

**STATE OF NORTH CAROLINA**  
**DEPARTMENT OF ADMINISTRATION**  
**STATE CONSTRUCTION OFFICE**



**SPECIAL INSPECTIONS GUIDELINES**

**Last revised: February 2013**

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## Appendix A – Special Inspection Forms

(See SCO Website: <http://www.nc-sco.com/specialinspections.aspx> )

- Statement of Special Inspections
- Contractor’s Statement of Responsibility
- Special Inspection Daily Report
- Discrepancy Notice
- Discrepancy Notice and Resolution Log

# CHAPTER 1

## INTRODUCTION

These guidelines are offered to assist the design community and owning agencies in understanding and implementing special inspections.

The 2002 NC Building Code (2000 International Building Code with North Carolina Amendments) became effective in January 2002. After a twelve-month transition period, the 2002 NC Code's use became mandatory in January 2003.

In January 2003, the State Construction Office exercised its discretion (then provided in Section 1704.1) to require Special Inspections, per NC Code Chapter 17, for most State Capital Improvement projects.

The SCO "Special Inspections Guidelines" were first published in May 2004.

The 2006 NC Building Code (2003 International Building Code with North Carolina Amendments) was effective on July 1, 2007 and its use became mandatory on January 1, 2007. The 2006 NC Code was little changed from the 2002 NC Code with respect to Chapter 17.

The 2006 NC Code was amended in March 2007. This amendment defined specific building categories and components where special inspections were required. The 2009 NC Building Code (2006 International Building Code with North Carolina Amendments) addressed special inspections in a manner virtually identical to the March 2007 amendment. The 2012 NC Building Code (2009 IBC with NC Amendments) continued to define specific building categories and components where special inspections were required.

Special inspections are detailed inspections of important elements of a specific project. These inspections largely deal with the building structure, but also may address fire protection, electrical systems, and mechanical systems. The Prime Designer and his/her identified consultants remain fully responsible for conducting regular construction observation visits per the requirements of the Design Contract. For the purposes of this Special Inspections Guideline, special inspections shall be considered the construction observation and inspection that exceeds the traditional requirements of the Design Contract.

Through preparation of the Statement of Special Inspections, the registered design professional(s) in responsible charge creates a project-specific schedule of inspections. These inspections are conducted under the supervision and responsibility of the Special Inspector.

## **CHAPTER 2**

### **Applicability of Special Inspections**

Under the 2002 NC Building Code and the initial 2006 NC Building Code, the Building Official was granted discretion in determining which projects would be subject to the provisions of the Chapter 17 special inspections provisions. As the Building Official for state capital improvement projects, the State Construction Office exercised this discretion based upon the complexity and construction type of each project. Previous editions of these Special Inspections Guidelines contained descriptions of building types that would likely not be subject to special inspections.

The March 2007 amendment, to the 2006 NC Building Code, eliminated the Building Official's role in determining the applicability of special inspections to a particular project. Instead, the amendment explicitly identified Building Categories where special inspections were mandatory. The amendment also defined characteristics and elements of buildings subject to special inspections in other Building Categories. The 2009 NC Building Code incorporated the 2007 amendment's language directly into the body of the 2009 Code. The 2012 NC Building Code continues the fundamental triggering criteria for special inspections.

Below is Section 1704 language that appears in the 2012 NC Building Code:

#### **SECTION 1704 SPECIAL INSPECTIONS – 2012 NC/IBC 2009**

**1704.1.2 Special Inspections requirement.** Special inspections per Section 1704 are required for building, building components or other structures per the following:

1. Buildings or other structures listed in Table 1604.5 in occupancy category II if:
  - 1.1 Building height exceeds 45 feet (13.7 m) or three stories, or
  - 1.2 The building is an underground building per 405.1;
2. Buildings or other structures listed in Table 1604.5 in occupancy categories III or IV;
3. Piles, piers and special foundations per Sections 1704.8 through 1704.11, 1810.3.5.2.4 and 1810.3.5.2.5;
4. Retaining walls exceeding 5 feet height (1524 mm) per Section 1807.2;
5. Smoke control and smoke exhaust systems;
6. Sprayed fire-resistant materials; or
7. Special case described in Section 1704.15.

Above Items 1 & 2 are deemed "Whole-Building" special inspections by the SCO. Items 3 through 7 are deemed "Itemized" special inspections.

Any project within the jurisdiction of the State Construction Office shall receive special inspections as required by the current NC Building Code. The State Construction Office will not require special inspections that exceed code requirements.

It should be understood that there is no code provision that would *prohibit* an Owning Agency from implementing special inspections on *any* project, provided that funds are available to perform such inspections. In other words, if an Owning Agency sees merit in requiring special inspections and can afford those inspections, they may exceed code requirements on any project.

### **Step-By-Step Determination of Special Inspections Requirements**

Step 1.a: Per Section 1704.1, *the owner* shall procure, through the design contract or separate contract, the services of one or more special inspectors when Special Inspections are required by Section 1704.1.2.

Step 1.b: The *registered design professional in responsible charge* shall review Section 1704.1.2 and determine the Special Inspection requirements for their building, building components, or other structure. Triggers include:

**Whole-Building** special inspections:

1. Occupancy Category (ref Table 1604.5) II if H>45ft or three stories
2. Underground buildings in Occupancy Category II
3. All Occupancy Category III and IV structures

**Itemized** special inspections:

4. Piles, piers, and special foundations
5. Retaining walls exceeding 5ft in height
6. Smoke control and smoke exhaust systems
7. Sprayed fire-resistant materials (may include mastics and intumescent coatings)
8. Special cases per Part 1704.15

Step 2: If special inspections are required, the registered design professional in responsible charge shall prepare a Statement of SI per Part 1705.1. Per 1704.1.1, the Statement of SI must be included with the SCO CD (permit) drawings submitted for approval. The statement shall provide:

1. List of materials, systems, components, and work requiring special inspections:
  - a. 1704.3 - Steel construction
  - b. 1704.4 - Concrete construction
  - c. 1704.5 - Masonry construction
  - d. 1704.6 - Wood construction
  - e. 1704.7 - Soils
  - f. 1704.8 – Driven deep foundations
  - g. 1704.9 – Cast-in-place deep foundations
  - h. 1704.10 – Helical pile foundations
  - i. 1704.11- Vertical masonry foundation elements
  - j. 1704.12 – Sprayed fire-resistant materials

- k. 1704.13 – Mastic and intumescent fire-resistant coatings
  - l. 1704.14 - Exterior insulation and finish systems
  - m. 1704.15 - Special cases
2. Type, extent, and frequency of each special inspection
  3. Type and extent of each test
  4. List of individuals, agencies, or firms intended to be retained for conduction of the special inspections; this per Part 1704.1.1

Step 3 – Review Section 1705.3, 1707 & 1708 for additional special inspection requirements related to seismic resistance. **Note: Seismic special inspections & testing triggers, discussed below, are pertinent only when a project is subject to whole-building special inspections per Section 1704.1.2.**

1. Sections 1705.3, 1707 & 1708 seismic related special inspections triggers include:
  - a. Seismic-force-resisting systems in structures assigned to SDC C, D, E or F.
  - b. Designated seismic systems in structures assigned to SDC D, E, or F.
  - c. Architectural, mechanical, and electrical components assigned to SDC C, D, E, or F. Refer to Sections 1705.3.3 thru 1705.3.5 for guidance.
2. Per 1705.3.6, if seismic related special inspections are required, the statement of special inspections shall be updated to identify the following:
  - a. The designated seismic systems and seismic-force-resisting systems that are subject to special inspections.
  - b. Additional special inspections and testing required by Section 1707 and 1708.

