# Which Projects Require.....

# **Special Inspections?**

#### How to Determine the Scope of Special Inspections

Special Inspections (SI) are required by Chapter 17 of the North Carolina State Building Code (NCSBC). The basis of SI is to provide a certain level of quality control for selected structural systems and other safety related issues of the project.

#### **Determining Scope**

The Design Professional in Responsible Charge (DPIRC) is responsible for determining the Scope of Special Inspections. The Inspections Division has adopted the Scope of SI and the exceptions as set forth in Chapter 17 of the NCSBC. Based on the code sections and the specific project parameters, the DPIRC would complete the Statement of Special Inspections (SSI).

#### Submitting the Scope for Approval

For Commercial Plan Review, complete the SSI in addition to the SI check boxes on Appendix B, and reproduce on the plans. The Building Plans Examiner will review the document for compliance with Chapter 17 of the NCSBC and make any comments on the drawings if required. The DPIRC may find it helpful to work with the Structural Engineer of Record, and an approved Special Inspection Firm (SIF) when determining the scope of SI for their specific project.

#### **Construction Scope Changes**

Scope changes during construction must be brought to the attention of the Inspections Division and approved by the Building Inspector prior to implementation.

#### The Scope of Special Inspections and the Exceptions

The Scope of SI and the exceptions are set forth in Chapter 17 of the NCSBC. Please see all changes to scope listed in the following documents: SI Scope Change and SI Interim Scope.

#### **Types of Special Inspections**

IT-01 Verification of Soils IT-02 Excavation and Filling IT-03 Piling and Drilled Piers IT-04 Modular Retaining Walls IT-05 Reinforced Concrete IT-06 Post Tension Slabs-on-Ground and Post-Tension Concrete **IT-07 Precast Concrete Erection IT-08** Prestressed Concrete IT-09 Inspection of Pre-Cast Concrete Fabricators IT-10 Inspection of Structural Steel Fabricators **IT-11 Structural Masonry** IT-12 Welding IT-13 High-Strength Bolting and Steel Frame Inspection **IT-14 Sprayed Fire-Resistant Materials** IT-15 Exterior Insulation and Finish System (EIFS) **IT-16** Seismic Resistance IT-17 Smoke Control **IT-18** Detention Basin **IT-19 Special Cases** 

#### **The Special Inspections Process**

#### Step 1

Design Professional in Responsible Charge (DPIRC) determines the project specific SI scope and includes it on the contract document submission for commercial plan review. The scope of SI is set forth in the NC State Building Code (NCSBC) Chapter 17. The commercial plans reviewer reviews the project specific SI scope and either concurs or requests revisions. After all revisions are made, the plans are approved.

#### Step 2

Upon payment for permit work may begin.

#### Step 3

During construction, the Special Inspections Firm (SIF) will visit the site at appropriate intervals to perform the tasks outlined in the Statement of Special Inspections (SSI). The SIF will complete documents which will include the Daily Logs, Test Results, Non-Conforming Work Log, and other SI documents as required. The Designated Special Inspector (DSI) will review these documents, sign and seal them as required, and submit them to the Building Inspector. In the event of Non-Conforming Work, the DSI will follow the Non-Conforming Work Procedure. If structural members are being fabricated off site, the Special Inspections Firm (SIF) shall verify that the Fabricator conforms to the requirements set forth in the NCSBC Section 1704.2.2. At the conclusion of the Fabricator's work, the Fabricator shall submit a Fabricator's Certificate of Compliance to the DSI.

#### Step 4

At the conclusion of the construction process, any remaining SI documents shall be submitted to the Building Inspector. Each DSI will review the project and complete a Final Report for each type of SI work performed. The DSI shall sign and seal the Final Report and send it to the Building Inspector and the DPIRC. After all Final Reports are received, the DPIRC will review all the Final Reports, the Statement of Special Inspections (SSI), complete the DPIRC Letter, and submit it to the Building Inspector. The Certificate of Completion or the Certificate of Occupancy will be issued only after the DPIRC Letter is received and found to be in compliance by the Department.

# **Special Inspections Scope**

#### NC Building Code (1704 Special Inspections)

#### 1704.1 General.

Where application is made for construction as described in this section, the owner or the registered design professional in responsible charge acting as the owner's agent shall employ one or more special inspectors to provide inspections during construction on the types of work listed under Section 1704 per Section 1704.1.2. The special inspector shall be a person who shall demonstrate competence, to the satisfaction of the building official, for inspections are in addition to the inspections specified in the *North Carolina Administrative Code and Policies*.

