done in conformance to approved construction documents.

1.11 PERSONNEL QUALIFICATIONS

In accordance with the provisions of the VCC, except for registered design professionals, field personnel shall be certified by examination through ICC, ACI, AWS, ASNT, NICET, WACEL or other organizations whose programs are recognized by the County. Inspection and Testing Agency personnel shall perform only those services in which they have demonstrated competency through such a recognized certification or registration program.

1.11.1 Unusual Functions

In the event there is no certification program applicable to a specific function, the SI shall submit, to County, a signed statement attesting to the competency of personnel and identifying the basis upon which such statement is made.

1.11.2 Laboratory Qualifications

Laboratory facilities must be accredited by an agency such as A2LA, NVLAP, WACEL or other organizations whose programs are recognized by the County. All laboratory facilities must meet the requirements of ASTM E329, ASTM D3740, and ASTM C1077 as applicable. The SIER shall accredit on-site laboratory facilities in accordance with ASTM E329.

1.11.3 Resumes

The SIER shall submit resume and documentation, for approval by the county, of inspection and testing Personnel and laboratories prior to the pre-construction meeting.

1.12 CHANGES IN SPECIAL INSPECTIONS TEAM

In the event that the design professionals or inspection and testing agencies of record need to be changed during the course of the project, the owner shall notify the County, and submit documentation of

Arlington County Pre-Construction Manual

qualifications, of new replacement personnel. The County shall approve or deny such replacement. The owner shall provide to the County a written explanation as to the reason for such change; shall identify the replacement organization or individual with whom he has contracted; shall furnish the documentation necessary to show such organization or individual is qualified for the work as required herein, and shall provide a revised inspection agreement signed by the new party. The County shall stop work if, in the County's opinion, work otherwise would proceed without adequate inspection, and shall authorize a recommencement of work only at such time as it is satisfied that the integrity of the inspection can be assured.

1.13 OBLIGATIONS OF PARTIES TO THE CONSTRUCTION

The organizations and individuals performing inspections are responsible for the adequacy of their work. In addition, any conditions which they believe are **not justifiable or outside the scope of this agreement** shall be reported to the owner, general contractor, and the Building official.

1.14 MODIFICATION TO APPROVED DRAWINGS

All individuals involved with this program in an inspection capacity are charged with a responsibility to report to the county representative any error, omission, inconsistency or ambiguity in the approved plans. Appropriate revisions shall be developed. When time permits, or when the changes are in the opinion of the appropriate county representative, substantial enough to so warrant, such revisions shall be submitted to the county for review and approval. Otherwise, a statement of revision shall be submitted to the county by the architect or engineer of record prior to commence of work

1.15 DETECTION OF CRITICAL PROBLEMS

Any individual involved in the inspection function who detects a condition which in his or her opinion justifies a stop-work proceeding or other immediate remedial measure, shall so notify the supervisor of the function in question. If the supervisor is not present, or if the supervisor is unable or unwilling to take what is deemed to be appropriate corrective measures, the person detecting the condition in question shall directly contact the building official.

1.16 STATEMENT OF SPECIAL INSPECTIONS (SSI)

Permit applicants are required to submit a statement of special inspections prepared by the SER as a condition for permit issuance and preconstruction meeting. This statement shall include a complete list of materials requiring special inspections by this section, the inspections to be performed and a list of the individuals, approved agencies and firms intended to be retained for conducting such inspections.

The model statement can be used “as is,” but is designed with the flexibility to be modified to meet the unique requirements of a specific project.

Pages 43- 62 are designed to be submitted with plans and specifications as part of the permit application process. Page 1 identifies the project name, location, owner, Architect, Structural Engineer, Geotechnical Engineer, Special Inspections Professional of Record, the Inspections and Testing Agency Engineer of Record if different from the Special Inspections Professional of Record and General Contractor. The Schedule of Special Inspections identifies the scope of observation and testing services, following VCC Section 1704 requirements. The qualifications of the Special Inspections Professional of Record and/or the Inspections and Testing Agency Engineer of Record are reviewed and approved by the County as part of the permitting process.

Note:

Appendix A contains a copy for the statements of special inspection for building also appendix B contains a copy for the statement of special inspection for sheeting and shoring.

1.17 FINAL REPORT OF SPECIAL INSPECTION AND CERTIFICATE OF COMPLETION

The Final Report of Special Inspections and Certificate of Completion shall be submitted after the Special Inspections specified for the project have been completed.

FINAL REPORT OF SPECIAL INSPECTIONS

Project Name: _____

Project Address: _____

Permit Number: (A/P): _____

SPECIAL INSPECTIONS ENGINEER OF RECORD (SIER): _____

All deficiency items reported in the last interim report(s) have been completed. To the best of my information, knowledge and belief, the special inspections specified for this project, itemized in the Statement of Special Inspections submitted for permit, have been completed. In my professional opinion, building elements subject to special inspections have been found to comply with County-approved construction documents and project specifications.

Respectfully submitted,

Signature of Special Inspection Engineer (SIER)

Date

Seal

CERTIFICATE OF COMPLETION

Project Name: _____

Project Address: _____

Permit Number: (A/P): _____

STRUCTURAL ENGINEER OF RECORD (SER): _____

All deficiency items reported in the inspection reports have been corrected. To the best of my information, knowledge and belief, the special inspections specified for this project have been completed. In my professional opinion, the structure is constructed in accordance with the approved construction documents and project specifications and is in compliance with County building codes and regulations.

Respectfully submitted,

Signature of Structural Engineer of Record

Date

Seal

CERTIFICATE OF COMPLETION

Project Name: _____

Project Address: _____

Permit Number: (A/P): _____

PRECAST ENGINEER OF RECORD (PER): _____

All deficiency items reported in the inspection reports have been corrected. In my professional opinion, the structure has been fabricated and constructed in accordance with the approved construction documents and project specifications and is in compliance with County building codes and regulations.

Respectfully submitted,

Signature of Precast Engineer of Record

Date

Seal

CERTIFICATE OF COMPLETION

Project Name: _____

Project Address: _____

Permit Number: (A/P): _____

GEOTECHNICAL ENGINEER OF RECORD (GER): _____

All deficiency items reported in the inspection reports have been corrected. To the best of my information, knowledge and belief, the geotechnical inspections specified for this project have been completed. In my professional opinion, the soil and/or foundation system for this structure is constructed in accordance with the approved construction documents and project specifications and is in compliance with County building codes and regulations.

Respectfully submitted,

Signature of Geotechnical Engineer of Record

Date

Seal

CERTIFICATE OF COMPLETION

Project Name: _____

Project Address: _____

Permit Number: (A/P): _____

GENERAL CONTRACTOR (GC): _____

All deficiency items reported in the inspection reports have been corrected. To the best of my information, knowledge and belief, the special inspections specified for this project have been completed. In my professional opinion, the structure is constructed in accordance with the approved construction documents and project specifications and is in compliance with County building codes and regulations.

Respectfully submitted,

Signature of General Contractor

Date

CHAPTER 2 DEFINITIONS

The following words and terms shall, for the purposes of this manual and the County's Special Inspections Program have the meaning delineated below.

Architect of Record (AR): The Registered Design Professional retained by the owner to design and specify architectural construction and whose signature and seal appears on the County-approved architectural construction documents.

Certification: A statement of professional opinion by a registered design professional that indicates that the item(s) under consideration meet the requirement of the County-approved construction documents and this manual. Certifications shall bear the original seal and signature of the design professional making the statement.

Completion Letter: A certification letter signed and sealed by the design professional(s) of record who performed special inspections stating that the construction elements specified for special inspections have been inspected and conform to the County-approved plans, specifications and this manual.

Construction Documents: Plans and specifications and other documents prepared for the purposes of obtaining a building permit.

County-Approved Documents: Construction documents approved by Arlington County Building Official.

Fabrication and Erection Documents: Written, graphic and pictorial documents prepared or assembled after issuance of a building permit describing the design, location and physical characteristics of building components or materials necessary for fabrication, assembly or erection of project elements.

Final Report of Special Inspections: A certification by the Special Inspections Professional of Record (SIER) indicating that specified special inspections are completed and meet the requirements of the County-approved construction documents, project specifications and this manual.

Inspection: The periodic observation of work and the performance of tests for certain building or structure components.

Inspection and Testing Agency: Agency or agencies retained by the Owner and approved by the County to perform special inspections and materials testing as required by IBC and the County. Contractors are barred from retaining the services of inspection and testing agencies for Special Inspections.

Non-Structural Elements: Elements of a building that are not primary or secondary structural elements such as exterior curtain walls and cladding, non-load-bearing partitions, stair railings, etc.

Owner: Owner or owners of the freehold premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, or lessee in control of a building/structure to be constructed/altered or the owner's duly authorized representative.

Arlington County Pre-Construction Manual

Special Inspection Engineer of Record (SIER): The registered design professional retained by the owner to provide special inspections and material testing services as specified by appropriate design professionals of record and approved by the County. The SIER may be an agent of, or independent of the Inspection and Testing agency or the project's SER.

Statement of Special Inspections (SSI): A statement prepared by the Owner and appropriate registered design professionals of record (GER, SER, PER) and submitted by the permit applicant for review and approval by the County. The SSI indicates the scope of special inspections applicable to a construction project and identifies the names and qualifications of the design professionals and inspection and testing agencies that will provide those services.

Structural Engineer of Record (SER): The registered structural engineer retained by the owner to have ultimate responsibility to design or specify structural documents and specifications.

**CHAPTER 3
ADDITIONAL REQUIREMENTS**

3.1 PRECAST CONCRETE

This section delineates the responsibility of individuals in charge of design, fabrication, erection, structural support, and handling of precast concrete building elements and its associated material testing and handling.

3.1.1 Project A/E Team

Project A/E team shall issue specific precast specifications including, but not limited to, erection methods, tolerances and final tolerances and appropriate safety regulations

3.1.2 Precast Erector

The precast erector shall perform or obtain a pre-erection survey of all bearing surfaces and connections embedment in the cast-in-place concrete construction intended for the support or connection of the precast concrete. Any deviation from the precast drawings shall be coordinated with both the precast engineer and the structural engineer of record.

3.1.3 Precast Engineer

The Precast Engineer is the registered design professional in charge of precast design and fabrication and shall be responsible for and shall provide the following services:

- Prior to erection of any precast pieces; precast engineer must arranged a preconstruction meeting with owner, SER, GC, precast supplier, inspectors, and erector’s foreman. Focuses of this meeting would be on the safety, alignment issues, crane operation, or any other item that SER requires to be dissuaded. Minutes of this meeting and signature sheet of attendants with the date and location of where meeting was held must be recorded and submitted to the county prior to start of erection of precast.
- Submit to the Structural Engineer of Record (SER) for review and approval the following:
 - a. Detailed signed and sealed erection and temporary bracing/shoring plan that indicates overall sequence and specific localized erection procedures. It must indicate when and at what stages temporary bracing is to be installed. It must indicate precisely what connections are required and when, what length and size of weld, etc.
 - b. Detailed piece drawings of every fabricated piece.
 - c. Specify in advance of the erection what is in tolerance and what would be out of tolerance. Specification must also indicate what is acceptable and what is not.
 - d. Complete design calculations - all elevations.
 - e. Confirm detailing and manufacturer of elements per design calculations.
 - f. Provide all connection details with a numbered sequence as to when, in the process, 00% completion of each connection vis-a-vie erection sequence as required.