Step 4 – Review Sections 1705.4 & 1706 for additional special inspection requirements related to high wind resistance.

**Note:**

▪ **Wind resistance inspections detailed in Sections 1705.4.1 & 1705.4.2 are required only when a project is subject to whole-building special inspections per Section 1704.1.2.**

▪ **Wind resistance special inspections appearing in Section 1706 are pertinent whenever a project falls within wind conditions as described in Item 1 below (even if the project is not subject to whole-building special inspections per Section 1704.1.2).**

1. Sections 1705.4 & 1706 high wind related special inspections triggers include:
  - a. Structures in wind exposure category B where the 3-second-gust basic wind speed is 120mph or greater.
  - b. Structures in wind exposure category C or D, where the 3-second-gust basic wind speed is 110mph or greater.
2. Per 1705.4, if high wind related special inspections are required, the statement of special inspections shall identify the following:
  - a. The main wind-force-resisting systems per Section 1705.4.1
  - b. The wind-resisting elements subject to special inspections per Section 1705.4.2.
3. Per 1706, perform high wind related special inspections of structural wood, cold-formed light gauge steel framing, and roof & wall cladding.

Step 5 – As required by 1709.1, include Contractor Statement of Responsibility forms *for each* of the following items when included in the Statement of SI:

1. Main wind force resisting system(s)
2. Seismic-force-resisting system(s)
3. Designated seismic system(s)
4. Wind or seismic-resisting component

On the following two pages, the above process is summarized and presented graphically in a flow chart.

**“Whole Bldg.”**

**1704.1.2 Special inspections requirement.** *Special inspections* per Section 1704 are **Cat. II** required for building, building components or other structures per the following: **>45’High**

1. Buildings or other structures listed in Table 1604.5 in Occupancy Category II if: **>3 Stories “Tall”**

1.1. Building height exceeds 45 feet (13.7 m) or three stories, or

1.2. The building is an underground building per Section 405.1: **Cat. III or IV**

2. Buildings or other structures listed in Table 1604.5 in Occupancy Categories III or IV;

3. Piles, piers and special foundations per Sections 1704.8 through 1704.11, 1810.3.5.2.4 and 1810.3.5.2.5;

4. Retaining walls exceeding 5 feet (1524 mm) height per Section 1806.2 1807.2;

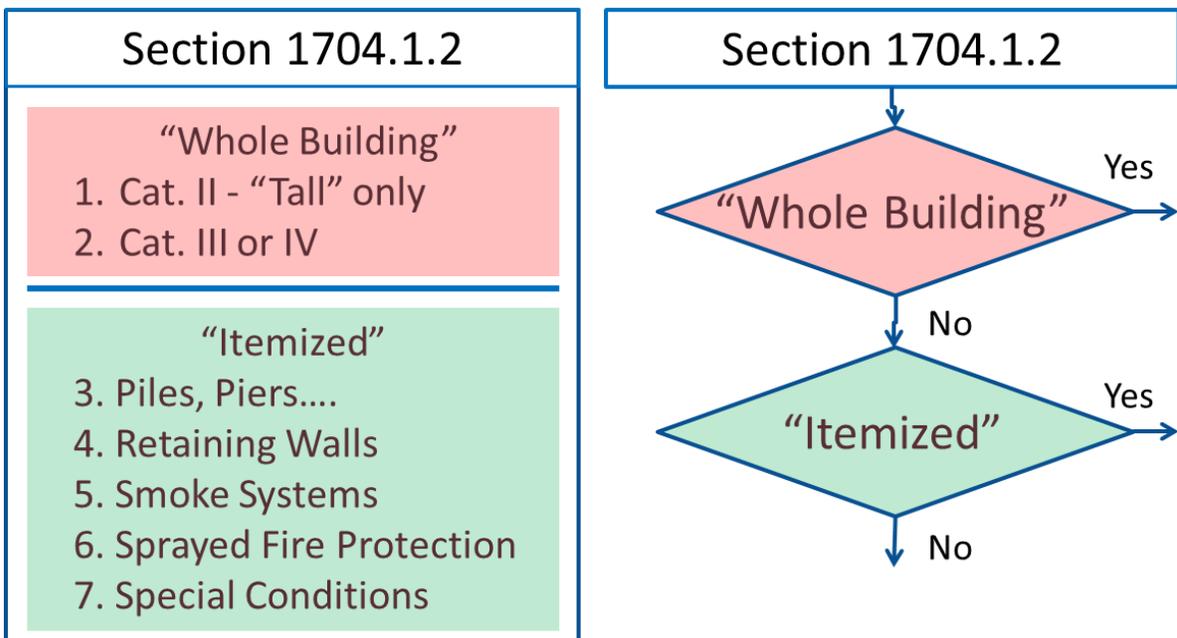
5. Smoke control and smoke exhaust systems;