**1704.1.1 Building permit requirement.** The permit applicant shall submit a statement of special inspections prepared by the registered design professional in responsible charge in accordance with Section 106.1 as a condition for permit issuance. This statement shall include a complete list of materials and work requiring special inspections by this section, the inspections to be performed and a list of the individuals, approved agencies or firms intended to be retained for conducting such inspections.

#### 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 category II if:
  - a. Building height exceeds 45 feet or three stories, or
    - b. The building is an Underground building per 405.1;
  - 2. Buildings or other structures listed in table 1604.5 in categories III or IV;
  - 3. Piles, piers and special foundations;
  - 4. Retaining walls exceeding 5 feet height (See Section 1806);
  - 5. Smoke control and smoke exhaust systems;
  - 6. Sprayed fire-resistant materials; or
  - 7. Special case described in 1704.13.

**1704.1.3 Report requirement**. Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the building official, and to the registered design professional in responsible charge. Reports shall indicate that work inspected was done in conformance to approved construction documents. 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 in responsible charge 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 inspection shall be submitted periodically at a frequency agreed upon by the permit applicant and the building official prior to the start of work.

### **Statement of Special Inspections**

Statement Date:	
Project Name:	
Building Permit Number:	
Project Address:	
Design Professional in Responsible Charge (DPIRC):	

The following information is being submitted in accordance with the Special Inspection provisions of the North Carolina State Building Code. Attached is the <u>Schedule of Special</u> <u>Inspections</u> (SSI) required for this project.

This completed form is required to be placed on the drawings for plan review. A listing of the Special Inspection Firms (SIF) and the Designated Special Inspectors (DSI) for each inspection type shall be attached to this form.

This and all subsequent reports, logs, testing results, and other related SI documents shall be submitted to the Building Inspector within 10 business days of the event documented. Only documents that are prepared by Authorized Special Inspectors (ASI) and signed/sealed by Designated Special Inspectors (DSI) are valid and are permitted to be sent to the Building Inspector. The DSI will notify the Department upon the discovery of information that would negate the result of any information, and update said information within 10 days.

The DSI is responsible for verifying all information on each document prior to signing/sealing and submitting it. The DSI is also responsible for verifying each document is the correct document. The DSI is responsible for verifying all ASIs maintain current certifications during the course of the project, as failure to maintain current certifications may result in a voided document. At the conclusion of each individual Special Inspection type, the DSI will complete a Final Report and e-mail it to the Building Inspector. The DPIRC is responsible for completing the DPIRC Letter at the conclusion of all Special Inspections.

The Special Inspection program outlined herein, does not relieve the Contractor or any other entity of any contractual duties, including quality control, quality assurance, or safety. The Contractor is solely responsible for construction means, methods, and job site safety. Failure to adhere to the SI program as outlined herein may result in a stop work notice being issued by the Department.

Respectfully submitted, The Design Professional in Responsible Charge,

Type or Print Name



City of Greenville North Carolina

P.O. Box 7207 - Greenville, NC 27835-7207

Project Name: \_\_\_\_\_

Date: \_\_\_\_\_

Revised Date:\_\_\_\_\_

Permit #: \_\_\_\_\_ Building Address:

#### **Instructions for completing the Schedule of Special Inspections Form**

1. Indicate the Inspection Type (IT#) required for this project per NCSBC Section 1704.

2. Indicate whether Special Inspections are continuous, periodic or both, by checking the appropriate box.

3. Insure the scope meets NCSBC Section 1704 and other applicable standards for each Inspection Type.

The construction divisions which require inspections for this project are as follows:

#### **IT-1 VERIFICATION OF SOILS**

ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)				RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
Verifica	tion of Soils, 1704.7 & Chapter 18 NC	SBC					

#### **IT-2 EXCAVATION AND FILLING**

ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)	CONTIN INSPECT		RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
Excavat 3304	ion and Filing, NCSBC Section 1704.7	and				

#### **IT-3 PILING AND DRILLED PIERS**

-	EHECK IF INSPECTION TASK (Standard & Code Reference)			RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE		
		nd Drilled Piers, NCSBC Section 1704. and 1807-11	8-9,					

#### **IT-4 MODULAR RETAINING WALLS**

ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)	CONTIN INSPECT			SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
Modular 1704.13	Retaining Walls, NCSBC Section 161	0 and				

