

**SPECIAL INSPECTION GUIDELINES  
2005**

**DEVELOPED BY**

**SPECIAL INSPECTION COMMITTEE  
Arizona Structural Engineers Association  
Southern Arizona Chapter**

**&**

**BUILDING OFFICIALS  
of**

**Town of Oro Valley  
Town of Sahuarita  
Town of Marana  
City of Tucson**

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## **I. SPECIAL INSPECTION – AN OVERVIEW**

The Uniform Building Code (UBC) was unique among the model codes in its provisions for special inspectors. Commencing with the 1937 UBC, it sets forth a number of situations in which the employment of a special inspector is mandatory. For the first time, the owner was required to provide specially qualified inspectors for continuous inspection during construction in addition to called inspections provided by the municipality and in addition to periodic site visits provided by the architect or engineer. The International Building Code continues this practice and is included in the code in Chapter 17 of the 2003 IBC. In addition the IPC and NFPA 70 also require special inspections.

A special inspector is a person who has been approved by the building official to perform certain types of inspections. Use of special inspectors is intended for those areas of construction where strength, safety and construction practices are critical. The areas required by IBC Section 1704 that require special inspection generally include:

1. Steel Construction, Section 1704.3
2. Concrete Construction, Section 1704.4
3. Masonry Construction, Section 1704.5
4. Wood Construction, Section 1704.6
5. Soils, Section 1704.7
6. Pile Foundations, Section 1704.8
7. Pier Foundations, Section 1704.9
8. Wall Panels and Veneers, Section 1704.10
9. Spray Fire-resistant Materials, Section 1704.11
10. Exterior Insulation and Finish Systems, Section 1704.12
11. Special Cases, Section 1704.13
12. Smoke Control systems, Section 1704.14
13. Medical Gas per NFPA 99
14. Electric Per NFPA 70

These general areas include many sub categories that require special inspection. As an example Steel Construction would include welding, bolts, attachment details and any other item listed in Table 1704.3. Also, if the design engineer or building official deems any component or connection critical, it may be added to the Special Inspection Program that is to be attached to the building documents.

The use of special inspectors is not discretionary. IBC Section 1704.1 clearly states the conditions under which they must be utilized. However, special inspection for work of a minor nature may be waived by the building official.

It is the responsibility of the building official to determine the qualifications of special inspectors. This can be done in any manner satisfactory to the building official, and often includes written examinations, oral interviews and a review of relevant education and experience. While the IBC does not make specific requirements for the determination of an inspector's qualifications, the importance of being selective in this crucial process is not lessened.

Working under the direction of a registrant, a truly qualified special inspector usually has skills which significantly outpace the skills of regular municipal inspectors – except that they are ordinarily narrower in scope. For example, a municipal inspector is required to have a general knowledge of a great number of code requirements. This naturally limits one’s ability to specialize in knowledge in one area. Special inspectors, on the other hand, are able to devote their abilities to a limited subject and become more proficient in that subject. Special inspectors may be able to perform one category of inspections or several. Ability to perform inspections is gained by experience, training, certifications, and approval of the local building official. A list of approved inspectors is to be maintained by the local building official.

## **II. GENERAL PROGRAM**

### **A. Purpose of Special Inspection**

The purpose of special inspection is to provide inspection of those areas of construction where strength, safety and construction practices have been determined by the building code, engineer or architect of record, and/or the building official to be sufficiently critical to warrant inspection by a special inspector.

### **B. Definition of Special Inspection**

Special inspection is the monitoring of the materials and workmanship which are critical to the integrity of the building structure. It is the review of the work of the contractors and their employees to assure that the approved plans and specifications are being followed and that relevant codes and ordinances are being observed. The special inspection process is in addition to those conducted by the building official and by the engineer or architect of record as part of periodic structural observations. The special inspectors furnish continuous inspection at all times when required by Section 1704 of the IBC or by the engineer or architect of record.