6. Sprayed fire-resistant materials; or

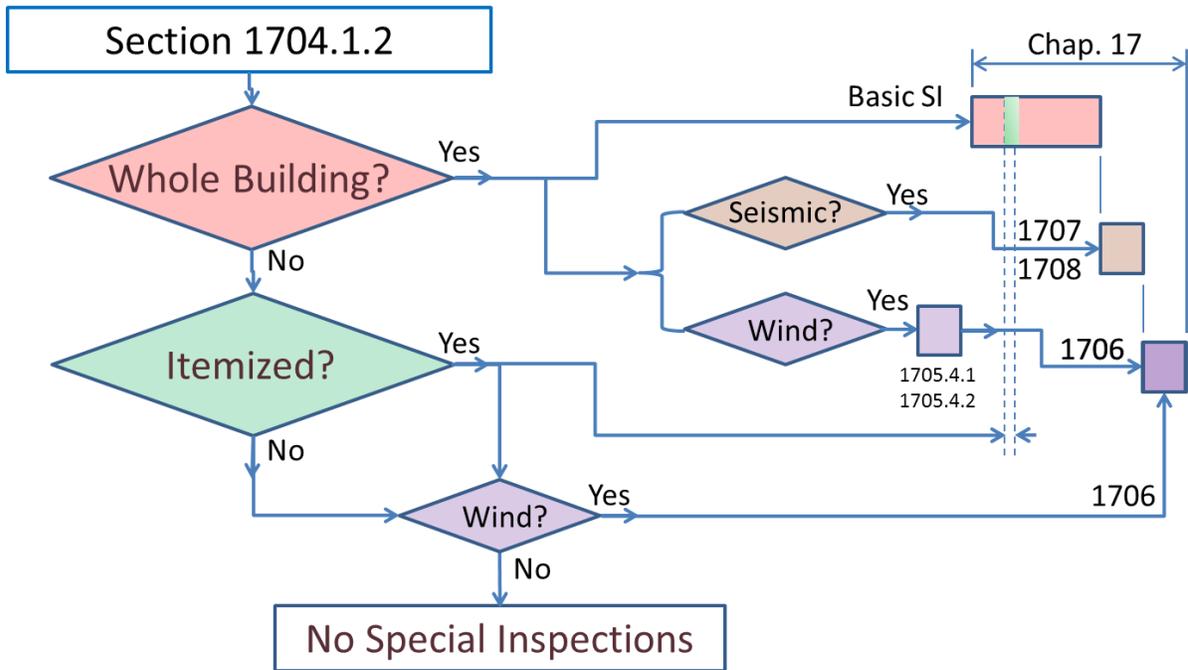
7. Special case described in Section 1704.15.

**“Itemized”**

Derivation of Flow Chart:



See next page for completed Flow Chart.



## **CHAPTER 3 PLANNING & PROCUREMENT**

### **Planning**

For each project, owning agencies shall consider the possibility that special inspections may be needed. See Chapter 2, Applicability of Special Inspections, for general guidance. If there is any doubt regarding the applicability of special inspections, then planning should anticipate that special inspections *will be required*.

To this end, special inspections costs should be estimated and added as a line item in the Form OC-25, "Proposed Capital Improvement Project".

At present, the State Construction Office does not possess sufficient historical data to provide precise costs of special inspections services for different types of projects. From experience, it appears that special inspections costs are falling in the range of ¼% to 1% of Estimated Construction Cost.

In the event that special inspections are budgeted for a project, but ultimately not needed or cost less than the budgeted amount, excess funds will revert to the project contingency fund. Should special inspections costs exceed the budgeted amount, the project contingency fund will provide the necessary additional monies.

### **Procurement**

At the Pre-Design Phase of the project, the Owner must determine its preferred method for procuring special inspections services.

Designer selection procedures are prescribed by the NC Administrative Code, Title 01 – Administration, Subchapter 30D, "State Building Commission Designer & Consultant Selection Policy" (01 NCAC 30D). On June 1, 2005, new special-inspections-specific selection rules went into effect. These rules were structured to provide maximum selection flexibility for owning agencies and were tailored to the unique character of professional special inspections services. A reprint of the new rules appears at the end of this chapter.

There are two basic methods of procurement for special inspections services:

## **1. Special Inspections Through the Designer's Contract**

Special inspections services may be procured through the Designer's contract with the Owner. These services may be included from the initiation of the Design Contract or may be added to an existing Design Contract via a contract amendment.

- **Special Inspections as Part of Initial Design Contract**

During the proposal and negotiation of the Design Contract, the Designer shall identify the design team member that will be the designated Special Inspector. Once a Design Contract is in place, the Special Inspector may change only through a formal amendment to the Design Contract.

The role of the Special Inspector (SI) may be filled by the Prime Designer (usually the Architect), the Structural Engineer of Record (SER), or by another qualified member of the design team. The SI may utilize a number of qualified Agents to perform specific observations or inspections that require particular expertise.

The State Construction Office recognizes that, at the time of Design Contract negotiation, the project scope is only broadly defined and the building's final structural system is likely unknown. Therefore, the initial Design Contract line item for special inspections is an estimated figure that will require adjustment via one or more Design Contract amendments. The Owner and Designer shall carefully consider the Form OC-25 estimated special inspections figure when formalizing the Design Contract.

Actual payment for special inspections services, performed during the Construction Phase of the project, will be handled per Article 3, "Full-Time Construction Inspection", of the Design Contract: "The Designer shall be compensated for the additional expenses in a manner as mutually agreed upon between the Owner and the Designer and as set forth in a written amendment to this Agreement."

- **Special Inspections Added to the Design Contract Via Contract Amendment**

The addition of special inspections to an existing Design Contract may be necessary where a contract was in place prior to the SCO requirement of Section 1704 Special Inspections or if other circumstances warrant such an addition.

The role of the Special Inspector (SI) may be filled by the Prime Designer (usually the Architect), the Structural Engineer of Record (SER), or by another consultant added to the design team as the Special Inspector. The SI may utilize a number of qualified Agents to perform specific observations or inspections that require particular expertise.

## 2. Special Inspections Through a Qualified Independent Firm

Special Inspections may be performed by an independent firm selected through the Designer Selection and Evaluations Procedures as adopted by the State Building Commission (SBC) under 01 NCAC 30D, effective June 1, 2005.

- **A Firm Selected Through The Full Designer Selection Process**

The independent firm may be selected using the traditional designer selection process.

- **A Firm Selected and Engaged via Open-Ended Service Agreement**

Open ended contracts may be used for Special Inspections professional services. Annual fees are limited to \$300,000 with no single project fee exceeding \$100,000. These annual contracts may be extended for an additional year with the total two-year fee not exceeding \$600,000. Extension of a firm's contract for the additional year precludes that firm's selection for the next year's annual contract.

"Minor Project" procedures may be used when selecting firms for these open-ended agreements.

- **A Firm Selected From Formally-Identified Consultants to the Prime Designer**

The Owner may negotiate a professional services contract with one of the Prime Designer's formally-identified (in Article 13 of the Standard Form of Agreement Between Owner and Designer) consultants. This consultant could be the Structural Engineer of Record or a Special Inspections Consultant. There is no requirement for solicitations of letters-of-interest or formal interviews.

- **A Firm Currently Under Contract for Professional Services Related to the Same Project**

If originally selected using appropriate Qualifications Based Selection (QBS) procedures, a professional firm already engaged for some aspect of a specific project may, if suitably qualified, have its scope of services expanded to provide Special Inspections services. An example would be a Geotechnical Engineering firm or Independent Testing Laboratory already engaged or at work on a project.