#### **IT-5 REINFORCED CONCRETE**

-	CCK IF INSPECTION TASK (Standard & Code Reference)			RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE	
	tendons	on of reinforcing steel, including pretes, and placements. ACI 318:3.5, 7.1-7.7 1907.7, 1914.4					
	with Tal	on of reinforcing steel welding in accor ble 1704.3, Item 5B. AWS D1.4, ACU 2, 1903.5.2	dance				
	during p	bolts to be installed in concrete prior to lacement of concrete where allowable l en increased. 1912.5					
		g use of required design mix. ACI 318: 1904, 1905.2, 1905.4, 1914.2, 1914.3	: Ch. 4,				
	content concrete tests. AS	g fresh concrete and performing slump and determining the temperature of fres e at the time of making specimens for st STM C 172, ASTMC 31, ACI 318: 5.6, 1914.10	sh rength				
	proper a	on of concrete and shotcrete placement pplication techniques. ACI 318: 5.9, 5. 1905.10, 1914.6, 1914.7, 1914.8					
	tempera	on for maintenance of specified curing ture and techniques. ACI 318: 5.11, 5. , 1905.13, 1914.9	13,				
	prestress	on of prestressed concrete: (A) Applica sing forces. (B) Grouting of bonded sing tendons in the seismic-force-resisti ACI 318: 18.18, ACI 318: 18.16.4					
	Erection 16	of precast concrete members. ACI 31	8: Ch.				

Verification of in-situ concrete strength, prior to stressing of tendons in positioned concrete, add prior to removal of shores and forms from beams and structural slabs. ACI 318: 6.2, 1906.2		

#### IT-6 POST TENSION SLAB-ON-GROUND AND POST TENSION CONCRETE

CCK IF UIRED	INSPECTION TASK (Standard & Code Reference)	CONTIN INSPECT			SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	ressed concrete design in construction nce with ACI 318.99 (NCSBC), 1704.4					

#### **IT-7 PRECAST CONCRETE ERECTION**

-	ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)		CONTINUOUS INSPECTIONS		RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	Precast Concrete Erection, NCSBC Table 1704.4, Item 9							
	Precast concrete fabricated in a plant, which is certified. NCSBC 1704.2							
	1							

#### **IT-8 PRESTRESSED CONCRETE**

-	ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)		CONTINUOUS NSPECTIONS		RIODIC ECTIONS	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	All prestressed concrete design and construction to be in accordance with ACI 318.99 (NCSBC)		n to be					

#### **IT-9 INSPECTION OF PRE-CAST CONCRETE FABRICATORS**

-	ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)	CONTINUOUS INSPECTIONS		RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	-	on of fabricators to be in accordance wi nents set forth in the NCSBC Sec. 1704					

#### **IT-10 INSPECTION OF STRUCTURAL STEEL FABRICATORS**

-	ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)	CONTINUOUS INSPECTIONS				SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	AWSDI	inspections shall be in compliance wit .1. The base for welding for qualificat AWSD1.1. (NCSNC)						

#### **IT-11 STRUCTURAL MASONRY**

-	HECK IF INSPECTION TASK (Standard & Code Reference)				SPECIAL INSPECTIONS FIRM	NOTES & SCOPE	
	be verifi site prep (C) Loca	onry construction begins, the following ed to ensure compliance: (A) Proportio vared mortar. (B) Construction of morta ation of reinforcement and connectors. rt. 3.3B, Art. 3.4	ns of r joints.				
	location location anchora or other type of r bars. (E) (tempera above 90 2104.4,	Dection program shall verify: (A) Size a of structural elements. (B) Type, size a of anchors, including other details of ge of masonry to structural members, fr construction. (C) Specified size, grade einforcement. (D) Welding of reinforci Protection of masonry during weather ature below 40° F) or hot weather (temp 0° F). Sec. 2108.9.2.11, Item 2, Sec. 210 ACI Sec. 1.15.4, 2.1.2, Sec. 1.12, Sec 2 2, ACI 3.3G, Art. 2.4, 3.4, Art.1.8	nd ames and ng perature 04.3,				

Prior to grouting, the following shall be verified to ensure compliance: (A) Grout space is clean. (B) Placement of reinforcement and connectors. (C) Proportions of site-prepared grout. (D) Construction of mortar joints. Sec. 1.12, Art. 3.2D, Art. 3.4, Art. 2.6B, Art. 3.3B		
Grout placement shall be verified to ensure compliance with code and construction provisions. Art. 3.5		
Preparation of any required group specimens, mortar specimens and/or prisms shall be observed. Sec. 2105.3, 2105.4, 2105.5, Art. 1.4		
Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified. Art. 1.5		

