

## SECTION 014100 - SPECIAL INSPECTION SERVICES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Special Inspection services.
- B. Certain structural components of the Project will be subject to the requirements for Special Inspections. Special Inspections will be applicable to the following specification sections:
  - 1. Section 031000 Concrete Forming and Accessories
  - 2. Section 032000 Concrete Reinforcing
  - 3. Section 033000 Cast-In-Place Concrete
  - 4. Section 042000 Concrete Unit Masonry
  - 5. Section 051200 Structural Steel Framing
  - 6. Section 052100 Steel Joist Framing
  - 7. Section 053100 Steel Decking
  - 8. Section 078100 Applied Fireproofing
  - 9. Section 078123 Intumescent Fire Protection
  - 10. Section 078413 Penetration Firestopping
  - 11. Section 311000 Site Clearing
  - 12. Section 312000 Earth Moving
  - 13. Section 315000 Excavation Support and Protection
  - 14. Section 233113 Metal Ducts
  - 15. Section 233416 Centrifugal HVAC Fans
- C. The Owner will procure and bear all costs of the Special Inspector and the Independent Testing Laboratory, except as otherwise noted. The Special Inspector will be the manager of the Special Inspection process. The Special Inspector checks the certification of all other inspecting agents required by Special Inspections and coordinates their activities. The Special Inspector carries the responsibility for coordinating Special Inspections. The Statement of Special Inspections will be required by the Building Official as a condition for building permit issuance.
- D. Requirements for Special Inspections are outlined in the Statement and Schedule of Special Inspections included at the end of this section.
  - 1. Specific quality-assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.
- E. Special Inspections are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- F. Related Sections: The following Sections contain requirements that relate to this Section:
1. Division 1 Section "Quality Control" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.

### 1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: Contractor shall provide and include in the Contract Sum, inspections, tests, and other similar quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity.
1. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.
    - a. The Contractor shall correct deficiencies in work that inspections and laboratory test reports have indicated to be not in compliance with requirements.
    - b. The cost of retesting and reinspection construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.
  2. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
    - a. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  3. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:
    - a. Provide access to the Work.
    - b. Furnish incidental labor and facilities necessary to facilitate inspections and tests.

- c. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
- d. Provide and maintain for the sole use of the Special Inspector or Inspectors adequate facilities for safe storage and proper curing of test samples on the Project Site.
- e. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
- f. Provide security and protection of samples and test equipment at the Project Site.
- g. The Contractor shall designate a representative (the superintendent or an assistant to the superintendent) who shall be the direct point-of-contact with the Special Inspector during each phase of the work. Discrepancies noted during the progress of the work will be reported to the Contractor's representative for corrective action. Communications given by the Special Inspector to the Contractor's representative shall be as binding as if given to the Contractor.

B. Special Inspector Responsibilities:

1. The Special Inspector shall coordinate and/or conduct and interpret tests, state in each report whether test specimens comply with requirements, specifically state any deviations therefrom, and record work required and performed to correct deficiencies.
2. The Special Inspector will keep records of all inspection and tests which will be furnished to the Building Official, the Architect, and the Structural Engineer of Record.
3. The Special Inspector shall notify the Architect, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services. All discrepancies will be brought to the immediate attention of the Contractor for correction. If discrepancies are not corrected, the discrepancies will be brought to the attention of the Owner, Building Official, Architect and the Structural Engineer of Record.
4. A final report documenting completion of all required special inspections and corrections of any discrepancies noted will be submitted to the Building Official by the Special Inspector prior to, and as a condition of, issuance of the *Certificate of Use and Occupancy*.
5. The Special Inspector shall not perform any duties of the Contractor.
6. The Special Inspector shall not release, revoke, alter, decrease or increase the Contract Document requirements.

C. Independent Testing Laboratory Responsibilities: The Independent Testing Laboratory engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Architect and the Contractor in performance of the Laboratory's duties. The Laboratory shall provide qualified personnel to perform required inspections and tests.

1. Notify Architect, Construction Manager, Structural Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

5. Shall not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
- D. Coordination: The Contractor and each agency engaged to perform inspection, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

#### 1.4 SUBMITTALS

- A. Within 48 hours of each inspection or test, the Special Inspector and the Independent Testing Laboratory shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Architect and Structural Engineer.
1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
  2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
    - a. Date of issue.
    - b. Project title and number.
    - c. Name, address, and telephone number of testing agency.
    - d. Dates and locations of samples and tests or inspections.
    - e. Names of individuals making the inspection or test.
    - f. Designation of the Work and test method.
    - g. Identification of product and Specification Section.
    - h. Complete inspection or test data.
    - i. Test results and an interpretation of test results.
    - j. Ambient conditions at the time of sample taking and testing.
    - k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
    - l. Name and signature of laboratory inspector.
    - m. Recommendations on retesting.

#### 1.5 QUALITY ASSURANCE

- A. Qualification for Special Inspector: The Special Inspector shall be a Registered Professional Engineer, Licensed in the State of Virginia, experienced in performing special inspections and shall be approved by the Building Official and the Architect. The credentials of all Inspectors and testing technicians shall be provided if requested.
- B. Qualifications for Independent Testing Laboratory: Engage independent inspection and testing laboratories, that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.
2. Each independent Inspection and Testing Agency engaged on the Project shall demonstrate that it has the experience and capability to conduct the required field and laboratory testing without delaying the progress of the work. The minimum requirements shall be as follows:
  - a. Reinforced Concrete testing
    - 1) **ACI-CFTT** *Concrete Field Testing Technician – Grade 1*
    - 2) **ACI-LTT** *Laboratory Testing Technician – Grade 1 or 2 and Strength Testing Technician*
    - 3) **NICET-CT** – *Concrete Technician – Level III*
  - b. Reinforced Concrete Inspection
    - 1) **ACI-CCI** *Concrete Construction Inspector*
    - 2) **ICC-RCSI** *Reinforced Concrete Special Inspector*
  - c. Structural Steel
    - 1) **AWS-CWI** *Certified Welding Inspector*
    - 2) **AWS/AISC-CSI** *Certified Steel Inspector*
    - 3) **ICC-SWSI** *Structural Steel and Welding Inspector*
  - d. Non-Destructive Testing – American Society of Non-Destructive.
  - e. Structural Masonry
    - 1) **ICC-SMSI** *Structural Masonry Special Inspector*
  - f. Spray-Applied Fireproofing
    - 1) **ICC-SFSI** *Spray-Applied Fireproofing Special Inspector*
  - g. Soils Testing
    - 1) **NICET-ST** - *Soils Technician Level II*
    - 2) **NICET-GET** – *Geotechnical Engineering Technician Level II*
- B. Pre-Construction Conference – Prior to the start of project construction, the Special Inspector and/or Owner’s Project Manager shall conduct a Pre-Construction Conference to discuss the requirements for Special Inspections as well as the Administrative Procedures to be followed during the course of the project. Protocols for notification, documentation, and individual responsibilities shall be reviewed. Attendees shall include, but are not limited to:
  1. Owner
  2. Owner’s Project Manager
  3. Owner’s Project Inspector
  4. Owner’s Independent Testing Agency
  5. Architect
  6. Structural Engineer
  7. Contractor’s Project Manager
  8. Contractor’s Superintendent

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.
- C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 014100