Selected Excerpts:

**SUBCHAPTER 30D - STATE BUILDING COMMISSION DESIGNER AND CONSULTANT  
SELECTION POLICY**

**01 NCAC 30D .0103 DEFINITIONS**

For purposes of this Subchapter, the following definitions shall apply:

- (1) "Annual Service Agreement" means an open end agreement for professional services with a designer or consultant, subject to the limitations of the Rule in this Subchapter.
- (2) "Capital Projects Coordinator" means the individual authorized by each funded agency to coordinate all capital improvement projects and related matters with the State Construction Office and to represent that agency on all matters presented to the SBC. The individual so designated for purposes of the Rules in this Subchapter may have other titles within his agency but shall carry out the duties assigned herein to the Capital Projects Coordinator. Whenever the Capital Projects Coordinator is referenced herein, it shall be understood to include a designated assistant or representative.
- (3) "Consultant" means any individual, firm, partnership, corporation, association or other legal entity selected for planning and studies of an architectural and engineering nature associated with a capital improvement project. The consultant must be licensed to practice architecture or engineering in the State of North Carolina.
- (4) "Contact person" means the person named in the public advertisement who shall be the Capital Projects Coordinator or his designee.
- (5) "Designer" means any individual, firm, partnership, corporation, association or other legal entity licensed to practice architecture, engineering, or landscaping architecture in the State of North Carolina.
- (6) "Funded agency" means the department, agency, authority, or office that is named in the legislation appropriating funds for the design and/or or construction project.
- (7) "Major projects" means those capital improvement projects whose authorized funding or estimated cost is greater than five hundred thousand dollars (\$500,000.00) or a planning study activity whose authorized funding is greater than fifty thousand dollars (\$50,000.00).
- (8) "Minor projects" means those capital improvement projects whose authorized funding or estimated cost is five hundred thousand dollars (\$500,000.00) or less or a planning or study activity whose authorized funding is fifty thousand dollars (\$50,000.00) or less. Minor projects may also include a grouping of small non-specified or anticipated projects whose aggregate total falls within the minor project cost limitations.
- (9) "Professional services" means those services within the scope of the practice of architecture, engineering or landscape architecture as defined by the public laws of North Carolina.
- (10) **"Special inspections" means detailed inspections of materials, installation, fabrication, erection or placement of components and connections requiring special expertise to ensure compliance with construction documents and referenced standards as per Section 1704 of the NC State Building Code.**
- (11) "Using agency" means the sub-division of the funded agency for whose use the project is to be provided. If the funded agency is so subdivided for administrative control, the using agency would be a division, geographically self-contained facility, campus, or similar body, as determined by the administrative head of the funded agency.

*History Note: Authority G.S. 143-135.25; 143-135.26;  
Eff. January 1, 1988;  
Amended Eff. June 1, 2005, May 1, 1990; April 1, 1989.*

**01 NCAC 30D .0302 PRE-SELECTION**

(a) A pre-selection committee shall be established for all projects requiring professional service. On minor projects the pre-selection committee shall consist of at least the Capital Projects Coordinator, a representative of the using agency and one representative from the State Construction Office. On major projects the pre-selection committee shall consist of at least the Capital Projects Coordinator, a representative of the using agency and two representatives from the State Construction Office. At least one member of all pre-selection committees shall be a licensed design professional.

(b) General Procedure for All Projects: The Capital Projects Coordinator shall review with the using agency the requirements of the project. This step shall take place prior to public advertisement in the Purchase Directory, because designers and consultants have a significant need to know in advance the program intent of a project in order to demonstrate their qualifications for the project in their letter of interest. The Capital Projects Coordinator shall receive all letters of interest and other qualification information either directly or from the designated contact person. After a pre-selection priority list is prepared, the list shall remain confidential except to the Secretary of the SBC. If fewer than three letters of interest are received on major projects, the project shall be re-advertised in the Purchase Directory. If fewer than three letters of interest are received following the re-advertisement, the Capital Projects Coordinator may proceed with the selection process using the data received or may advertise again.

(c) Special Procedures for Minor Projects: The Capital Projects Coordinator shall review with the using agency the requirements of the project and the qualifications of all firms expressing interest in a specific project. The Capital Projects Coordinator and a representative of the using agency shall meet with the representative from the State Construction Office for the evaluation of each firm and development of a list of three firms in priority order to be presented to the SBC. The Capital Projects Coordinator may institute the interview procedures in Paragraph (d) of this Rule if he deems it beneficial in evaluating the firms. The Capital Projects Coordinator shall submit to the Secretary of the SBC the list of three firms in priority order, including pre-selection information and written recommendations, to be presented to the SBC. The Capital Projects Coordinator shall state in the submission to the SBC that the rules for public announcement and pre-selection have been followed.

(d) Special Procedures for Major Projects: The pre-selection committee shall review the requirements of a specific project and the qualification of all firms expressing interest in that project and shall select from that list not more than six nor less than three firms to be interviewed and evaluated. The pre-selection committee shall interview each of the selected firms, evaluate each firm interviewed, and rank in order three firms. The Capital Projects Coordinator shall state in his submission that the rules for public announcement and pre-selection have been followed.

(e) Special Procedures for Emergency Projects: On occasion, emergency design or consultation services may be required for restoration or correction of a facility condition which by its nature poses a hazard to persons or property, or when an emergency exists. Should this situation occur, in all likelihood there will not be sufficient time to follow the normal procedures described in this Rule. The Capital Projects Coordinator on these occasions may declare an emergency, notify the State Construction Office and then obtain the services of a designer or consultant for consultation or design of the corrective action. In all cases, such uses of these emergency powers shall involve a written description of the condition and rationale for employing this special authority signed by the head of the agency and presented to the SBC at its next normal meeting. Timeliness for obligation of funds or other non-hazardous or non-emergency situations do not constitute sufficient grounds for invoking this special authority.

(f) Fixed Term Contract: A Funded Agency or a Using Agency may require the services of designer(s) or consultant(s) for projects under three hundred thousand dollars (\$300,000) on a fixed term basis for one year. In such cases, designer(s) or consultant(s) for fixed term contracts shall be selected in accordance with the procedures for minor projects in Paragraph (c). In addition, no fixed term contract fee under the jurisdiction of the State Building Commission shall exceed one hundred fifty thousand dollars (\$150,000) in total volume per year regardless of the number of projects. No fee shall exceed thirty-six thousand dollars (\$36,000) per project. Fixed term contracts may be extended for a term of one additional year. Total fees shall not exceed one hundred fifty thousand dollars (\$150,000) for the first year or three hundred thousand dollars (\$300,000) for the two-year period regardless of the number of projects.

(g) Special Procedures for Department of Environment and Natural Resources: For Division of Water Quality projects under the Wetlands Restoration Program, the Funded Agency may require the services of multiple designer(s) or consultant(s) for design and construction management of wetland, stream and riparian buffer restoration projects on a routine basis. In such cases, designer(s) or consultant(s) for such open-ended contracts shall be selected in accordance with the procedures described for minor projects. This does not preclude the

Funded Agency's use of the designer selection procedures specified for major or minor projects if it elects to do so. The total volume of business in terms of negotiated design fee shall not exceed seven hundred thousand dollars (\$700,000) for the biannual contract term and no single project fee shall exceed three hundred fifty thousand dollars (\$350,000). In no case shall individual projects exceeding one million five hundred thousand dollars (\$1,500,000) in total costs be assigned for design under an open-end agreement. Open-end agreements under this procedure shall not be extended beyond a two-year term. The funded agency must readvertise on a biannual basis.