### **C. Duties and Responsibilities of Program Participants**

A special inspection can be properly accomplished only when each participant understands and performs their specified duties and responsibilities. The necessary participants in special inspection include the Project Owner, Engineer or Architect of Record, Special Inspector, Building Official, and Contractor. To assist these participants in properly completing their function, the duties and responsibilities of each participant are defined as follows:

#### **1. Duties and Responsibilities of the Project Owner**

The project owner or the owner’s agent is responsible for funding special inspection services, including all required material testing. This shall also include providing a complete set of the approved plans and specifications to the special inspector. Code reference: IBC Section 1704.1

In retaining special inspectors, the project owner shall become familiar with the skills and minimum qualifications the special inspector is required by the building official to have in order to perform the special inspection services. The owner shall require that the special inspectors have these qualifications and skills. If necessary, the owner shall consult with, or seek advice from, his/her design professional as to the qualifications and skills required.

2. Duties and Responsibilities of the Engineer or Architect of Record

The engineer or architect of record has many duties and responsibilities related to special inspection activities. They include the following:

*a. Identify the need for special inspection services*

The engineer or architect of record is the team member who analyzes the critical elements of the design and identifies where special inspection is necessary in accordance with the IBC Section 106.1 and 1704.

The project plans and/or specifications which are submitted to the building official shall clearly indicate where special inspection is required. A Special Inspection Program is developed by the engineer or architect of record and attached to the construction documents.

*b. Develop the schedule of inspections*

The engineer or architect of record shall include a schedule of inspections in the construction documents.

*c. Recommend and assist in the selection of special inspectors*

The selection and qualifying of the special inspector can often be a difficult and challenging process. This procedure can be facilitated through the involvement of the engineer or architect of record in review of the following:

1. Qualifications of the special inspector (see Section IV for requirements);
2. The number of special inspectors required;
3. Procedures for testing in the field and shop;
4. Reporting procedures; and
5. Provision for supervision of the special inspector(s).

A list of approved special inspectors is maintained by the local jurisdiction. Any inspector may be used to perform inspections in approved categories with the approval of the engineer or architect of record.

*d. Acknowledge the testing and inspection agreement*

The engineer or architect of record or registrant responsible for special inspections shall seal and sign the Special Inspection Certificate. This acknowledgment provides the communications and understanding of special inspection services.

*e. Respond to field discrepancies*

Discrepancies which are not resolved in a timely manner or are about to be incorporated in the work must be brought to the attention of the engineer or architect of record and the building official. Uncorrected deficiencies observed by the special inspector shall be brought to their attention. The engineer or architect of record is instrumental in effecting the remedial process of deficiency correction. The engineer or architect of record is responsible for any design changes and for submission of such changes to the building official for approval, in addition to reviewing shop drawings which may detail structural information.

3. Duties and Responsibilities of the Special Inspector

Special inspectors are individuals with highly developed, specialized skills who observe those critical building or structural features which they are qualified to inspect. Duties of special inspectors include the following:

*a. Acknowledge the testing and inspection schedule*

Special inspectors shall verify that they understand their role and the scope of their responsibilities by acknowledging the Special Inspection Program.

The Special Inspection Program lists the special inspections required on the project and the special inspector responsible for each required special inspection and test. Written acknowledgment of the Special Inspection Program may be done by the completion of the Special Inspection Certificate or by the use of the Special Inspection Agreement form as shown in Appendix A.

*b. Signify presence at jobsite*

Special inspectors shall notify contractor personnel of their presence at the jobsite, and the type of inspection to be performed. Special inspectors shall sign in on the appropriate form posted next to the building permit. A sample Special Inspection Record is shown in Appendix A.

*c. Observe all work for which they are responsible to inspect*

Special inspectors shall inspect all applicable work for conformance with the building department approved (sealed) drawings and specifications and applicable provisions of the IBC.