Arlington County Pre-Construction Manual

- g. Submit signed and sealed detailed Erection Sequence, Bracing and Grouting Sequence and Timing Plan for each element, type, and sequence of entire precast building.
- h. Shall prepare, for review and approval by SER, ***erection, bracing and grouting sequence and timing plan*** describing, in detail (using erection drawings as a template) complete details and sequencing of routing, bracing, etc. And systems to deal with misfit elements
- i. Upon completion of the work shall provide a professional opinion that to the best of his/her knowledge, information and belief, the work has been constructed in accordance with approved plans, specifications, Arlington County Building Code and the SSI

3.1.4 Erection Inspections

The erection process must be conducted under the full-time observation of the SIER. Daily reports must be furnished by the SIER. The inspection and inspection reports must address the items identified in the ***erection, bracing and grouting sequence and timing plan*** and the following:

Columns – erection and final

- Plumbness
- Grout under and above base plates in daps
- Grout at column splices
- Bolts, dowels, grout and installation

Light walls – erection and final

- Plumbness
- Grout

Spandrel Connections – erection and final

- Bolts
- Grout

Inverted tee beams – erection and final

- Lengths
- Connections
- Grout

Tees – Welds – erection and final

- To tees
- To walls

4.1 EARTH RETENTION SYSTEM

4.1.1 Preparation of Construction Documents

Earth retention system shall be designed by a structural engineer licensed in the Commonwealth of Virginia. Designs shall be submitted to the SER for review, comment, approval, and prior to submitting to Arlington County

4.1.2 Review and Approval

Two copies of the earth retention system construction documents and related calculation shall be signed and sealed and submitted by the designed engineer to Arlington County Inspection Services for review and approval, in addition to structural design, the construction documents shall include the following:

1. **System installation criteria:**
 - a. Load testing and movement acceptance criteria for anchors.
 - b. The allowable lateral movement.
 - c. Tieback length (bonded and non-bonded) and angle.
2. **Dewatering**, any requirements for dewatering of the excavation that are specified or assumed in the earth retention system design.
3. **Slope protection**, specification of responsibility for protecting all slopes in according to general practice.
4. **Adjoining properties**, recommendation for protecting adjoining properties, including exciting public and private streets.

4.1.3 Encroachment

When it becomes necessary to encroach on adjoining public or private property to drive piles or tie backs, the applicant shall obtain written permission from the owner of the adjacent property and submit a copy of the owner's permission to Arlington County Inspection Services.

4.1.4 Start of Work

No excavation work may start in field, until submitted plans are reviewed, approved by Arlington County Inspection Services and a permit has been issued.

4.1.5 Change in Design

No changes in design are to be made in field unless authorized by the design engineer of record then approved by SER and Arlington County Inspection Services.

4.1.6 Lagging Installation.

Excavation to install lagging shall not exceed five feet high and all lagging shall be installed prior to excavating further.

4.1.7 Stockpiling

Do not stockpile excavating material immediately adjacent to the excavation walls., unless specifically approved by earth retention system design professional, otherwise stockpile material should be kept back from excavation a minimum distance equal to ½ the excavation depth.

SECTION II

CONSTRUCTION-RELATED REQUIREMENTS

Arlington County Pre-Construction Manual

BUILDING ADDRESSING

1. During construction and for permanent addressing, the dwelling unit or building shall have displayed the County assigned street address identification number at the front entrance in a manner as to be visible and distinguishable from the curb line or pavement edge of the opposite side of the street on which the dwelling or building is located or 30 feet into the adjacent street when there is no opposite street. See Arlington County Code 27.12.
2. Building addresses are assigned by Inspection Services Division at the time the building permit application is submitted or earlier when required for zoning variance action or other needs.
3. Each independent building or dwelling unit shall have a separate address.
4. Accessory structures, buildings which are incidental to the main structures, do not have separate addresses (tools sheds, garages, etc.).
5. The address assigned should be the appropriate street number on the public street to which the building's main entrance either faces or is closest. Whenever there is a question as to address, ease of determining the location of the building and access by emergency personnel and equipment shall be the deciding factors.
6. When there is one main street entrance to townhouses or condo units, each individual unit shall be addressed by a single address and a different unit number.
7. In high-rise buildings with a central core and two (2) or three (3) wings, one address will be given and unit numbers may not be duplicated within the building.
8. Townhouse with a separate entrance to a public street shall have a separate street address.
9. When there are not enough address numbers between existing numbers to assign an address, a letter will be placed in the unit field to differentiate the units.
10. Undeveloped property or property not part of an existing parcel will be addressed to the hundred blocks on which it fronts.
11. Address changes shall be considered to correct past mistakes, street redesign, etc. or similar types of request.
12. Temporary addresses shall be issued for temporary construction facilities and sales related buildings such as pavilions according to these rules so that the temporary address will, in most cases, be the address of the final permanent structure.
13. On large residential or commercial projects, Inspection Services will seek input from ECC on the appropriateness of assigned addresses. Comments or suggestions shall be returned by ECC within two (2) days.

Arlington County Pre-Construction Manual

ON-SITE CONCRETE BATCH PLANTS

WHEN REQUIRED

The requirements of this section must be met whenever a concrete batch plant is to be used.

PROCEDURAL REQUIREMENTS

Prior to the manufacture of concrete, the **SPECIAL INSPECTIONS ENGINEER OF RECORD** shall inspect the plant for conformance to standards outlined in this section, and shall verify the accuracy of scales before they are used.

GENERAL SITE REQUIREMENTS

1. Access road shall be at least 20 feet wide.
2. A mud mat shall be large enough to prevent contamination of stock piles.
3. A roadway shall be adequate to prevent delivery trucks from contaminating stock piles
4. Barricades and warning devices shall be installed to prevent workers from entering the working radius of the scraper boom.
5. Stockpiles shall be separated by walls extending to the outside perimeter of the boom radius. These walls shall have a 45-degree minimum angle from the leading edge of the stock pile.
6. All other requirements of ASTM C94, C685 and ACI 304 shall be strictly met.

TOWER CRANES

PROCEDURAL REQUIREMENTS

1. Prior to the placement of crane foundation, the **CRANE OWNER, CONTRACTOR OPERATING THE CRANE**, or the **GENERAL CONTRACTOR** shall submit the following information to Arlington County Inspection Services for review and approval:
 - Crane specifications including manufacturer's operating model number, hook height, boom length, overturn moment, and manufacturer's specification relative to overturn moment, slewing moment, vertical load (minimum and maximum), punching shear, shear per bolt group, uplift per bolt group, compression per corner and horizontal shear (minimum and maximum).
 - Plans showing structural calculations and design of crane foundations signed and sealed by a **PROFESSIONAL ENGINEER** registered in Virginia. Plans and calculations shall clearly indicate footing dimensions, required compressive strength of concrete, steel reinforcement, and allowable soil bearing pressure. The allowable soil bearing pressure shall be consistent with values shown the soil test report for the project prepared by the **GEOTECHNICAL ENGINEER OF RECORD**.
 - Concrete mix design indicating review and approval by the **PROFESSIONAL ENGINEER** responsible for design of crane foundations.
 - Plans, signed and sealed by a professional engineer registered in Virginia, showing the crane location, boom swing and method of support for cranes located within or supported by the

Arlington County Pre-Construction Manual

structure. Such plans shall be reviewed and approved by the **STRUCTURAL ENGINEER OF RECORD**.

- A copy of notification to FAA prior to erection.
2. Prior to use of the crane, the **CRANE OWNER, CONTRACTOR OPERATING THE CRANE**, or the **CRANE MANUFACTURER**, shall submit to Inspection Services certification of the crane inspection including:
- Inspection reports addressing soil bearing capacity, foundation inspection reports, and concrete tests.
 - Upon completion of the crane foundation, the **SPECIAL INSPECTIONS ENGINEER OF RECORD** shall submit to the county a final report of special inspections for the crane foundation.

INSPECTION AND TESTING PROCEDURES

1. Inspection of soil and footing shall be done by the SIER. A building permit is required prior to the installation of footing, the inspection shall be performed and approved prior to crane installation.
2. An electrical permit shall be obtained and an inspection by Arlington County Inspection Services shall be scheduled immediately upon completion of installation and shall be performed prior to use of the crane.

SAFETY RULES AND REGULATIONS

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 the Manufacturer's Manual on Erection and Operation shall be furnished to the operator and kept on the job. No crane is to be erected in the field before all "Procedural Requirements" as set forth in this document are met. Further, the crane shall not be erected before inspection of the crane base, tower sections, jib and counter jib for structural defects by the **CRANE MANUFACTURERE'S REPRESENTATIVE** or a **PROFESSIONAL ENGINEER**.

- a. Adequate guys or braces shall be used during erection to prevent collapse of the equipment. All guying and bracing shall conform to the manufacturer's recommendations.
- b. The elevation at four points of the crane base shall be checked for settlement or other movement by the contractor at erection, at 30 days after the erection date and every 45 days thereafter. All data must be reported to the Arlington County Inspection Services Division.
- 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.

Arlington County Pre-Construction Manual

- d. Jibs and counter weights shall be erected and maintained so that no part shall strike any building, overhead wiring, or any other object while slewing 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 at 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 **STRUCTURAL ENGINEER OF RECORD**.
- g. All bolts shall be secured in accordance with manufacturer's project specifications, and shall be inspected 30 days after erection and every 200 working hour thereafter. Results of these inspections shall be sent to the Arlington County Inspection Services Division.
- h. Original manufacture parts and anchors stools must be used.
- i. The climbing device (i.e., hydraulic jacks or wire rope system) shall be checked before each climb.

2. Safety Devices

All safety devices provided shall be maintained in operable condition always.

- a. The trolley shall be equipped with an automatic breaking 50 M.P.H. or 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. In any case prior approval of **ARLINGTON COUNTY INSPECTION SERVICES DIVISION** is required.
- 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 a deck or 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 movement overload device shall be tested periodically in accordance with the 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 Crane Manufacturer or his Representative.

Arlington County Pre-Construction Manual

j. Working condition is restricted to wind speeds up to 30 MPH, unless otherwise required by the crane manufacture. If wind speed is anticipated to exceed 30 MPH, the crane must be set for out of services operation and free to weathervane as recommended by the manufacture.

3. Electrical Equipment

All installations shall comply with Article 610 of the National Electrical Code (NEC).