**(h) Special Procedures for Special Inspections: Special Inspections professional services may be selected utilizing any one of the following methods:**

- (1) **The special inspections services may be performed as part of the project design services rendered by the project designer selected in accordance with Paragraphs (a) through (d) of this Rule.**
- (2) **The special inspections services may be performed, independent of the project design services contract, by:**
  - (A) **a firm selected in accordance with Paragraphs (a) through (d) of this Rule.**
  - (B) **a firm selected via in accordance with Paragraph (f) of this Rule. Firms for such open-ended contracts shall be selected in accordance with the procedures described for minor projects. This does not preclude the Funded Agency's use of the designer selection procedures specified for major or minor projects if it elects to do so. In addition, no annual contract fee shall exceed three hundred thousand dollars (\$300,000.00) in total volume and no single fee shall exceed one hundred thousand dollars (\$100,000.00). Annual contracts may be extended for one additional year. However, if extended for an additional one-year period, the designer may not be selected for the next annual contract. Total annual fees shall not exceed three hundred thousand dollars (\$300,000.00) for first year or six hundred thousand dollars (\$600,000.00) for two-year period. If and when these fees are used to limit, the agency must readvertise.**
  - (C) **a firm selected from the consultants formally identified in Article 13 of the Standard Form of Agreement Between Owner and Designer.**
  - (D) **a firm initially selected using a qualifications based selection process, currently under contract for that project, and qualified to perform special inspections services.**

*History note: Authority G.S. 143-135.25; 143-135.26; S.L. 2001-442, Sec. 6(c); Eff. January 1, 1988; Amended Eff. July 1, 1993; May 1, 1990; Temporary Amendment Eff. May 15, 2002; Amended Eff. June 1, 2005, November 1, 2004; August 1, 2004.*

Subchapter 30D may be viewed in its entirety at  
<http://reports.oah.state.nc.us/ncac/title%2001%20-%20administration/chapter%2030%20-%20state%20construction/subchapter%20d/subchapter%20d%20rules.html>

## **CHAPTER 4 CONTRACT DOCUMENT REQUIREMENTS**

The following are required to be included in the project construction documents.

### **Statement of Special Inspections**

The Statement of Special Inspections (SSI) is a form that identifies the scope of special inspection requirements specific to a project and identifies the agencies and/or inspectors responsible for providing those services. The SSI shall be developed by the registered design professional in responsible charge, shall be incorporated into the construction documents, and shall be submitted with the CD plan review set to the State Construction Office. It may be included in the contract drawings or specifications. A sample format is posted on the SCO website at <http://www.nc-sco.com/specialinspections.aspx>.

In addition to information required above, for identified “Special Cases” as outlined in Section 1704.15 of the NCSBC, the registered design professional in responsible charge must identify specific qualifications for special inspections.

Given that the majority of Chapter 17 special inspections are related to the building’s structural system, the Structural Engineer of Record will likely prepare most or all of the SSI. As with any professional design work, the registered design professional shall work within the areas of his/her competency. If necessary, several registered design professionals may contribute to the preparation of a particular project’s SSI. The SCO sample SSI has been revised to reflect this possibility.

### **Acknowledgement of Contractor’s Responsibility Form**

If the project is subject to Special Inspections for Wind or Seismic Resistance, an “Acknowledgement of Contractor’s Responsibility” form, per Code Section 1709, shall be included in the specifications, Division 1. A format for the Acknowledgement of Contractor’s Responsibility is posted on the SCO website at <http://www.nc-sco.com/specialinspections.aspx>

This shall be included in the Construction Document Phase review set submitted to the SCO.

### **Specification Coordination**

It shall be the design team’s responsibility to coordinate the specifications with the contract drawings, Statement of Special Inspections, and the requirements of the SCO Special Inspections Guidelines.

### **Contract Drawing Coordination**

It shall be the design team's responsibility to coordinate the contract drawings with the specifications, Statement of Special Inspections, and the requirements of the SCO Special Inspections Guidelines.

## CHAPTER 5 QUALIFICATIONS OF SPECIAL INSPECTORS

Prior to starting work the owner shall be provided with the name and resume for the designated Special Inspector for the project. The designated Special Inspector shall be a North Carolina Professional Engineer or a North Carolina Registered Architect and approved by the project owner.

Individuals providing inspections shall meet the following minimum criteria of certification and/or documented experience. Work experience must be related to the field for which the inspector is being utilized. Work experience may be gained by working for an inspection/testing agency, an engineering firm, or a contractor as a technician, inspector or engineer.

The designated Special Inspector shall be responsible for collecting and approving documentation of qualifications for all inspectors. Copies of documentation of qualifications, including the qualifications of the ITL if they are providing Special Inspection services, shall be maintained by the Special Inspector and be made available for owner review as requested.

Special Inspection Category	Code Reference	Primary Inspector or Inspection Supervisor	Supplemental Inspector (under the direct supervision of the Inspection Supervisor)
Verification of Fabricators	1704.2; 1704.2.2	See below for type of fabrication	
Steel Construction and High Strength Bolting	1704.3 Exception 1; Table 1704.3 Items 1, 2, 3, and 6; 1704.3.2; 1704.3.3; Table 1704.8 Item 5	Registered professional engineer or architect or Current ICC Structural Steel and Bolting Inspector Certificate plus one year of related experience	Engineer-In-Training (EIT) with one year of related experience
Welding	1704.3 Exceptions 1 and 2; Table 1704.3 Items 4 and 5; 1704.3.1; Table 1704.4 Item 2; Table 1704.5.1 Item 5.d; Table 1704.5.3 Item 5.j	Registered professional engineer or architect or Current ICC Structural Welding Special Inspector Certificate plus one year of related experience or Current AWS D1.1 Certified Welding Inspector or Current NDT Level III Certificate	Engineer-In-Training (EIT) with one year of related experience or Current ICC Structural Steel and Bolting Inspector Certificate plus one year of related experience or Current AWS D1.1 Certified Associate Welding Inspector plus one year of related experience or Current NDT Level II Certificate plus one year of related experience