*d. Identify nonconforming work*

Special inspectors shall bring nonconforming items of the work they inspect to the immediate attention of the contractor. If any such item is not resolved in a timely manner or is about to be incorporated in the work, it shall be noted in the special inspector's written report, a Discrepancy Notice shall be issued and posted noting the unresolved discrepancies, and the engineer or architect of record and the building official shall be notified immediately by telephone, in person or by any other appropriate means. Discrepancy Notices may be issued at the end of each day listing nonconforming items that have not been resolved.

A sample Discrepancy Notice is shown in Appendix A. Alternate forms may be approved by the building official.

*e. Provide timely reports*

The special inspector shall complete written inspection reports for each inspection visit and provide the reports on a timely basis, as determined by the building official, directly to the building official, engineer and architect of record and others as designated. These reports should be organized in a daily format and should contain the following:

1. Description of inspections and locations;
2. List nonconforming items brought to the contractor's attention;
3. Indicate how nonconforming items were resolved;
4. List unresolved items, including as a minimum;
  - Description and location;
  - Expressed intent of contractor;
  - Reference to applicable requirements of approved plans and/or specifications;
  - Name and title of each party notified and time and method of notification;
4. List changes involving the work requiring special inspection that were authorized by the engineer or architect of record and approved by the building official.

Sample Daily Report Forms are shown in Appendix A. Alternate forms may be approved by the building official.



*a. Submit final signed reports*

Special inspectors shall submit signed Final Reports to the building official stating that all items requiring their special inspection were completed, reported, and, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, approved change orders, and the applicable provisions of the IBC. Work not in conformance, unresolved items, or any discrepancies in inspection coverage (i.e., missed inspections, periodic inspections when continuous was required, etc.) should be specifically itemized in the Final Report. A sample Final Report form is shown in Appendix A. Alternate forms may be approved by the building official.

5. Duties and Responsibilities of the Building Official

Of all the team members in the development process, the building official is the only member who has the legal authority to see that all of the provisions of special inspection are carried out. This is clearly identified under the administrative provision of Section 104.1 of the IBC which states, "The building official is hereby authorized and directed to enforce all the provisions of this code."

The specific provisions of providing for special inspection services are mandatory under Section 109.1 which references Section 1704.1 and states in part, "Construction or work for which a permit is required shall be subject to inspection by the building official." Certain types of construction are required to have continuous inspection as specified in Section 1704 of the IBC.

The specific duties and responsibilities of the building official relating to special inspection are identified in IBC Section 1704.1. The building official's responsibilities related to special inspection include the following:

*a. Review and examine plans, specifications and contract documents for compliance with special inspection requirements*

The building official is charged with the legal authority to review the plans and specifications for compliance with the requirements of the IBC Sections 105.3.1, 106.3.

*b. Communicate additional special inspection requirements to the development team*

Once special inspection requirements, in addition to those specified on the plans by the engineer or architect of record, are identified in the plan approval process, the building official shall communicate the additional requirements to the development team. The building official may also require a preconstruction conference to review the conditions of special inspection.

*c. Approve the special inspector*

Since special inspectors observe specialized work, they must possess very specialized skills. Therefore, special inspectors must be competent individuals, qualified in the areas they are to inspect, and approved by the building official to observe the work assigned. Minimum qualifications for special inspectors are listed in Section IV. The building official shall notify the engineer or architect of record if special inspectors are changed from those listed in the special inspection program.

*d. Monitor the special inspection activities*

The building official should monitor the jobsite to see that special inspection is continuous where required and that an adequate special inspection staff is present depending upon extent and complexity of the project.

*e. Review inspection reports*

The building official receives, reviews and makes the inspection reports part of the inspection records.

*f. Receive the final reports*

The Certificate of Occupancy shall not be issued until all final reports have been received and accepted by the building official.

6. Duties and Responsibilities of the Contractor

The contractor's duties include the following

*a. Provide schedule of work*

The contractor shall provide the engineer or architect of record, special inspector, testing laboratories, etc., with a proposed schedule of work prior to the start of construction, and with revised schedules as they occur.