- a. 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. Provision shall be made to prevent the accidental reversing of all motors.
- e. 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.
- f. All electric motors shall be separately equipped with a current-overload-prevention device.
- g. All motors, controls, switches, etc., shall be grounded in accordance with applicable sections of the NEC. All flexible power cords or lays shall be in accordance with the applicable sections of the NEC. All exposed metal parts, including pendant controls, shall be effectively grounded in accordance with Article 610.61 of the NEC.

TEMPORARY STANDPIPE EXTENSION

Where required. Buildings four stories or more in height shall be provided with not less than one standpipe for use during construction. Such standpipes shall be installed before the progress of construction reaches 40 feet (12.192 m) in height above the lowest level of fire department vehicle access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairs. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

Buildings being demolished. Where a building is being demolished and a standpipe exists within such a building, such standpipe shall be maintained in an operable condition so as to be available for use by the fire department. Such standpipe shall be demolished with the building but shall not be demolished more than one floor below the floor being demolished.

Detailed requirements. Standpipes shall be installed in accordance with the provisions of Chapter 9 of IBC.

Exception: Standpipes shall be either temporary or permanent in nature, and with or without a water supply, provided that such standpipes systems conform to the requirements of Section 905 of VCC as to capacity, outlets and materials.

Arlington County Pre-Construction Manual

Water supply. Water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material accumulates.

MATERIAL HOISTS USED FOR CONSTRUCTION

The following are some of the common safety and personnel rules applicable for material hoist per the VOSHA requirements.

Separate mechanical permit is required for erection and operation of all material hoists. Equipment and operations must comply with requirements detailed in VOSHA Standard 1926.552.

- Material hoists over 85 feet shall have the hoist structure constructed of non-combustible or fire retardant materials. Cables across working or walking spaces to be protected to prevent tripping.
- Hoist booklet to be kept on the job site.
- Signage is necessary indicating rated load, no riders and operating rules.
- A six (6) foot fence is required around hoist at the ground level.
- Hoist platform gates are required to have positive latching as provided by the manufacturer. It is illegal to modify the latch.
- Fence gates, hoist platform and landing gates are to be closed and latched during operation of the hoist.
- Recommend gates on floors to be hinged or bolted on one end.
- Any welding of tower or platform requires certification.
- Operators are required to remain at lift.
- Communication system required for buildings 50' or higher.

MATERIAL HOISTS

1. Operating rules shall be established and posted at the operator's station of the hoist. Such rules shall include signal system and allowable line speed for various loads. Rules and notices shall be posted on the car frame or crosshead in a conspicuous location, including the statement "NO RIDERS ALLOWED."
2. No person shall be allowed to ride on material hoists except for the purposes of inspection and maintenance.
3. All entrances of the hoist ways shall be protected by substantial gates or bars which shall guard the full width of the landing entrance. All hoist way entrance bars and gates shall be painted with diagonal contrasting colors, such as black and yellow stripes.
 - (i) Bars shall be not less than two (2) by four (4) inch wooden bars or the equivalent, located two (2) feet from the hoist way line. Bars shall be located not less than 36 inches nor more than 42 inches above the floor.
 - (ii) Gates or bars protecting the entrances to hoist ways shall be equipped with a latching device.

Arlington County Pre-Construction Manual

4. Overhead protecting covering of two (2) inch planking, three-fourth (3/4) inch plywood, or other solid material of equivalent strength, shall be provided on the top of every material hoist cage or platform.
5. The operator's station of a hoisting machine shall be provided with overhead protection equivalent to tight planking not less than two (2) inches thick. The support for the overhead protection shall be of equal strength.
6. Hoist towers may be used with or without an enclosure on all sides. However, whichever alternative is chosen, the following applicable conditions shall be met:
 - (i) When a hoist tower is enclosed, it shall be enclosed on all sides for its entire height with a screen enclosure of one-half (1/2) inch mesh, No. 18 U.S. gauge wire or equivalent, except for landing access.
 - (ii) When a hoist is not enclosed, the hoist platform or car shall be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with one-half (1/2) inch mesh of No. 14 U.S. gauge wire or equivalent. The hoist platform enclosure shall include the required gates for loading and unloading. A six (6) foot high enclosure shall be provided on the unused sides of the hoist tower at ground level.
7. Car arresting devices shall be installed to function in case of rope failure.
8. All material hoist towers shall be designed by a licensed professional engineer.
9. All material hoists shall conform to the requirements of ANSI A 10.5-1969, Safety Requirements for Material Hoists.

PERSONNEL HOIST REQUIREMENTS

- Must comply with requirements detailed in ANSI A10.4 – 1990 and VOSHA Standard 1926.552.
- Separate mechanical permit required for erection and operation of all personnel hoists.
- Full load test required before hoist is put into service after each move and erection and each 90 days while in use. This test will be witnessed by the Elevator Inspector.
- General Requirements:
 1. Hoist towers outside the structure shall be enclosed for the full height on the side or sides used for entrance and exit to the structure. At the lowest landing, the enclosure on the sides not used for exit or entrance to the structure shall be enclosed to a height of at least (10) feet. Other sides of the tower adjacent to floors or scaffold platforms shall be enclosed to a height of ten (10) feet above the level of such floors or scaffolds.
 2. Towers inside of structures shall be enclosed on all four sides throughout the full height.
 3. Towers shall be anchored to the structure at intervals not exceeding 25 feet. In addition to tie-ins, a series of guys shall be installed. Where tie-ins are not practical, the tower shall be anchored by means of guys made of wire rope at least one-half (1/2) inch in diameter, securely fastened to anchorage to ensure stability.
 4. Hoist way doors or gates shall be not less than six (6) feet, six (6) inches high and shall be provided with mechanical locks which cannot be operated from the landing side, and shall be accessible only to persons on the car.

Arlington County Pre-Construction Manual

5. Cars shall be permanently enclosed on all sides and the top, except sides used for entrance and exit which have car gates or doors.
6. A door or gate shall be provided at each entrance to the car which shall protect the full width and height of the car entrance opening.
7. Overhead protective covering of two (2) inch planking, three-fourth (3/4) inch plywood or other solid material or equivalent strength shall be provided on the top of every personnel hoist.
8. Doors or gates shall be provided with electric contacts which do not allow movement of the hoist when door or gate is open.
9. Safeties shall be capable of stopping and holding the car and rated load when traveling at governor tripping speed.
10. Cars shall be provided with a capacity and data plate secured in a conspicuous place on the car or cross head.
11. Internal combustion engines shall not be permitted for direct drive.
12. Normal and final terminal stopping devices shall be provided.
13. An emergency stop switch shall be provided in the car and marked "Stop"
14. Ropes:
 - (i) The minimum number of hoisting ropes used shall be three (3) for traction hoists and two (2) for drum-type hoists.
 - (ii) The minimum diameter of hoisting and counterweight wire ropes shall be one-half (1/2) inch.

TEMPORARY USE OF ELEVATOR FOR CONSTRUCTION PURPOSES IN SINGLE AND MULTI-HOISTWAYS

To receive approval of using one (1) or more elevators for construction purposes in a single or multi-hoist way, the contractor/developer shall complete the following work:

1. Elevator cab to be operated at reduced speed or contract speed, i.e., inspection speed, and not available for use by the public.

EXCEPTION: An elevator can be approved at operational speed where the pits hoist way and mechanical rooms are deemed to be safe by the elevator inspector.

2. Each hatchway shall be screened including the elevator pit.
3. Do not need operational the fire service, lobby smoke detectors suppression or emergency generator.
4. All work in the elevator, in the hatchway, elevator pit and pit and elevator machine room to be completed for the requested elevator(s). Exception: Fire Suppression.

Arlington County Pre-Construction Manual

5. The elevator machine room to be separated for completion of work by non-elevator trade workers from the operating elevator motors and machinery.
6. All work in the elevator, in the hatchway, elevator pit and pit and elevator machine room to be completed for the requested elevator(s). Exception: Fire Suppression.
7. The elevator machine room to be separated for completion of work by non-elevator trade workers from the operating elevator motors and machinery.
8. Pass inspection for the safeties, door locks, hall buttons, etc.
9. Attendant to be on car at all times when in operation and must be able to speak fluent English.
10. This elevator will not be given a final inspection until all temporary work is completed.
11. Certificate to be renewed every six (6) months or at the discretion of the County for a set time frame. Cost is \$100.00 per six (6) months or fraction thereof.

CERTIFICATE OF OCCUPANCY

1. File with Zoning Office at 703-228-3883, Suite 1000, 2100 Clarendon Boulevard for:
 - Master Certificate of Occupancy for entire project and site.
 - Certificate of Occupancy for Core and Shell which includes parking areas.
 - Certificate of Occupancy for office space or dwelling units by floor or units.
2. Zoning Technician – Inspection Services Division, Suite 1000, at 703-228-3800 can answer any questions about filing or scheduling. Minimum filing deadline, one (1) week. Recommend thirty (30) days.
3. Elevator contractor to have elevator inspector check structural installation of elevators immediately after installation. Purpose is to check clearances, beams, shaft and to ensure elevator pit shaft and machine room are free of non-elevator materials and equipment. Building Inspector shall advise elevator inspector when shaft is completed.
4. The general contractor is responsible to ensure all subs, i.e., electrical, mechanical, plumbing and fire are ready and have called to arrange for inspections. All systems are to be pre-tested. The assigned building inspector will coordinate with the general contractor team inspections whenever possible.
5. All fire protection inspections shall be arranged with Inspection Services Division at 703-228-3800 at least two (2) weeks before scheduled test date.

Tests will include sprinklers, standpipe flow tests and fire pump tests in accordance with NFPA 20. It can take two (2) weeks to conduct alarm and smoke control system tests. All devices connected to fire alarm systems, hood systems and other fire protection systems need to be pre-tested. A simulated generator load test is witnessed by electrical inspectors. Partial inspections of the fire alarm systems will not be made where the system has devices jumped out or indicating trouble, etc. all bugs must be worked out prior to the system inspection.

PRE-TEST BEFORE WE ARRIVE FOR FINAL INSPECTION

6. Permanent street address signs shall be displayed. All mechanical, electrical, fire control, elevator and pump rooms shall also be marked. Building signage per ADA 4.1.2(16) to be installed

Arlington County Pre-Construction Manual

7. Fire control room or exterior of building to have Knox box with keys for use by Fire Department. A complete operating manual/chart for all fire protection systems shall be in-place before occupancy. Central supervisory station to be operational where applicable.
8. Each parking space shall be marked with an above grade handicapped parking sign, which includes a notice for the state fine in dollars.
9. When the building is suppressed, sprinklers shall be installed on the floor below and above the floor to be occupied.
10. In all spaces still under construction, the construction workers and work activity shall be physically separated from the public by barriers. Required egress shall be provided with signage to be approved by the Building and Electrical Inspectors.
11. Only approved security systems for egress doors or elevators may be used and shall be approved and inspected by the Inspection Services Division. Permits are necessary unless approved as part of the building permit.
12. Master Certificate of Occupancy shall be released only after all exterior work and site plan conditions set by the County Board are completed.
13. Individual floor, tenant offices or dwelling units will be approved per each CO (Certificate of Occupancy) application after and upon approval of the CO – Core and Shell permit.