Cold Formed Steel Framing	1704.3.4	Registered professional engineer or architect or Current ICC Structural Steel and Bolting Inspector Certificate plus one year of related experience or Current ICC Structural Welding Special Inspector Certificate plus one year of related experience or Current ICC Commercial Building Inspector Certificate plus one year of related experience	Engineer-In-Training (EIT) with one year of related experience
Concrete Construction	1704.4; Table 1704.4 Items 1, 3, 4, 5, 6, 7, 8, and 12; Table 1704.9 Item 3	Registered professional engineer or architect or Current ICC Reinforced Concrete Special Inspector Certificate <u>and</u> ACI Concrete Field Testing Technician Certificate, Grade 1 or Current ACI Concrete Construction Special Inspector Certificate or Current NICET Concrete Technician Level III Certificate in Construction Materials Testing	Engineer-In-Training (EIT) with one year of related experience or Current Associate ACI Concrete Construction Special Inspector with one year of related experience
Prestressed Concrete Construction (see also Concrete Construction)	Table 1704.4 Items 1, 9, and 10; Table 1704.8 Item 6	Registered professional engineer or Current ICC Pre-stressed Special Inspector Certificate with one year of related experience or Current PCI Quality Control Technician / Inspector Level II certificate with one year of related experience	Engineer-In-Training (EIT) with one year of related experience or Current PCI Quality Control Technician / Inspector Level I certificate with one year of related experience
Post-tensioned Concrete Construction (see also Concrete Construction)	1704.4 Exception 3; Table 1704.4 Items 1, 9, and 11	Registered professional engineer or Current PTI Level 2 Unbonded PT Inspector Certificate	Engineer-In-Training (EIT) with one year of related experience or Current PTI Level 1 Unbonded PT Inspector Certificate with one year of related experience
Masonry Construction	1704.5; Table 1704.5.1 Items 1, 2, 3, 4, 5a, 5b, 5c, 5e, 5f, 6, 7, and 8; Table 1704.5.3 Items 1, 2, 3, 4, 5a, 5b, 5c, 5d, 5e,	Registered professional engineer or architect or Current ICC Structural Masonry Special Inspector Certificate plus one year of related experience	Engineer-In-Training (EIT) with one year of related experience

	5f, 5g, 5h, 5i, 5k, 5l, and 6; 1704.11		
Wood Construction	1704.6	Registered professional engineer or architect or Current ICC Commercial Building Inspector Certificate plus one year of related experience	Engineer-In-Training (EIT) with one year of related experience
Verification of Site Soil Condition, Fill Placement, and Load-Bearing Requirements	1704.7; Table 1704.7; 1804.5 Exception	Current NICET Soils Technician Level II Certificate in Construction Materials Testing or Current NICET Geotechnical Engineering Technician Level II Construction or Generalist Certificate or Current ICC Soils Special Inspector Certificate plus one year of related experience or Engineer-In-Training (EIT) with one year of related experience or Geologist-In-Training (GIT) with one year of related experience	Current NICET Soils Technician Level I Certificate in Construction Materials Testing plus one year of related experience or Current NICET Geotechnical Engineering Technician Level I Construction or Generalist Certificate plus one year of related experience
Deep Foundations	1704.8; Table 1704.8; 1704.9; Table 1704.9; 1704.10	Current NICET Soils Technician Level II Certificate in Construction Materials Testing or Current NICET Geotechnical Engineering Technician Level II Construction or Generalist Certificate or Engineer-In-Training (EIT) with one year of related experience or Geologist-In-Training (GIT) with one year of related experience	Current NICET Soils Technician Level I Certificate in Construction Materials Testing plus one year of related experience or Current NICET Geotechnical Engineering Technician Level I Construction or Generalist Certificate plus one year of related experience
Sprayed Fire Resistant Material	1704.12	Registered professional engineer or architect with one year of related experience or Current ICC Spray-Applied Fireproofing Special Inspector Certificate or Current ICC Fire Inspector I Certificate plus one year of related experience	Engineer-In-Training (EIT) with one year of related experience

Mastic and Intumescent Fire-Resistant Coatings	1704.13	Registered professional engineer or architect with one year of related experience or Current ICC Spray-Applied Fireproofing Special Inspector Certificate or Current ICC Fire Inspector I Certificate plus one year of related experience	Engineer-In-Training (EIT) with one year of related experience
Exterior Insulation and Finish System	1704.14	Registered professional engineer or architect or Current AWCI EIFS Inspector Certificate	Engineer-In-Training (EIT) with one year of related experience
Special Cases	1704.15	As identified by the Engineer of Record, on a case by case, in the Statement of Special Inspections.	
Smoke Control	1704.16	Registered Professional Engineer (Mechanical or Fire Protection Discipline) and Certification as Air Balancer or Current AABC Technician Certification with one year of related experience	Engineer-In-Training (EIT) with one year of related experience
Wind Requirements	1705.4.1; 1705.4.2; 1706; 1710.3	As recognized above for each specific type of component or material.	
Seismic Resistance	1705.3 Exceptions 1, 2, and 3; 1705.3.1; 1705.3.2; 1705.3.3; 1705.3.4; 1705.3.5; 1705.3.6; 1707; 1708; 1710.2	As recognized above for each specific type of component or material.	

## **CHAPTER 6 PRECONSTRUCTION MEETING**

The following topics related to special inspections shall be included in the agenda for the preconstruction meeting. These topics are in addition to those outlined by the State Construction Office in the Preconstruction Conference Meeting Requirements and Agenda Guidelines. These additional topics do not relieve named parties from responsibilities outlined in the Preconstruction Conference Meeting Requirements and Agenda Guidelines.

- The Special Inspector shall review the Statement of Special Inspections to verify that all parties have a clear understanding of the special inspections provisions and the individual duties and responsibilities of each party.
- The Special Inspector shall review the certification requirements to verify that all parties have a clear understanding of the requirements.
- The representatives of the project owner, State Construction Office, Structural Engineer of Record, general contractor, independent testing lab and Special Inspector will sign the log-in sheet documenting their presence at the meeting.
- A matrix for communication shall be developed clearly indicating reporting requirements for Special Inspections and identifying parties responsible for said reporting. Responsibilities for distribution of reports and certifications shall be outlined. See Chapter 8 for documentation requirements and distribution list for each report requirement.
- The construction schedule shall be presented to the Special Inspector.
- The Special Inspector shall review the construction schedule and identify elements of the construction that will require special inspections. Special Inspector shall provide contractor a schedule of special inspections based on construction schedule within 14 days of receiving construction schedule.
- Contractor shall provide Special Inspector a copy of revised construction schedule on a monthly basis in accordance with contracts and per progress of the construction.
- Special Inspector shall revise schedule of special inspections monthly to reflect changes in the progress of construction.
- Special Inspector shall establish timely notification for inspections. The minimum standard for timely notification shall be one business day.

## **CHAPTER 7 ROLES AND RESPONSIBILITIES**

The following are the responsibilities of the various parties involved throughout the design and construction process for Capital Improvement projects as outlined in Chapter 2.