*b. Complete all work in conformance with the approved plans*

The contractor is responsible for completing all work in conformance with the building department approved (sealed) drawings and specifications, and applicable provisions of the IBC.

*c. Notify the special inspector*

The contractor shall notify the special inspector when the phase of work requiring special inspection is scheduled to begin. Adequate notice shall be provided so that the special inspector has time to become familiar with the work to be inspected, and to arrange his or her work schedule to coincide with

the construction schedule. All work must be approved by the local building inspector prior to concealing work regardless of special inspection approval unless waived by the building official.

*d. Provide access to approved plans*

The contractor is responsible for providing the special inspector with access to approved plans at the jobsite. The contractor shall provide the special inspector with a copy of all engineer of record approved, or reviewed, shop drawings.

*e. Provide access to areas of special inspection*

The contractor is responsible for providing safe access to special inspection areas by means of ladders, work platforms, automated lifts, or other suitable means, as mutually agreed to with the special inspector.

*f. Retain special inspection records*

The contractor is responsible for retaining at the jobsite all special inspection records submitted by the special inspector, and providing these records for review by the building official upon request.

*g. Correct all nonconforming work*

The contractor is responsible for correcting or resolving all nonconforming work.

### **III. PROCEDURES FOR SPECIAL INSPECTIONS**

#### **A. Employment**

1. The owner or the owner's agent shall employ the special inspector.
2. The special inspector shall not be in the employ of the contractor, subcontractor or material supplier.
3. In the case of an owner/contractor, the special inspector shall be employed as specified by the building official.
4. Exceptions to these requirements shall be subject to the review and approval of the building official.

#### **B. Inspections Required by IBC Section 109 & Section 1704**

The employment of a special inspector shall not be deemed to relieve the building official or the contractor of their responsibilities for called inspections as required by the code. Called inspections cannot be delegated to the special inspector; however, the jurisdiction inspectors should not sign off on work involving special inspection, without the concurrence of the special inspector.

#### **C. Performance**

1. The special inspector shall remain on the job at all times when work requiring inspection is in progress, unless periodic inspection has been authorized by the building official.
2. The building official should verify the work of the special inspector. Jobsite verification should be done, at a minimum, in conjunction with called inspections routinely performed by the jurisdiction. All questions relative to code requirements, interpretations of, or modifications/changes to the approved plans, should be referred to the building official for determination.

#### **D. Nonconformance Procedure**

When the special inspector observes nonconforming work occurring (or about to occur) the following steps shall be taken:

1. Notify the contractor's representative of the nature of the discrepancy and what the code or approved plans require.
2. If the contractor then chooses to proceed with the discrepancy, the special inspector shall do the following:
  - a. Immediately notify the building official by telephone or other means of the nature of the discrepancy.
  - b. Notify the engineer or architect of record.

- c. Prepare a discrepancy notice and post at the jobsite next to the building permit (a sample notice is shown in Appendix A, alternate forms may be approved by the building official)

## **E. Written Reports**

The special inspector shall leave a copy of daily inspection reports at the job site for review by the building official, the engineer or architect of record, and any other persons designated by the building official. Uncorrected deficiency reports shall be submitted to the building official and the engineer or architect of record immediately. The forms used may be those shown in Appendix A or may be approved by the building official if another format contains all the required information.

## **IV. SPECIAL INSPECTORS**

### **A. Approval**

1. Purpose: The purpose of approving special inspectors is to assist owners in selecting qualified inspectors. By providing a list of qualified inspectors, the building official benefits owners and the general public. This procedure insures that critical structural elements are inspected by competent personnel.
2. Authority: The International Building Code and the Uniform Administrative Code are publications of the International Code Council, and have been adopted by the governing bodies.
3. Disclaimer: Listing of approved special inspectors is for the purpose of providing status information to owners, the general public, and the construction community. Listing does not constitute an endorsement nor recommendation for the use of a particular inspector.