Arlington County Pre-Construction Manual

REQUIRED INSPECTIONS

INSPECTION	MUST BE MADE AFTER THE FOLLOWING IS COMPLETE	MUST BE MADE BEFORE ANY OF THE FOLLOWING IS STARTED
<p>1. Excavation & Site Preparation, Sedimentation Controls.</p>	<p>General Inspection will be made for erosion and Sedimentation controls.</p>	<p>Before excavating – Noise Ordinance prescribed starting and stopping time for work. M-F 7AM – 9 PM</p>
<p>2. Sewer Tap Inspection</p> <p>Construction Code Inspector (Plumbing) 703-228-3800</p>	<p>At the time the sewer lateral is physically connected to the public sewer. This must be witnessed by an inspector.</p>	<p>Before using the sewer.</p>
<p>3. Footing Inspection</p> <p>Construction Code Inspector (Building) 703-228-3800</p>	<p>After the footing is completely prepared for concrete. See Special Inspections Program.</p> <p>Grade pegs must be in place.</p> <p>All concrete forms must be in place.</p> <p>Reinforcing steel must be in place if required</p> <p>The ground must be tested to insure load bearing capacity for the footing.</p>	<p>Prior to placing concrete in excavation.</p>
<p>4. Building Sewer Inspection</p> <p>Construction Code Inspector (Plumbing) 703-228-3800</p>	<p>After the sewer pipe between the building public sanitary sewer or septic tank is laid.</p> <p>All piping must be pressure tested. The test must be witnessed and approved by an inspector.</p>	<p>Before covering the sewer pipe with earth.</p>
<p>5. Water Service Inspector</p> <p>Construction Code Inspector (Plumbing) 703-228-3800</p>	<p>After the water pipe between the meter, main and the building wall is laid.</p> <p>Water pipe to standpipe</p>	<p>Before the pipe is covered. Often this inspection is made at the same time as the building sewer inspection.</p>

Arlington County Pre-Construction Manual

INSPECTION	MUST BE MADE AFTER THE FOLLOWING IS COMPLETE	MUST BE MADE BEFORE ANY OF THE FOLLOWING IS STARTED
<p>6. Ground Work Inspection</p> <p>Construction Code Inspector (Plumbing) 703-228-3800</p>	<p>After all underground sewer and all water pipes beneath a concrete floor slab are installed</p> <p>All piping must be pressured tested. The test must be witnessed and approved by an inspector</p>	<p>Before covering with gravel</p>
<p>7. Slab Inspections</p> <p>Construction Code Inspector (Building) 703-228-3800</p>	<p>The gravel and vapor barrier must be in place. Grade pegs must be installed to establish the finished elevation</p> <p>If drain tile is specified, it must be in place and properly sloped.</p> <p>If slab is elevated, form work and shoring must be in place and inspected, concrete tested and electrical conduit inspected.</p> <p>Structural – Shoring and re-shoring plans must be approved by the County</p> <p>Wall checks plat required for final grade floor</p> <p>Standpipe shall go from basement slab up with building one floor below highest staged floor pour.</p>	<p>Before placing concrete in the slab.</p> <p>After the slab is completely prepared, a reinforcing steel is placed.</p> <p>Allow three (3) days for approval of plans.</p> <p>Before framing for 3rd floor slab, see County Policy on Standpipe Extensions.</p>
<p>8. Wall Inspection</p> <p>Construction Code Inspector (Building) 703-228-3800</p>	<p>Pour Concrete walls.</p> <p>All reinforcing steel is inspected.</p> <p>Block Walls, after parging, waterproofing, installing drain tile and floor framing is in place.</p>	<p>Before installing form and placing concrete. Before back fillings.</p> <p>Submit wall check plat for 1st floor elevation and site location.</p>
<p>9. Elevator Inspections</p> <p>NEIS 3rd party Inspection 1-800-886-6347</p> <p>Personnel/Material Hoists Construction Code Inspector (Elevator)</p>	<p>Inspect structural for shaft, rails, pit, and machine room. Contact Construction Engineering Supervisor for complete list of specific requirements.</p> <p>Requires permit and plan approval</p>	<p>Elevator Plan shaft shall be submitted for approval Inspect thirty (30) days prior to schedule occupancy. Prior to using see County Policy.</p> <p>Before building framing inspection is called.</p> <p>Before the use of Personnel/ Material Hoists</p>

Arlington County Pre-Construction Manual

INSPECTION	MUST BE MADE AFTER THE FOLLOWING IS COMPLETE	MUST BE MADE BEFORE ANY OF THE FOLLOWING IS STARTED
<p>10. Plumbing/Gas Close-In</p> <p>Waste Pipe and Vents Inspection</p> <p>Water Pipe Inspection and Inside Water Pipe to Fire Pump Plumbing Inspector 703-228-3800</p>	<p>After all waste vents, gas piping, and water pipe that will be enclosed in a wall are installed and tested.</p> <p>All piping must be pressured tested. The test must be witnessed and approved by an inspector</p>	<p>Before drywall insulation is installed.</p>
<p>11. Electrical Service</p> <p>Construction Code Inspector (Electrical) 703-228-3800</p>	<p>After building is watertight.</p> <p>The service must be readily accessible and main service entrance cable must be installed in the panel.</p>	<p>Before the electrical utility provides electric power.</p>
<p>12. Electrical Close-In Inspection</p> <p>Construction Code Inspector (Electrical) 703-228-3800</p>	<p>After all initial wiring is complete.</p> <p>All outlet boxes must be wired and left open.</p> <p>All ground rods must be driven and bonding jumpers installed.</p> <p>Grounds must be made and crimped in boxes.</p>	<p>Before drywall or insulation is installed.</p>
<p>13. Mechanical Close-In Inspections</p> <p>Construction Code Inspector (Mechanical) 703-228-3800</p>	<p>After all duct work is installed</p> <p>Furnace, heat pump or air conditioning unit does not have to be in place.</p>	<p>Before drywall is installed</p>
<p>14. Framing Inspections</p> <p>Construction Code Inspector (Building) 703-228-3800</p>	<p>After all plates are installed and bolted to the foundation walls.</p> <p>After all walls and chases are fire stopped.</p> <p>After all stairways are in place and secured</p> <p>After all sub flooring is installed.</p>	<p>Before drywall is installed.</p>

Arlington County Pre-Construction Manual

INSPECTION	MUST BE MADE AFTER THE FOLLOWING IS COMPLETE	MUST BE MADE BEFORE ANY OF THE FOLLOWING IS STARTED
<p>14. Framing Inspections (continued)</p> <p>Elevator Inspectors NEIS (3dr Party) 1-800-886-6347</p> <p>Fire Protection Inspector 703-228-3800</p>	<p>After the building is weather tight. Both the exterior sheathing and the room must be complete.</p> <p>After electrical, mechanical and plumbing close-in inspections are approved.</p> <p>After check of elevator machine room.</p> <p>Check structural for elevator installation. Contact Elevator Inspector for approval of shop drawings for elevator cab.</p> <p>Contact Fire Protection Inspector for check of Fire Control Room and approval of sprinkler plans and installation.</p>	<p>Before drywall is installed and after framing inspection.</p> <p>Shall submit sprinkler and Fire Protection equipment plans for approval to Inspection Services Division for review by Fire Protection Engineer.</p>
<p>15. Final Electrical Inspection</p> <p>Construction Code Inspector (Building) 703-228-3800</p>	<p>After all appliances, fixtures, outlets, panels' switches, etc...are installed.</p> <p>After all electrical wiring is complete</p> <p>After emergency generator installed.</p>	<p>Before any equipment, appliance outlets, panel switches, etc... are used.</p> <p>Before final building inspections.</p>
<p>16. Final Plumbing/Gas Inspection</p> <p>Construction Code Inspector (Building) 703-228-3800</p>	<p>After all walls and floors are complete.</p> <p>After all plumbing fixtures and piping are complete and operating properly.</p> <p>After all roughed in plumbing fixtures are capped.</p> <p>Check handicapped requirements.</p>	<p>Before final building inspections.</p>
<p>17. Final Mechanical</p> <p>Construction Code Inspector (Building) 703-228-3800</p>	<p>After all heating, ventilating and air conditioning units/systems are installed and operating properly.</p> <p>After all attics, ducts, basement and craw space insulation is installed.</p>	<p>Before final building inspection.</p>

Arlington County Pre-Construction Manual

INSPECTION	MUST BE MADE AFTER THE FOLLOWING IS COMPLETE	MUST BE MADE BEFORE ANY OF THE FOLLOWING IS STARTED
<p>18. Final Building, Fire, Elevator 703-228-3800</p> <p>Construction Code Inspector 703-228-3800</p> <p>Elevator Inspector NEIS-1800-886-6347</p> <p>Fire Protection Inspector 703-228-3800</p>	<p>After all applicable work on the approved plans is complete</p> <p>The structure must be ready for use and occupancy.</p> <p>Check handicapped requirements.</p> <p>Check fire suppression system, fire pump, egress, lights, and alarms.</p> <p>After fire hydrants are operative.</p> <p>Check stairway pressurization, smoke removal systems under emergency power.</p> <p>Check elevators operation and firemen's service.</p>	<p>Before core and shell or tenant Certificate of occupancy Permits are obtained.</p> <p>Before moving into the structure and/or tenant spaces.</p>
<p>19. Master Certificate of Occupancy</p> <p>Construction Code Inspector (Building) 703-228-3800</p> <p>Environmental Services 703-228-3629</p>	<p>After the structure has passed all required final inspection approvals building, electrical, fire protection, mechanical, plumbing, Environmental Services and Zoning.</p> <p>After the lot is graded, sodding or seeding and landscaping is completed (exception during winger season).</p> <p>After all curb, gutter and sidewalks and trails are complete.</p> <p>After streets and driveways are complete except for a final surface (exception during winter season).</p> <p>After all storm and sanitary sewers serving the lots are complete.</p> <p>After all street name signs are installed.</p> <p>After all site plan conditions are met.</p>	<p>Before release of the Public Works Bond.</p> <p>After all, tenant CO's are issued.</p>

Arlington County Pre-Construction Manual

A Master Certificate of Occupancy permit is required to be filed along with a Certificate of Occupancy for the core and shell. Certificate of Occupancy for tenant spaces is required as they are occupied. The Certificate of Occupancy for the core and shell is released upon approval for the common areas. The Master Certificate of Occupancy is released only after all agencies have approved the project, release of public bonds and compliance with all site plan conditions.