### **Owner**

#### Pre-design Phase

- The Owner shall be aware of the necessity to provide Special Inspections and shall reserve funds within the project budget to cover the Special Inspection requirements.
- The Owner should indicate its preferred method of procuring special inspections when soliciting letters-of-interest for design services.

#### Pre-construction Phase

- The Owner shall solicit proposals, from ITL's, for construction testing services.
- The Owner shall confer with the Designer to ensure that the scope of construction testing services is sufficient to facilitate the Special Inspections of the project.
- If the special inspections are not part of the Designer's contract, the Owner must engage an independent firm to perform special inspections.
- If the special inspections are a part of the Designer's contract, the owner shall review any amendments to the design contract as they relate to special inspection services to address change in scope.
- Participate in Preconstruction meeting.

#### Construction Phase

- Maintain Special Inspection documentation consistent with institutional requirements.

### **Architect**

#### Pre-design Phase

- Inquire regarding the Owner's preference for procurement of special inspections services.
- If special inspections will be performed under the Designer's contract, ensure that the proposal for the Design Contract specifically includes services for the performance of all special inspection activities. These services shall be separately identified in the proposal.
- If special inspections will be performed under the Designer's contract, identify the agency that will serve as the Special Inspector (SI).

#### Design Phase

- Understand Chapter 17 and its impact on overall design and construction administration activities.

- Assure that the Statement of Special Inspections and the Statement of Contractor's Responsibility Form (all provided by the SER) are included in the contract documents.

#### Pre-construction Phase

- If Special Inspections are included under the designer's contract, architect shall review and propose an amendment to Special Inspection contract, if necessary.
- If Special Inspections are not included under the designer's contract, architect shall provide assistance in the selection of the Special Inspector.
- Facilitate Preconstruction Meeting.

#### Construction Phase

- Provide construction administration services as contracted under the design contract and per State Construction Manual.
- Ensure distribution of Special Inspection documentation as agreed upon in preconstruction meeting.

### **Structural Engineer of Record**

#### Pre-design Phase

- Communication with Architect/Prime Designer, during establishment of design fee proposal, to ensure that overall design fee reflects SI tasks of the Structural Engineer of Record (SER).
- If special inspections will be performed under the Designer's contract, and if the SER is to provide the special inspection services, the SER shall provide the Architect/Prime Designer an estimated fee to provide the special inspections services.

#### Design Phase

- Preparation of the Statement of Special Inspections and Statement of Contractor's Responsibility Form (if applicable).
- Coordination of specification & drawing requirements with the Statement of Special Inspections.

#### Pre-construction Phase

- Participate in Preconstruction Meeting.
- Provide assistance in the selection of the Special Inspector if requested by Architect/Prime Designer.

#### Construction Phase

- Provide construction administration services as contracted under the design contract and per the State Construction Manual. These include periodic inspections of the structural steel framing. Field reports shall be completed for all site visits, and submitted to the architect and included in the monthly report submitted by the Special Inspector.

- Review deficiencies brought to his attention by the Special Inspector. The SER is the sole judge of the ultimate acceptability of any apparent deficiency.
- If the SER is the Special Inspector, it is the responsibility of the SER/Special Inspector to avoid duplication of services and/or fees associated with the construction administration and Special Inspections.
- Distribute documentation as agreed upon in preconstruction meeting.

### **MEP Engineer of Record**

#### Design Phase

- Communicate to SER the inclusion of a smoke control system in the project scope, if appropriate.
- For Seismic Design Categories C, D, E or F, mechanical and electrical components require specific special inspections as outlined in Section 1707.7.
- Include in specifications the structural testing requirements for mechanical and electrical equipment seismic system components and their mounting systems as outlined in Section 1708.5.

### **Special Inspector**

#### Pre-construction Phase

- Provide Owner or Designer an estimated fee to provide special inspections if requested.
- Participate in preconstruction meeting.

#### Construction Phase

- The Special Inspector shall provide all inspections outlined in the scope as defined in the Statement of Special Inspections, except those performed by the SER. The SI may retain the services of other qualified Agents of the Special Inspector (Agents) to conduct particular inspections and tests. The Special Inspector shall provide and distribute all field reports as agreed upon in the preconstruction meeting. Efforts shall be made to avoid duplication of inspections.
- Administer special inspection process. The SI is responsible for managing and coordinating the efforts of the various agents.
- Adhere to reporting requirements outlined in Chapter 8.
- For simple deficiencies discovered, the Special Inspector shall immediately inform the Contractor of the deficiency. The SI makes a record of the deficiency and a record of the corrective actions taken in the Discrepancy Notice.
- For complex deficiencies, the SI immediately informs the Contractor, the remainder of the Design Team, and the Owner of the complex deficiency in the Discrepancy Notice. The SI must be present during the remedial actions with the frequency assigned to the original inspection requirements. Upon completion of any remedial actions, the SI notifies the Designer and the Owner that the work is ready for reevaluation.

- SI shall keep separate his time spent to review corrected deficiencies. Owner's special inspection costs incurred after identification of the initial deficiency will be reimbursed to the Owner by the Contractor at the conclusion of the project via deductive change order.
- The Special Inspector shall attend monthly meetings during phase of construction special inspections are required.

## **Contractor**

### Pre-construction Phase

- Participate in preconstruction meeting.
- Understand Chapter 17 and its impact on overall construction administration activities.

### Construction Phase

- Timely notification to SI for each portion of work requiring inspection (the current SCO General Conditions directly address this in Article 13.c.).
- Submit signed Statement of Contractor's Responsibility Forms for systems identified in Code Section 1709.
- Submit copy of approved shop drawings and submittals to SI.
- Correct deficiencies in the presence of the SI.
- For complex deficiencies identified by the SI, the contractor must either stop work until the Designer has rendered judgment or, if the Contractor proceeds regardless, the Contractor will be responsible for complete removal and replacement (and any related forensic costs) of any apparent deficiency that is ultimately judged unacceptable by the Designer.
- Provide access to and means for safe and proper inspection of work.

## **Independent Testing Lab**

### Pre-construction Phase

- Participate in preconstruction meeting.

### Construction Phase

- The ITL provides tests as outlined in the contract specifications.
- The ITL may provide special inspections services as an Agent of the SI, under contract with the SI.
- The ITL may provide special inspection services under contract directly with the Owner or Designer.
- Distribute documentation as agreed upon in preconstruction meeting.
- The ITL shall submit to the Special Inspector the qualifications for personnel performing the following:
  - concrete slump and air content tests

- monitoring temperature of concrete
- creation of concrete test specimens for strength tests
- preparation of grout and mortar specimens and or prisms

## **State Construction Office**

### Pre-design Phase

- Assist Owner in contract negotiations when Special Inspections are part of the Design Contract.