#### **IT-12 WELDING**

CHECK IF REQUIRED		INSPECTION TASK (Standard & Code Reference)	CONTINUOUS INSPECTIONS		PERIODIC INSPECTIONS		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	AWSDI	inspections shall be in compliance wit .1. The base for welding for qualificati AWSD1.1. (NCSNC)	h ions					

#### IT-13 HIGH-STRENGTH BOLTING AND STEEL FRAME INSPECTION

CHECK IF REQUIRED		INSPECTION TASK (Standard & Code Reference)		CONTINUOUS INSPECTIONS		RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	win acco 325 or A	ion of high strength bolts shall be inspe ordance with AISC specifications (AST (STMA 490) Bolts must be in accordan SD or AISC LRFD	ГМА					
	washers ASTM s construct of comp	verification of high-strength bolts, nut (A) Identification markings to conforr tandards specified in the approved tion documents. (B) Manufacturer's cer liance required. ASTM, AISC ASD, S ISC LRFD, Sec. A3.3	n to tificate					
		on of high-strength bolting: Bearing-typ ons. AISC LRFD Sec. M2.5, 1704.3.3	be					
		on of high-strength bolting: Slip-critica ons. AISC LRFD Sec. M2.5, 1704.3.3	1					

-			
	Material verification of structural steel: (A) Identification markings to conform to ASTM standards specified in the approved construction documents. (B) Manufacturer's certified mill test reports. ASTM A 6 or ASTM A 568, 1708.4		
	Material verification of weld filler materials. (A) Identification markings to conform to AWS specification in the approved construction documents. (B) Manufacturer's certificate of compliance required. AISC, ASD, Sec. A3.6, AISC LRFD, Sec. A3.5		
	Inspection of welding: (A) Structural steel. (1) Complete and partial penetration groove welds. (2) Multi-pass filet welds. (3) Single-pass filet welds . 5/16" (7.9 mm). (4) Floor and deck welds. (B) Reinforcing steel. (1) Verification of weldability of reinforcing steel other than ASTM A 706. (2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls, and shear reinforcement. (3) Shear reinforcement. (4) Other reinforcing steel. AWS D1.1, AWS D1.3, AWS D1.4, ACI 318: 3.5.2, 1704.3.1, 1903.5.2		
	Inspection of steel frame joint details for compliance with approved construction documents: (A) Details such as bracing and stiffening. (B) Member locations. © Application of joint details at each connection. 1704.3.2		

#### IT-14 SPRAYED FIRE-RESISTANT MATERIALS

ECK IF DUIRED	INSPECTION TASK (Standard & Code Reference)	CONTIN INSPECT	PERIODIC INSPECTIONS		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
Spray - a 1704.11	applied fire resistant materials, NCSBC					

#### IT-15 EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

CHECK IF REQUIRED		INSPECTION TASK (Standard & Code Reference)	CONTINUOUS INSPECTIONS		PERIODIC INSPECTIONS		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	EIFS, N	CSBC 1704.5						

#### **IT-16 SEISMIC RESISTANCE**

-	ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)	CONTINUOUS INSPECTIONS		PERIODIC INSPECTIONS		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
		y assurance plan with seismic requirem provided in accordance with Section 1'						

#### **IT-17 SMOKE CONTROL**

ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)		CONTINUOUS INSPECTIONS		RIODIC	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
Inspectio	on of smoke control, NCSBC 1704.14.2	2					

#### **IT-18 DETENTION BASIN**

CHECK IF REQUIRED		INSPECTION TASK (Standard & Code Reference)	CONTINUOUS INSPECTIONS		PERIODIC INSPECTIONS		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	Detentio	n basin, NCSBC 1704.13						

#### **IT-19 SPECIAL CASES**

ECK IF UIRED	INSPECTION TASK (Standard & Code Reference)	CONTINU INSPECTI	PERIODIC INSPECTION		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE



City of Greenville North Carolina P.O. Box 7207 - Greenville, NC 27835-7207

## **Special Inspection Final Report**

Project Name:		Date:
Permit Number:	Address:	
2	esponsible Charge (DPIRC)	
Designated Special Inspe		
List all Special types included	in this report:	
Inspections required for this p	o the best of my information, know project, and itemized in the Staten een performed, and all discovered	
Respectfully submitted, Designated Special Inspector		
Special Inspection Firm Name	2:	
Print name of DSI:		
Signature of DSI:		DSI- Licensed Professional Seal