CONSTRUCTION SITE TRASH AND DEBRIS REMOVAL

The Department of Environmental Services, Arlington County, enforces the Refuse Ordinance, Chapter 10, Section 10-23.

The ordinance requires construction site to have refuse containers for deposit of workman's trash, as well as regular and routine policing of the site for trash and debris to be placed in refuse container and/or a dumpster with regular disposal on an "as necessary basis."

The enforcement of the new ordinance is to be by the Department of Environmental Services. They will have an inspector checking construction sites and will advise you whenever it is determined that you need to undertake the necessary cleanup activities to be in compliance with the ordinance. Inspection Services staff will also remind you to clean up sloppy construction sites and the adjacent properties of trash and debris associated with your project.

It is our hope and anticipation that you will provide your complete cooperation in complying with the refuse ordinance as you do now in noise, erosion and siltation control measures imposed upon you by other County Ordinances.

MUD AND DUST ON STREETS AND STREET/LANE CLOSINGS

EROSION AND SEDIMENTATION CONTROL

The Department of Environmental Services requires you to have in place erosion and siltation controls as approved by the site engineering plan. You shall maintain the control system throughout the project. Enforcement is by the Department of Environmental Services and Inspection Services will remind you of any problems.

Developers/contractors are required to provide necessary controls to prevent mud and dust from accumulating on streets.

All truck exits must be provided with wash racks or surge stone. Laborers with shovels, hoses and brooms shall be stationed at the exits to remove dirt and dust from vehicles before they enter streets. Where excessive accumulations of dust and mud accumulate in streets, either wash trucks and/or broom vehicles shall be provided to clean streets.

Water supply for wash racks may be from an abandoned meter rack where available or upon applying for a temporary meter with the Water-Sewer Division (Department of Environmental Services).

Where it is necessary to close sidewalks or a street lane, contact Inspection Service Division to arrange for a meeting. Upon submission of a plan outlining the necessary details. These requests will be

Arlington County Pre-Construction Manual

reviewed for approval with Traffic Engineering and Environmental Services to determine the necessary rearrangements of pedestrian and vehicle traffic.

USE OF PUBLIC RIGHT-OF-WAY

You are advised that separate permits are required for use of the public right-of-way for construction fences, sidewalk sheds, trailers and storage. The Department of Environmental Services – Traffic Engineering Division shall make the determination if such public space is available for you use for any of these purposes, and if they are available, issue such permits.

PROTECTION OF PEDESTRIANS

Protection required. Pedestrians shall be protected during construction, remodeling and demolition activities as required by the International Building Code.

USE OF A SPACE AS A CONSTRUCTION OFFICE AT BUILDING STILL UNDER CONSTRUCTION

No space shall be utilized as a construction office for building under construction before all structural element has been erected and the final certification letter from SIER and SER as per the special inspection program has been submitted and approved by Arlington County.

APPENDIX A

Statement of special inspection

Arlington County Pre-Construction Manual



**ARLINGTON COUNTY, VIRGINIA
INSPECTION SERVICES DIVISION
STATEMENT OF SPECIAL INSPECTION**

Project Name: _____

Project Address: _____

Permit Number: (A/P): _____

Permit Applicant: _____ Phone: () _____

Applicant's Address: _____

Owner: _____ Phone: () _____

Owner's Address: _____

Email: _____

Structural Engineer of Record (SER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Geotechnical Engineer of Record (GER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Special Inspection Engineer of Record (SIER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Testing Agency Engineer (if different from SIER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Precast Concrete Engineer of Record (PER): _____

Address: _____

License: _____ Phone: () _____ email: _____

General Contractor (GC): _____

Address: _____

License: _____ Phone: () _____ email: _____

Arlington County Pre-Construction Manual

VERIFICATION AND INSPECTION SCHEDULE FOR STRUCTURAL STEEL

Inspection of Welding	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER & SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Inspection Task Prior to Welding						
Welding procedure specification (WPSs) available	X	-		X	-	
Manufacturer's certificate of welding consumable available	X	-		X	-	
Material identification	-	X		-	X	
Welder identification system	-	X		-	X	
Fit-up of groove welds (include joint geometry) <ul style="list-style-type: none"> • Joint preparation • Dimensions (alignment, root opening, roof face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable) 	-	X		-	X	
Configuration and finish of access holes	-	X		-	X	
Fit-up of fillet welds <ul style="list-style-type: none"> • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) 	-	X		-	X	
Check welding equipment	-	X		-	-	
Inspection Task During Welding						
Use of qualified welders	-	X		-	X	
Control and handling of welding consumables <ul style="list-style-type: none"> • Packaging • Exposure control 	-	X		-	X	
No welding over cracked tack welds	-	X		-	X	
Environmental conditions <ul style="list-style-type: none"> • Wind speed within limits • Precipitation and temperature 	-	X		-	X	

Arlington County Pre-Construction Manual

WPS followed <ul style="list-style-type: none"> • Setting on welding equipment • Travel speed • Selected welding materials • Shielding gas type/flow rate • Preheated applied • Interpass temperature maintained (min/max) • Proper position (F, V, H, OH) 	-	X		-	X	
Welding techniques <ul style="list-style-type: none"> • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirement 	-	X		-	X	
Inspection Task After Welding						
Welds Cleaned	-	X		-	X	
Size, length and location of welds	X	-		X	-	
Welds meet visual acceptance criteria <ul style="list-style-type: none"> • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld Size • Undercut • Proosity 	X	-		X	-	
Arc strikes	X	-		X	-	
K-area	X	-		X	-	
Backing removed and weld tabs removed (if required)	X	-		X	-	
Repair activities	X	-		X	-	
Document acceptance or rejection of welded joint or member.	X	-		X	-	

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

Inspection of High-Strength Bolting	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER& SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Inspection Task Prior to Bolting						
Manufacturer's certification available for fastener material	-	X		X	-	
Fasteners marked in according with ASTM requirement	-	X		-	X	
Proper fasteners selected for the joint detail(grade, type, bolt length if threads are to be excluded from shear plane)	-	X		-	X	
Proper bolting procedure selected for joint detail	-	X		-	X	
Connecting elements, including the appropriate faying surface condition and the preparation, if specified, meet applicable requirement.	-	X		-	X	
Pre-installation verification testing by installation personal observed and documented for fastener assemblies and methods used.	X	-		-	X	
Proper storage provide for bolts, nuts, washers and other fastener components	-	X		-	X	
Inspection Task During Bolting						
Fasteners assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	-	X		-	X	
Joint brought to the snug-tight condition prior to the pretensioning operation	-	X		-	X	
Fasteners component not turned by the wrench prevented from rotating	-	X		-	X	
Fasteners are pretension in according with the RCSC Specification, progressing systematically from the most rigid point toward the free edges.	-	X		-	X	
Inspection Task After Bolting						
Document acceptance or rejection of bolted connection	-	X		-	X	

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

Inspection of Steel Element of Composite Construction Prior to Concrete Placement	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER& SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Placement and installation of steel deck	X	-		X	-	
Placement and installation of steel headed stud anchors	X	-		X	-	
Document acceptance or rejection of steel element	X	-		X	-	

VERIFICATION AND INSPECTION SCHEDULE OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

Non- Structural Steel	Continuous	Periodic	Referenced Standard	SIER& SER- Initial
1- Material verification of cold-formed steel deck:				
a. Identification marking to conform to ASTM standards specified in the approved construction documents.	-	X	Applicable ASTM material standards	
b. Manufacturer's certificate test reports	-	X	-	
2- Inspection of welding:				
a..Cold form steel deck:				
1) Floor and roof deck weld.	-	X	AWS D1.3	
b.reinforcement steel:	-			
1). Verification of weldability of reinforcement steel other than ASTM A 706		X	AWS D1.4 ACI 318: Section 3.5.2	
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete shear reinforcement	X	-		
3). Shear reinforcement	X			
4). Other reinforcement steel	-	X		

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

VERIFICATION AND INSPECTION SCHEDULE FOR STRUCTURAL STEEL *Seismic requirement*

Inspection of Welding	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER& SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Inspection Task Prior to Welding						
Material identification	-	X		-	X	
Welder identification system	-	X		-	X	
Fit-up of groove welds (include joint geometry) <ul style="list-style-type: none"> • Joint preparation • Dimensions (alignment, root opening, roof face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable) 	-	X		-	X	
Configuration and finish of access holes	-	X		-	X	
Fit-up of fillet welds <ul style="list-style-type: none"> • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) 	-	X		-	X	
Inspection Task During Welding						
WPS followed <ul style="list-style-type: none"> • Setting on welding equipment • Travel speed • Selected welding materials • Shielding gas type/flow rate • Preheated applied • Interpass temperature maintained (min/max) • Proper position (F, V, H, OH) • Intermix of filler metals avoided unless approved 	-	X		-	X	
Use of qualified welders	-	X		-	X	
Control and handling of welding consumables <ul style="list-style-type: none"> • Packaging • Exposure control 	-	X		-	X	

Arlington County Pre-Construction Manual

Environmental conditions <ul style="list-style-type: none"> • Wind speed within limits • Precipitation and temperature 	-	X		-	X	
Welding techniques <ul style="list-style-type: none"> • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirement 	-	X		-	X	
No welding over cracked tack welds	-	X		-	X	
Inspection Task After Welding						
Welds Cleaned	-	X		-	X	
Size, length and location of welds	X	-		X	-	
Welds meet visual acceptance criteria <ul style="list-style-type: none"> • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld Size • Undercut • Proosity 	X (DR)	-		X (DR)	-	
Placement of reinforcing or contouring fillet welds (if require)	X (DR)	-		X (DR)	-	
Backing removed and weld tabs removed (if required)	X (DR)	-		X (DR)	-	
Repair activities	X (DR)	-		X (DR)	-	

(DR) Documentation Required

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

Inspection of High Strength Bolting

Inspection of High-Strength Bolting	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER& SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Inspection Task Prior to Bolting						
Manufacturer's certification available for fastener material	X			X	-	
Fasteners marked in according with ASTM requirement	-	X		-	X	
Proper fasteners selected for the joint detail(grade, type, bolt length if threads are to be excluded from shear plane)	-	X		-	X	
Proper bolting procedure selected for joint detail	-	X		-	X	
Connecting elements, including the appropriate faying surface condition and the preparation, if specified, meet applicable requirement.	-	X		-	X	
Pre-installation verification testing by installation personal observed and documented for fastener assemblies and methods used.		X		-	X	
Proper storage provide for bolts, nuts, washers and other fastener components	-	X		-	X	
Inspection Task During Bolting						
Fasteners assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	-	X		-	X	
Joint brought to the snug-tight condition prior to the pretensioning operation	-	X		-	X	
Fasteners component not turned by the wrench prevented from rotating	-	X		-	X	
Fasteners are pretension in according with the RCSC Specification, progressing systematically from the most rigid point toward the free edges.	-	X		-	X	
Inspection Task After Bolting						
Document acceptance or rejection of bolted connection	-	X		-	X	