### Design Phase

- Determine if project is “exempt” from special inspections as outlined in Chapter 2. Document exemption via review comment in Design Development review comments.
- Review Statement of Special Inspections at the Construction Document Phase review. Review for conformance to NCSBC and SCO guidelines.

### Pre-construction Phase

- Participate in preconstruction meeting.
- Assist Owner in contract negotiations when Special Inspections are not part of the Design Contract.

### Construction Phase

- Monitor execution of special inspections.
- Maintain special inspection documentation consistent with SCO policy.

## **CHAPTER 8**

### **INSPECTION AND REPORT SUBMITTAL PROCESS**

The following are the general requirements for providing Special Inspections for Capital Improvement Projects as outlined in Chapter 2.

1. The owner shall ensure that copies of the approved Statement of Special Inspections, plans and specifications are provided to the Special Inspector prior to the start of the affected work.
2. It is the Special Inspector's responsibility to review the approved Statement of Special Inspections, plans and specifications, as they relate to Special Inspection requirements, in advance of construction in order to establish that adequate information is available to conduct the required inspections and tests. Any issues identified by the Special Inspector with regard to the completion of Special Inspections services, should be brought to the attention of the owner and designer, in writing, and resolved prior to the start of construction.
3. The Special Inspector should request copies of qualifications for all inspectors expected to provide services on a given project. The Special Inspector shall review the qualifications for conformance with the Statement of Special Inspections and the requirements listed in Chapter 5 of this guideline.
4. The Special Inspector should attend the Pre-Construction meeting, (See Chapter 6). The Special Inspector shall review the construction schedule and identify work elements that require special inspections. The general contractor is responsible for notifying the Special Inspection agency when work is ready for inspection.
5. The contractor shall provide a minimum notice of one business day when inspections are required. The contractor is responsible for providing access to and means for safe and proper inspection of the work.
6. The Special Inspector shall perform inspections of the work in accordance with the approved Statement of Special Inspection, plans, specifications, and applicable sections of the North Carolina State Building Code.
7. It is the contractor's responsibility to verify that all work requiring special inspections is inspected and/or tested prior to concealment.
8. After each inspection, the Special Inspector or his agent shall complete a Special Inspector's Daily Report. A copy of the Special Inspector's Daily Report shall be left in the contractor's field office. A suggested format for this report is included in Appendix A. This report should be distributed according to the matrix in Table 8.1.

9. If the Special Inspector or his agent notes a discrepancy, a Notice of Discrepancy form (see Appendix A for a suggested format) must be completed and distributed within 24 hours according to the matrix in Table 8.1. All discrepancies should be brought to the immediate attention of the contractor.
10. As discrepancies are resolved, the Special Inspector or his agent shall complete the “Discrepancy Resolution” portion of the Notice of Discrepancy Form (see Appendix A for a suggested report format). The completed form shall be distributed within 24 hours of correction as per the matrix in Table 8.1.
11. The Special Inspector shall maintain a Log of Discrepancies and Corrections in order to track resolution of all discrepancies.
12. The Special Inspector shall prepare a Monthly Report of Special Inspections. This report should be distributed per the matrix in Table 8.2. The suggested contents of this report are included in Table 8.3.
13. When all work requiring Special Inspections is completed and all discrepancies have been resolved, the Special Inspector shall prepare and submit a Final Report of Special Inspections. This report shall be distributed per the matrix in Table 8.2. The suggested contents of this report are shown on Table 8.4.
14. For the present, the owner should maintain paper work sufficient to meet post-construction and operations and maintenance requirements of the project. The SCO is in the process of defining additional criteria related to retention of Special Inspections documents.

**TABLE 8.1 – DOUCUMENTATION REQUIREMENTS FOR SPECIAL INSPECTION FIELD ACTIVITES**

ACTIVITY	DOCUMENTATION REQUIRED	DISTRIBUTION <sup>1</sup>
Field Inspection by Special Inspector or Agent of Special Inspector	Daily Report	<ul style="list-style-type: none"> <li>• Contractor</li> <li>• Included in SI Monthly Report</li> </ul>
	Discrepancy Notice (if required)	<ul style="list-style-type: none"> <li>• Designer</li> <li>• SER</li> <li>• Contractor</li> <li>• SCO</li> <li>• Owner</li> <li>• Included in SI Monthly Report</li> </ul>
	”Resolution of Discrepancy” portion of Discrepancy Notice	<ul style="list-style-type: none"> <li>• Same as Discrepancy Notice</li> </ul>
Testing Event by ITL	Daily Report	<ul style="list-style-type: none"> <li>• Special Inspector</li> <li>• Contractor</li> <li>• Owner</li> <li>• Included in SI Monthly Report</li> </ul>
Site Visit by SER	Field Observation Report	<ul style="list-style-type: none"> <li>• Designer</li> <li>• Special Inspector</li> <li>• Contractor</li> <li>• Included in SI Monthly Report</li> </ul>

<sup>1</sup> Actual distribution may vary due to contractual requirements and/or as agreed to in the pre-construction meeting.

**TABLE 8.2 – DISTRIBUTION REQUIREMENTS FOR MONTHLY AND FINAL REPORTS**

<b>SUBMITTAL</b>	<b>SCHEDULE</b>	<b>DISTRIBUTION</b>
Monthly Report	Monthly	<ul style="list-style-type: none"> <li>• SCO</li> <li>• Owner</li> <li>• SER</li> <li>• Designer</li> <li>• Contractor</li> </ul>
Final Report	Upon completion of all work requiring Special Inspections and resolution of all discrepancies.	<ul style="list-style-type: none"> <li>• SCO</li> <li>• Owner</li> <li>• SER</li> <li>• Designer</li> <li>• Contractor</li> </ul>

**TABLE 8.3**  
**SUGGESTED CONTENTS**  
**FOR**  
**MONTHLY REPORT OF SPECIAL INSPECTIONS**

1. Executive Summary
2. Statement of Special Inspections
3. Daily Reports
4. Discrepancy Notices
5. Log of Discrepancies and Corrections
6. ITL Reports
7. SER Reports
8. Supportive Documents
  - a. Photos
  - b. Drawings / Sketches
9. Checklist of Certification Requirements

**TABLE 8.4**  
**SUGGESTED CONTENTS**  
**FOR**  
**FINAL REPORT OF SPECIAL INSPECTIONS**

1. Executive Summary
2. Statement of Special Inspections
3. Completed Forms – Final Report of Special Inspections
4. Completed Forms – Final Report: Agent of Special Inspector
5. Final Material Certification Checklist
6. Final Log of Discrepancy and Correction

## **APPENDIX A**

### Special Inspection Forms

(See SCO Website: <http://www.nc-sco.com/specialinspections.aspx> )

- Statement of Special Inspections
- Contractor's Statement of Responsibility
- Special Inspection Daily Report
- Discrepancy Notice
- Discrepancy Notice and Resolution Log