Approval as a special inspector does not certify, nor should it be construed to certify, that all inspections completed by an approved special inspector are adequate, appropriate or correct for any construction project.

4. Application: Individuals possessing the minimum qualifications, and wishing to become designated as an approved special inspector shall submit applications on forms provided by the building official for each type of inspection for which approval is sought. Accompanying each application shall be the following:
  - a. Application shall include the name and resumes of Registered Professional Engineer(s) responsible for inspection and testing

activities evidencing experience criteria per ASTM E329 paragraph 7.2.1:

- b. A copy of the applicant's certification or registration papers for the category of inspection being applied for (ICBO, ICC, ATI, NICET Structural or Civil Engineer, Architect, etc.)
- c. Verification of the applicant's work experience.

Applications shall be submitted to the building official of the jurisdictions adopting these procedures. Inspectors approved by one jurisdiction may or may not necessarily be recognized as approved inspectors by other jurisdictions.

5. Examination of Application: The building official shall review the applications to determine whether the applicant possesses the minimum qualifications sufficient to justify approval and listing. In making this determination, the building official shall consider the certifications, experience, education, and training, of the applicant, and other pertinent factors.
6. Pre-Approval Interview: Following review of the application and prior to approval of an inspector, the building official may conduct, or cause to be conducted, a personal interview.

The personal interview shall evaluate the applicant's work experience and suitability to be a special inspector.

7. Rejected Application: Any applications rejected by the building official shall be returned to the applicant together with the reason(s) for rejection in writing.
8. Term of Approval: Approval of a special inspector shall be valid as long as professional registrations and certifications are maintained.
9. Suspension, Revocation or Termination: Approvals may be suspended, revoked or terminated if:
  - a. The special inspector exhibits a pattern of consistently providing inspections below the standards specified in the Job Task Listings on file with the jurisdiction.
  - b. The special inspector engages in conduct that violates the statutes, rules or regulations of the Arizona Registrar of Contractors and/or the Arizona State Board of Technical Registration.
  - c. The special inspector is convicted of a felony.
  - d. The certification or registration required for approval has been suspended, revoked, terminated or has expired.

- e. The building official determines that any activity of the special inspector creates a hazard to the health, safety or welfare of the public.

The process for determining the action the building official may take concerning action for the above behaviors shall be as follows:

- a. The building official may, depending upon the circumstances and investigation, use any of the following:
  1. Verbal warning may be used and shall involve the special inspector and the directing registrant.
  2. Written warning issued to the special inspector and the directing registrant.
  3. Assign a probationary period that allows the special inspector to perform inspections only under the supervision of another special inspector or the directing registrant.
  4. Suspension for a period of time. The special inspector may not perform special inspections or may be limited to certain categories for which he/she is qualified.
  5. Revocation of the ability to perform special inspections may apply in serious circumstances.

When one building official takes an action he/she shall report the incident to the other building officials subscribing to this program. Those building officials may take similar action or any other action within their jurisdiction. The list of approved special inspectors shall note action taken by any jurisdiction.

10. Rights of Appeal: Special inspectors who have had their application rejected or their approval suspended, revoked or terminated shall have the right of appeal afforded in the International Building Code, or the Uniform Administrative Code, adopted by the jurisdiction.

11. Renewal and Reinstatement: Special inspectors applying for reinstatement of a suspended approval shall submit an application not less than 30 days prior to the termination of the suspension. Accompanying the application shall be a statement describing in detail what action the inspector has taken to correct the deficiencies that caused the suspension.

Special inspectors that have approval revoked or terminated shall submit applications as required for a new applicant, except that a statement describing in detail what actions have been taken to correct the deficiencies that caused the termination or revocation shall accompany the application. The building official may issue probationary approvals, valid for less than the standard term of approval, to special inspectors that previously had their approval revoked or terminated.