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

Inspection of Steel Element of Composite Construction Prior to Concrete Placement	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER& SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Placement and installation of steel deck	X	-		X	-	
Placement and installation of steel headed stud anchors	X	-		X	-	
Document acceptance or rejection of steel element	X	-		X	-	

Inspection of High Strength Bolting *with Seismic Requirement*

Inspection of High-Strength Bolting	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER& SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Inspection Task Prior to Bolting						
Proper bolting procedure selected for joint detail	-	X		-	X	
Connecting elements, including the appropriate faying surface condition and the preparation, if specified, meet applicable requirement.	-	X		-	X	
Pre-Installation verification testing by installation personnel observed for fastener assemblies and methods used		X (DR)		-	X (DR)	
Proper storage provide for bolts, nuts, washers and other fastener components	-	X		-	X	
Inspection Task During Bolting						
Fasteners assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	-	X		-	X	
Joint brought to the snug-tight condition prior to the pretensioning operation	-	X		-	X	
Fasteners component not turned by the wrench prevented from rotating	-	X		-	X	
Bolts are pretension progressing systematically from the most rigid post toward the free edges	-	X		-	X	
Inspection Task After Bolting						
Document acceptance or rejection of bolted connection	-	X (DR)		-	X (DR)	

Arlington County Pre-Construction Manual

Inspection of Steel Element of Composite Construction Prior to Concrete Placement	QC (at Mill)		SIER/ SER- Initial	QA (on job site)		SIER& SER- Initial
	Continuous	Periodic		Continuous	Periodic	
Placement and installation of steel deck	X	-		X	-	
Placement and installation of steel headed stud anchors	X	-		X	-	
Document acceptance or rejection of steel element	X	-		X	-	

Inspection of Cold-Form Steel Construction with Seismic Requirement

Inspection After Welding	Doc Require	QA		SIER & SER- Initial
		Continuous	Periodic	
Verify welds meet visual acceptance criteria <ul style="list-style-type: none"> • No Cracks • Fusion at toes of weld passes • Crater cross section • Minimum reinforcement of 1/32 inn. For square groove, arc spot and arc seam welds • Undercut < L/8 • Porosity 	DR	X	-	
Verify submittal document requirement met for weld: <ul style="list-style-type: none"> • Location • Size • Length 	DR	X	-	
Document acceptance or rejection of steel element		X	-	

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

VERIFICATION AND INSPECTION SCHEDULE OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

Non- Structural Steel	Continuous	Periodic	Referenced Standard	SIER& SER-Initial
1- Material verification of cold-formed steel deck:				
a. Identification marking to conform to ASTM standards specified in the approved construction documents.	-	X	Applicable ASTM material standards	
b. Manufacturer's certificate test reports	-	X	-	
2- Inspection of welding:				
a..Cold form steel deck:				
1) Floor and roof deck weld.	-	X	AWS D1.3	
b.reinforcement steel:	-			
1). Verification of weldability of reinforcement steel other than ASTM A 706		X	AWS D1.4 ACI 318: Section 3.5.2	
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete shear reinforcement	X	-		
3). Shear reinforcement	X			
4). Other reinforcement steel	-	X		

INSPECTION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

Inspection of open-web steel Joist and girders	Continuous	Periodic	Referenced Standard	SIER& SER-Initial
a. End connection welding or bolted		X	SJI specifications Sec 2207.1	
b. Bridging-Horizontal original (Standard bridging& bridging that differs from the SJI specification listed in section 2207.1)	-	X	SJI specifications L Sec 2207.1	

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

INSPECTION SCHEDULE OF CONCRETE CONSTRUCTION

Concrete	Continuous	Periodic	Referenced Standard	IBC reference	SIER& SER-Initial
1. Inspect of reinforcing steel, including pre-stressing tendons, and placement.	-	X	ACI 318CH.20,25.2,25 .3,26.6.1-26.6.3	1908.4	
2. Inspection of bar welding a) Verify weldability of reinforcing bars other than ASTM A706; b) Inspect single-pass fillet welds, maximum 5/16"; and c) Inspect all other welds	-	-	AWS D1.4 ACI 318:26.6.4	-	
3. Inspect of anchors cast in in concrete		X	ACI 318:17.8.2	-	
4. Inspection anchors post- installed in hardened concrete members. a) Adhesive anchors installed in horizontally or upwardly inclined orientation to resist sustained tension loads. b) Mechanical anchors and adhesive anchors not defined in 4.a.	-	X	ACI 318:17.8.2.4 ACI318:17.8.2		
5. Verifying use of require design mix.	-	X	ACI 318: Ch.19,26.4.3, 26.4.4	1904.1., 1904.2, 1908.2, 1908.3	
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content test, and determine the temperature of the concrete.	X	-	ASTM C 172 ASTM C 31 ACI 318:26.4, 26.12	1908.10	
7. Inspect concrete and shotcrete placement for proper application techniques	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8	
8. Verify maintenance of specified curing temperature and techniques.	-	X	ACI 318:26.5.3- 26.5.5	1908.9	
9. Inspect prestressed concrete for: a. Application of prestressing forces; and b. Grouting of bonded prestressing tendons	X X	- -	ACI 318: 26.10	-	
10. Inspect erection of precast concrete members.	-	X	ACI 318: Ch.26.8	-	
11. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	-	X	ACI 318:26.11.2	-	
12. Inspect formwork for shape, location, and dimension of the concrete member being formed, shoring & reshoring	-	X	ACI 318:26.10.1(b)	-	

Arlington County Pre-Construction Manual

--	--	--	--	--	--

Owner Signature:

SER Signature:

SIER Signature:

INSPECTION SCHEDULE OF MASONRY CONSTRUCTION

Masonry Level 1	Continuous	Periodic	TMS 402/ACI 530/ACSE 5	TMS 602/ACI 530.1/ASCE 6	SIER & SER- Initial
1. Verify compliance with approved submittals	-	X	-	Art. 1.5	
2. Verification of <i>f_m</i> and <i>f_{AAC}</i> prior to construction except where specifically exempted by this code.	-	X	-	Art. 1.4B	
3. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	X	-	-	Art. 1.5B.1.b.3	
4. As masonry construction begins, verify that the following are in compliance:					
a. Proportions of site-prepared mortar.	-	X	-	Art. 2.1, 2.6A	
b. Construction of mortar joints.		X	-	Art.3.3B	
c. Location of reinforcement, connectors, prestressing tendons and anchorages.		X	-	Art.3.4, 3.6A	
d. Prestressing technique.		X	-	Art. 3.6B	
e. Grade and size of prestressing tendons and anchorages.		X		Art.2.4B,2.4H	
f. Properties of thin-bed mortar for ACC masonry	For 1 st 5000 SQF	After the 1 st 5000 SQF	-	Art.2.1 C	
5. Verify during construction:					
a. Size and location of structural elements.	-	X	-	Art .3.3F	
b. Typed, size and location of anchors, including other detail of anchorage of masonry to structural members, frames to other construction.	-	X	Sec. 1.16.4.3,1.17.1	-	
c. Welding of reinforcing bars	X		Sec.2.1.7.7.2, 3.3.34(c) 8.3.3.4(b)		

Arlington County Pre-Construction Manual

d. Preparation, construction and protection of masonry during cold weather (temperature below 40F) or hot weather (temperature above 90F).	-	X	-	Art. 1.8C,1.8D	
e. Application and measurement of prestressing force.	X	-	-	Art. 3.6 B	
f. Placement of grout and prestressing grout for bonded tendons is in compliance.	X	-	-	Art. 3.5, 3.6 C	
g. Placement of AAC masonry units and construction of thin-bed mortar joints	For 1 st 5000 SQF	After the 1 st 5000 SQF		Art. 3.3 B.8	
6. Observe preparation of grout specimens, mortar specimens and/or prisms.	-	X	-	Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4	

Masonry Level 2	Continuous	Periodic	TMS 402/ACI 530/ACSE 5	TMS 602/ACI 530.1/ASCE 6	SIER & SER- Initial
1. Verify compliance with approved submittals	-	X	-	Art. 1.5	
2. Verification of f_m and f_{AAC} prior to construction for every 5,000 square feet during construction.	-	X	-	Art. 1.4B	
3. Verification of proportions of material in premixed or preblended mortar and grout as delivered to the site.	-	X	-	Art. 1.5B	
4. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	X	-	-	Art. 1.5B.1.b.3	
5. Verify the following are in compliance					
a. Proportions of site-mix mortar, grout and prestressing grout for bonded tendons.	-	X	-	Art. 2.1, 2.6 A, 2.6 B, 2.6 C, 2.4 G.1.b	
b. Placement of masonry units and construction of mortar joints.	-	X	-	Art.3.3B	
c. Placement of reinforcement, connectors, prestressing tendons and anchorages.	-	X	Sec.1.16	Art.3.2 E, 3.4, 3.6 A	
d. Grout space prior to grout.	X	-	-	Art. 3.2D, 3.2 F	
e. Placement of grout and prestressing grout for bonded tendons	X	-	-	Art.3.5, 3.6 C	
f. Size and location of structural elements.	-	X		Art.3.3F	
g. Type, size and location of anchors, including other details of anchorage of	X	-	Sec. 1.2.2(e),1. 16.1		

Arlington County Pre-Construction Manual

masonry to structural members, frames or others construction.					
h. Welding of reinforcing bars.	X	-	Sec. 2.1.9.7.2, 3.3.3.4 (b)	-	
i. Preparation, construction and protection of masonry during cold weather (temperature below 40F) or hot weather (temperature above 90F).	-	X	-	Art. 1.8C, 1.8D	
j. Application and measurement of prestressing force.	X	-	-	Art. 3.6B	
k. Placement of AAC masonry units and construction of thin-bed mortar joints	X	-	-	Art. 3.3 B.8	
l. Properties of thin-bed mortar for AAC masonry	X	-	-	Art. 3.3 B.8	
6. Observe preparation of grout specimens, mortar specimens, and/or prisms	X	-	-	Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4	

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

Soil	Continuous	Periodic	SIER& SER- Initial
1. Verify materials below shallow foundation are adequate to achieve the design bearing capacity.	-	X	
2. Verify excavations are extended to proper depth and have reached proper material.	-	X	
3. Perform classification and testing of compacted fill material.	-	X	
4. Verify use of proper material, densities and lift thicknesses during placement and compaction of compacted fill.	X	-	
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	-	X	

Driven Deep Foundation Elements	Continuous	Periodic	SIER& SER Initial
1. Verify element material, sizes and lengths comply with the requirements.	X		
2. Determine capacities of test elements and conduct additional load tests, as required.	X		
3. Observe driving operations and maintain complete and accurate records for each element.	X		
4. Verify placement location and plumbness, confirm type and size of hammer, record number of blow per foot of penetration, determine require penetration to achieve design capacity, record tip and butt elevation and document any damage to foundation element.	X		
5. For steel elements, perform additional inspections in accordance with section 1705.2.	-		
6. For concrete element and concrete- filled elements, perform additional inspection in according with section 1705.3.	-		
7. For specially elements, perform additional inspection as determined by the registered design professional in responsible.	-		

Cat-in-place deep foundation elements	Continuous	Periodic	SIER/ SER Initial
8. Inspect drilling operations and maintain complete and accurate records for each element	X	-	
9. Verify placement location and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.	X	-	
10. For concrete elements, perform additional inspection in accordance with section 1705.3.	-	-	

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

Different Scope of Special Inspection.	Continuous	Periodic	SIER & SER Initial
Wall Panels & Veneers	-	X	
EIFS	-	X	
Smoke Control System	-	X	
Fabricators	-	X	
Helical piers	X	-	
Segmental Retaining Wall a. Reinforced geogrid installation b. Soil compaction c. Segmental wall installation	X	-	
Spray Fire-Resistant Materials a. Structural member surface conditions b. Application c. Thickness	-	X	
Mastic & Intumescent fire-resistant coating	-	X	
Carbon Fiber (FRD) a. FRD installation b. Pull out test c. Fire resistance membrane application	-	X	
Pre-Cast Concrete	-	X	
Others inspection			

Owner Signature:

SER Signature:

SIER Signature:

Arlington County Pre-Construction Manual

This statement of special inspection is submitted as a condition for permit. It includes a Schedule of Special Inspections applicable to this project. The SI shall keep records of specified inspections and testing. The SI shall furnish specified inspection and test reports to the County building official, and to the registered design professionals of record, as appropriate. All discrepancies shall be brought to the attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the code official and to the registered design professionals of record, as appropriate. Interim reports shall be submitted as required by the special inspection program manual. A Final Report of Special Inspections documenting completion of all required special inspections and correction of documented discrepancies shall be submitted prior to the issuance of an occupancy permit. By signing the SSI, you also affirm that you understand and will comply with the County requirements for Special inspections as outlined in the “SSI”, “Special Inspection Program Manual”, and the “Building Code”.

Owner:

Type or print name Date

Signature

Structural Engineer of Record (SER):

Type or print name Date

Signature

Geotechnical Engineer of Record (GER):

Type or print name Date

Signature

Precast Concrete Engineer of Record (PER):

Type or print name Date

Signature

Special Inspection Engineer of Record (SIER):

Type or print name Date

Signature

Arlington County Pre-Construction Manual

Testing Agency Engineer of Record (if different from SIER):

Type or print name

Date

Signature

General Contractor (GC):

Type or print name

Date

Signature

County Code Official's Acceptance:

Type or print name

Date

Signature

APPENDIX B

Statement of special inspection for sheeting and shoring



**ARLINGTON COUNTY, VIRGINIA
INSPECTION SERVICES DIVISION
STATEMENT OF SPECIAL INSPECTION SHEETING & SHORING**

Project Name: _____

Project Address: _____

Permit Number: (A/P): _____

Permit Applicant: _____ Phone: () _____

Applicant's Address: _____

Owner: _____ Phone: () _____

Owner's Address: _____

Email: _____

Structural Engineer of Record (SER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Geotechnical Engineer of Record (GER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Special Inspection Engineer of Record (SIER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Testing Agency Engineer (if different from SIER): _____

Address: _____

License: _____ Phone: () _____ email: _____

Precast Concrete Engineer of Record (PER): _____

Address: _____

License: _____ Phone: () _____ email: _____

General Contractor (GC): _____

Address: _____

License: _____ Phone: () _____ email: _____

Arlington County Pre-Construction Manual

VERIFICATION AND INSPECTION SCHEDULE

SHEETING & SHORING	EXTENT OF SERVICES	SIER&SER INITIAL
1. Pile/Soldier beam Installation <ul style="list-style-type: none"> a. Steel used for soldier beams-Mill certifications specified b. Drilling soldier piles c. Pile size, location and plumbness 	<ul style="list-style-type: none"> a. Verify material conforms to Construction documents. b. Inspect depth of bottom of hole as well as backfilling operation. c. Verify correct material is used per the construction documents & members are placed in the correct locations & their orientation and plumbness are correct 	
2. Lagging <ul style="list-style-type: none"> a. Material 	<ul style="list-style-type: none"> a. Visually inspect lagging for size, location & condition 	
3. Tieback installation <ul style="list-style-type: none"> a. Drilling b. Material c. Grout 	<ul style="list-style-type: none"> a. visually inspects tieback installation to verify size, length, number of strand, elevation & angle of declination. b. Verify tieback free, bond, and tail lengths conform to the construction documents. c. Inspect grouting of tieback and take samples if required by specification. 	
4. Tieback Testing <ul style="list-style-type: none"> a. Hydraulic Jacks b. Testing Procedures c. Lock off d. Test Sheets 	<ul style="list-style-type: none"> a. Verify all hydraulic jacks have current calibrations and that the gauge is calibrated in the appropriate increments. b. Continuously inspect the contractor's proof or performance test. c. Continuously verify that the lock off loads are consistent with the construction documents. d. Review all tieback proof and performance test sheets. 	

Arlington County Pre-Construction Manual

This statement of special inspection is submitted as a condition for permit. It includes a Schedule of Special Inspections applicable to this project. The SI shall keep records of specified inspections and testing. The SI shall furnish specified inspection and test reports to the County building official, and to the registered design professionals of record, as appropriate. All discrepancies shall be brought to the attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the code official and to the registered design professionals of record, as appropriate. Interim reports shall be submitted as required by the special inspection program manual. A Final Report of Special Inspections documenting completion of all required special inspections and correction of documented discrepancies shall be submitted prior to the issuance of an occupancy permit. By signing the SSI, you also affirm that you understand and will comply with the County requirements for Special inspections as outlined in the “SSI”, “Special Inspection Program Manual”, and the “Building Code”.

Owner:

Type or print name Date

Signature

Structural Engineer of Record (SER):

Type or print name Date

Signature

Geotechnical Engineer of Record (GER):

Type or print name Date

Signature

Special Inspection Engineer of Record (SIER):

Type or print name Date

Signature

Testing Agency Engineer of Record (if different from SIER):

Type or print name Date

Signature

Arlington County Pre-Construction Manual

General Contractor (GC):

Type or print name

Date

Signature

County Code Official's Acceptance:

Type or print name

Date

Signature

APPENDIX C

- **Approved stamp requirement**
- **Concrete cold weather temp log**
- **Stripping/stressing authorization request**

Arlington County Pre-Construction Manual

APPROVAL FOR GENERAL COMPLIANCE WITH STRUCTURAL CONSTRUCTION DOCUMENTS	
<input type="checkbox"/> APPROVED	Fabrication may proceed as shown.
<input type="checkbox"/> APPROVED AS CORRECTED	Fabrication may proceed as based on corrections indicated.
<input type="checkbox"/> APPROVED AS CORRECTED RESUBMIT FILE COPY	Fabrication may proceed as based on corrections indicated. Correct submission and resubmit for record purpose only
<input type="checkbox"/> DISAPPROVED	Fabrication may not proceed. Correct submission for further review.
<input type="checkbox"/> REVIEWED FOR INFORMATION	Approval not require Accepted for information purposed only.
<p>Approval is for general compliance with the structural contract documents only. This approval assumes no responsibility for dimension, quantities and condition that pertain to fabrication and installation or for processes and Techniques of construction. The Contractor is responsible for coordination of the work of all trades and the performance of this work in a safe and satisfactory manner.</p>	
BY _____ DATE _____	(Company)

<u>APPROVAL FOR DESIGN CONFORMITY</u>		
<input type="checkbox"/> APPROVED	Construction may proceed as shown.	
<input type="checkbox"/> APPROVED AS NOTD	Construction may proceed based on correction indicated.	
<input type="checkbox"/> REVIS AS NOTED & RESUBMIT	Construction may proceed based on correction indicated. Resubmit corrected submission for record purpose	
<input type="checkbox"/> REJECTED) / RESUBMIT AS SPECIFIED	Construction may <u>not</u> proceed. Correct submission for further review.	
<input type="checkbox"/> FURNISH () CORRECTED COPIES	Approval not required. Accepted for information purposed only	
<p>Notations do not authorize changes to contact sum. Submittal was received for design conformity and general conformance to contract document only. The contractor is responsible for confirming and correlating dimensions at job sites for tolerances, clearances, quantities, fabrication processes and techniques of construction, coordination of his work with other trades full compliance with contract document.</p>		
DATE _____	BY _____	(Company)

Arlington County Pre-Construction Manual

APPROVAL FOR DESIGN CONFORMITY

- | | |
|--|---|
| <input type="checkbox"/> APPROVED | Final approval. Fabrication may proceed on work as shown. |
| <input type="checkbox"/> APPROVED AS NOTD | Fabrication may proceed on the basis of correction indicated. |
| <input type="checkbox"/> DISAPPROVED | Fabrication may not proceed. Revision shall be made and Submitted for further check |

Approval is only for conformance with the design concept of the project and compliance with the information given in the contract documents. The contractor is responsible for dimensions to be confirmed and correlated at the job sites, for information that pertains solely to the fabrication processes or to techniques of construction, and for the condition of the work of all trades.

BY _____
DATE _____

(Company)

Arlington County Pre-Construction Manual

Cold Weather Concrete Slab Temperature Log

Pour Date :	Project Name:					Date:	
Start Time:	Pour Section:					Permit #	
Finish Time:	Station # 1	Station # 2	Station # 3	Station # 4	Air temp Under Slab	Ambient Air- temp	Remarks
Day 1	12 a.m.						
	4 a.m.						
	8 a.m.						
	12 p.m.						
	4 p.m.						
	8 p.m.						
Day 2	12 a.m.						
	4 a.m.						
	8 a.m.						
	12 p.m.						
	4 p.m.						
	8 p.m.						
Day 3	12 a.m.						
	4 a.m.						
	8 a.m.						
	12 p.m.						
	4 p.m.						
	8 p.m.						
Day 4	12 a.m.						
	4 a.m.						
	8 a.m.						
	12 p.m.						
	4 p.m.						
	8 p.m.						
Station shall be located at the four corner of the pour near to the edge							

Arlington County Stripping/Stressing Authorization Request

Date: _____

PROJECT DATA:

Permit No. _____ Job No. _____
Name: _____ General Contractor _____
Address: _____ Concrete Contractor _____

POUR DATA:

Mix Designation _____ Strength (psi) _____
Date & Time _____ Volume (cy) _____
Location _____

STRIPPING DATA:

	Design /Required	Actual	Sat./Unsat
Age (days)	_____	_____	_____
Avg Temp	_____	_____	_____
Con Strength (psi)	_____	_____	_____

Note: Stripping can NOT proceed until the tendon elongation are reviewed and approved by the SER

ATTACHMENTS:

- Key Plan
- Concrete strength record
- Stressing Record
- Temperature Log

NOTES: _____

**Special inspection Engineer of record
Signature & Seal**

**Structural engineer of record
signature & Seal**

APPENDIX D

Sample of The Pre-Construction Meeting Minutes

Arlington County Pre-Construction Manual

Project Name:	
Address:	
Meeting Purpose:	<i>Pre-Construction & Special Inspection Meeting</i>
Meeting Date:	
Meeting Time:	
Meeting Location:	<i>Training Room, 10th Floor, 2100 Clarendon Blvd</i>
Meeting Facilitator:	<i>Emad Elmagraby, Field Service Section Chief</i>
Attendees:	<i>Sign Sheet Attached</i>
Minutes Issued By:	<i>Emad Elmagraby</i>

Next Steps: (Task, Assigned to, Checkpoint Date)	Owner	Due Date
<i>Scheduling General Building Inspection once a week</i>	GC	<i>open</i>
<i>Following Minutes shall be forward to appropriate Sub-Contractors when they joint the construction team</i>	GC	<i>open</i>

Decisions Made: (What, Why, Impacts)
<ol style="list-style-type: none"> 1. <i>DAS system</i> <ul style="list-style-type: none"> ○ <i>Inspected by a 3^d party, sign and seal letter shall be submitted</i> 2. <i>Pre-CO meeting</i> <ul style="list-style-type: none"> ○ <i>This meeting shall be schedule prior occupancy</i>

Discussion: (Items/Knowledge Shared)
<p><i>Special inspection Requirement.</i></p> <ul style="list-style-type: none"> • <i>County structural engineer will conduct an un-announce periodic site visits to the project during construction.</i> • <i>SSI and resume for SIER & Field Technician shall be submitted for review</i> • <i>Solider pile and tie back installation & stressing shall be inspected as per SSI</i> • <i>Monitoring of the SOE shall be twice a week till grade level</i> • <i>Copy of the approved concrete mix design sealed by the design engineer and approved by the SER shall be emailed to the County</i> • <i>Waiver letter from SER shall be submitted for non-PT slab</i> • <i>Form Stripping shall be done after the field cured concrete break results reach 75% or 3000 psi minimum. No stripping shall be done prior to that. No early breaks, early stripping, or phone calls are allowed. Any deviation from this and Arlington County will require to approve any future stripping letter in addition to the SER and SIER</i> • <i>PT stripping letter shall be sign and sealed from both SIER, SER</i> • <i>Field Cure Cylinder shall be stored at the same place concrete been pouring.</i> • <i>Low break is a deficiency and shall be add to the No-Compliance list</i> • <i>Change to the structure plans that required revision</i> • <i>Special inspection requirement is covered by IBC chapter 17 and AC special inspection& pre-construction manual</i> • <i>Temperature Loge for cold weather (see AC Manual)</i> • <i>All report shall be submitted within five business days, deficiency reports within three days</i>

Arlington County Pre-Construction Manual

Discussion: (Items/Knowledge Shared)

- Windsor probe test is NOT acceptable by Arlington County, only a core test or a calculation from the SER.
- Definition and inspection for periodic and full time inspection as mention at chapter 17 IBC for Concrete, CMU, stressing cable.... etc.
- Non-Compliance list shall be submitted weekly and all items shall be resolved ASAP
- Water proofing inspection Shall be done by the SIER
- Steel Erector Certification issued by AISC shall be submitted prior installation
- Light gage metal inspection (see building)
- Brick Façade, precast facade inspection y SIER
- Approved shop drawing Shall be sign and sealed by the design engineer and seal stamped approved by the SER (no-exception taken is not acceptable)
- Final report of SIER, SER, PER, GER (AC manual pages 12-16) shall be submit prior to get building final
- Final letter for tower crane shall be submitted ASAP
- Tower Crane; All bolts shall be secured in accordance with manufacturer's project specifications, and shall be inspected 30 days after erection and every 200 working hour thereafter. Results of these inspections shall be sent to the Arlington County Inspection Services Division.
- Tower Crane working condition are restricted to wind speeds up to 45 MPH, if wind speed is anticipated to exceed 45 MPH, the crane must be set for out of services operation and free to weathervane as recommended by the manufacture.
- Carbon Fiber installation shall require a permit, also an approved fire membrane shall be installed to the FRP and permitted as well
- At Extreme weather condition, GC shall adhere to AC requirement

Building Inspection Requirement

- Schedule one general inspection weekly when you start pouring concrete
- The following will require building permits: footing to grade, full building, Tower Crane, Cover walk way, all trailers, construction office at the building, Man and Material hoist (Elevator permit).
- NO Construction above grade is permitted without above grade permit (including rebar and/or form for column or slab).
- Approved plans/revision shall be kept on site
- A pre-Co meeting shall be schedule with ISD prior occupancy
- Wood framing and Cold form steel inspection shall be performed by the county
- Roof and Floor trusses sign and seal drawing shall be submitted for review (for Wood Frame Construction Only)
- Rough in Mechanical shall installed and inspected prior to constructing the associated shaft
- Standpipe shall be installed when the progress of construction not more than 40 feet in height above the lowest level of FD vehicle access, such standpipe shall be extended as construction progress to within one floor of the highest point of construction having secured decking or flooring.
- General inspection shall be schedule prior to constructing any fire rated assembly

Discussion: (Items/Knowledge Shared)

- *Detail for fire rated listed assembly shall be available prior to inspection*

Fire Inspection Requirement

- *The whole system which include Fire alarm, sprinkler systems, elevator, smoke control (if exist) and annunciator panel shall be tested in whole as a complete system, System shall be 100% pretested prior inspection.*
- *Annunciator Panel shall be installed prior to pretesting the whole system.*
- *Sprinkler, elevator, mechanical and fire representative shall be present at the job site during testing of the equipment since it works as an interconnected system, missing any representative will result in canceling and rescheduling the inspection/test.*
- *Fire inspection shall be schedule in advance by phone (703-228-3846).*
- *Permit holder shall be the sole person to schedule inspections.*
- *Fire Alarm Final test shall be inspected with canned smoke and panel must be green.*
- *Fire pump test shall be approved prior to fire alarm inspection.*
- *System shall be pre-tested prior inspection, if you are not ready for inspection then you will be rejected.*
- *Area smoke detector shall have verification.*
- *Duct detector and return air plenum shall not be verified but shall be alarm devices.*
- *Pull station location shall be installed a max of 5' from exit door, the operating handle of the pull station shall not be higher than 48" above finish floor.*
- *Clear part of wall mounted strobe lens shall be installed 80" and 96" above finish floor to bottom of lens.*
- *Manual switches for fan control in fire control room shall override all auto functions.*
- *Tamper switches shall annunciate the exacted location of the valve.*
- *Flow switches shall annunciate all zones they serve and associated floor.*
- *Dry pipe valves shall provide water to inspector test within 60 seconds.*
- *Stair pressure shall be between 0.10 and 0.35 Inches of water during testing, to perform the test GC shall assign personnel to make sure that all stairs doors are closed at all time during testing.*
- *Temporary standpipe & Siamese shall be installed upon framing of the 3rd floor, GC shall schedule a meeting with ISD fire inspector in order to coordinate the location of the Temporary standpipe and the Siamese prior to installation.*
- *All floor designation shall match throughout the building i.e., Elevators, Fire Alarm system, stair signage.*
- *Knox box for high rise building shall be installed next to the exterior door of the fire control room, the box shall contain two keys, one for the fire control room door and the second one for the key box that is located inside the room. The key box shall contain 15 sets of keys for the following: general building master, elevators key, key cards, fire alarm reset key.*

Discussion: (Items/Knowledge Shared)

- *Knox box for Mid-rise building shall be located outside of the main building entry door and shall include 7 sets of keys for the following: general building master, elevators key, key cards, fire alarm reset key.*

Electrical Inspection Requirement

- *DAS system shall be inspected by a 3rd party, a signed and sealed letter shall be submitted prior final inspection (Attached a copy of the certification letter)*
- *Temporary generators shall be permitted and inspected prior using it.*
- *Device extension rings shall be installed in combustible material.*
- *Fire pumps and controllers shall be installed as per manufacturer's instructions and building code (where the cable go? from the top? Bottom? Side?)*
- *Emergency generators shall be installed correctly. (circuit breaker monitoring, circuit breaker labeling, start up and transfer time, day tank power and disconnect, ventilation systems interconnected in enclosed rooms)*
- *Building grounding electrode system shall be installed correctly.*
- *Ceiling grid system shall NOT be used as electrical equipment supports.*
- *Ceiling tiles shall NOT be used for supports of devices.*
- *Load side of transformers shall be bonded correctly.*
- *Boxes for emergency and fire alarm circuits shall be identified and labeled.*
- *Panel schedules shall indicate the locations for loads served.*
- *Transformers shall be secured to the structure.*
- *Emergency and normal power circuits shall be installed in Different raceway.*
- *Required clear working clearance shall be maintained in front of equipment's and VAV's).*
- *Transfer time from normal to emergency power (emergency generator, fire pump and life safty equipment's) should NOT exceed 10 second.*
- *Service shall be inspected prior to Dominion Power energizing it.*
- *Follow Dominion Power manual instruction (Blue Book).*
- *Circuit integrity cable shall be installed as per electrical code and reference standers (Fire rated assembly)*

Pluming Inspection Requirement

- *Swimming Pool installation shall be as per ISPSC*

Mechanical Inspection Requirement

- *Rough in Mechanical shall perform prior to constructing the associated shaft*
- *Grease duct*
- *Plenum ceilings*
- *Equipment*
- *Piping*
- *Fire dampers*

Discussion: (Items/Knowledge Shared)

- Duct
- Site

Energy Inspections

- County energy inspectors will make periodic site visits to inspect the building during various stages of construction
- Contractors shall schedule energy inspection directly with Linda Baskerville (703-475-8541/ 703-228-3991) and/or Mike Hamilton (703-244-0479/703-228-3855)
- Inspection shall be schedule when you reach the following construction milestones dates (inspection criteria are listed in parentheses):
 - When insulation has been installed and is visible for below-grade areas, such as sub-slab insulation (R-values & extent).
 - When windows and doors are on-site but not yet installed (U-factors, SHGC, air infiltration).
 - When the air barrier installation commences and is visible; and completed (air barrier presence & completeness).
 - When the project is ready for the framing inspection and the project has installed air barriers as well as building thermal envelope insulation, including roof insulation (Insul R-values & non-compressed batt & completeness of installation).
 - When ductwork has been installed and is visible (sealing, and insulation R-value and extent where required).
 - When the mechanical equipment is onsite or has been installed (efficiency ratings, or model & serial #)
 - When the light fixtures and bulbs have been installed and are functioning (rough count & wattage compliance).
 - When the occupancy sensors have been installed and are functioning (presence & functional 30 minute test if not commissioned)
 - When the testing and balancing of the project has been completed (commissioning documentation).