## **B. Minimum Special Inspector Qualifications**

### 1. Competency Standards

The building official has the responsibility to determine that special inspectors are qualified for the type of inspection required. Licensed engineers and architects may be considered qualified based upon their registration. The registrant shall only perform work for which he/she is qualified, as noted in the Rules and Codes of the State Board of Technical Registration. Minimum qualifications for the different categories of special inspection for those persons other than a licensed professional actually performing the inspections shall include the following certifications:

1. Fabricators -varies by product
2. Steel Construction – Welding
  - ICC Structural Steel and Welding Special Inspector or AWS certified Welding Inspector
3. Steel Construction – Details
  - ICC Structural Steel and Welding Special Inspector or AWS certified Welding Inspector
4. Steel Construction – High Strength Bolts
  - ICC Structural Steel
5. Concrete Construction
  - ICC Reinforced Concrete Special Inspector
6. Masonry Construction
  - ICC Structural Masonry Special Inspector
7. Wood Construction
  - ICC Building Inspector
  - ICC IRC Building Inspector or any ICC Special Inspection certified or applicable experience.
8. Soils (special grading, excavation and filling)
  - NICET Level II or ATI, or other similar state certificate may be accepted by the Building Official, or higher Certified Technician in Soils under the direct supervision of Registered Civil (geotechnical) Engineer
9. Pile Foundations

-NICET Level II or higher Certified Technician in Soils under the direct supervision of Registered Civil (geotechnical) Engineer, or other similar state certificate may be accepted by the Building Official,

10. Pier Foundations

- ICC Reinforced Concrete Special Inspector and,  
- NICET Level II or higher Certified Technician in Soils under the direct supervision of Registered Civil (geotechnical) Engineer, or other similar state certificate may be accepted by the Building Official,

11. Wall Panels and Veneers

- ICC Structural Masonry Special Inspector

12. Sprayed Fire-Resistant Materials

-ICC Spray Applied Fireproofing Special Inspector

13. Exterior Insulation and Finish Systems (EIFS)

-ICC Building Inspector  
-IRC Building or any ICC Special Inspector Certified  
-Factory certified installer or Manufactures representative

14. Post Installed Anchors

-ICC Building Inspector or  
-ICC Reinforced Concrete Special Inspector  
-ICC Structural Masonry Special Inspector

15. Residential Post Tension Foundations

- ACI Level 1, PTI certification, significant experience, ICC post tension certification

16. Smoke Control Systems

-ICC Building Inspector or  
-ICC Mechanical Inspector

17. Medical Gas – See NFPA 99

18. Electric – See NFPA 70

2. Experience Standards

In addition to the certification noted above, the special inspector shall have a minimum of two years construction inspection experience acceptable to the building official or education and construction experience as an equivalent. The building official may require that special inspector

applicants provide evidence of experience through the following means:

- a. Written references verifying experience. References shall include employer, immediate supervisor, dates of employment, projects inspected, and types of inspections completed.
- b. Personal interview to evaluate the applicant's work experience and suitability to be a special inspector.

## **V. PHASING OF SPECIAL INSPECTOR QUALIFICATIONS**

The following phases are recommended for establishing minimum special inspector qualifications during the time periods noted. These phases allow the new system to be implemented over a two year period so that current inspectors have adequate time to become certified.

### **Phase 1 Requirements – July 2004 to December 2005**

1. Registration as a Professional Engineer or Architect in the State of Arizona, or
2. Applicant's resume on file with the issuing jurisdiction demonstrating relevant experience in the inspection field, and a letter of recommendation signed and sealed by two (2) registered professionals intimately familiar with the applicants relevant experience, or
3. Applicant's resume on file with the issuing jurisdiction demonstrating relevant experience in the inspection field for applicants working in the field under the direct supervision of, and with a letter of recommendation signed and sealed by a registered professional intimately familiar with the applicants relevant experience, or
4. Completion of applicable certification as specified in Section IV.B, and a minimum of two (2) years construction inspection experience acceptable to the building official.

### **Phase 2 Requirements – After June 2006**

Registration or Certification as specified in Section IV.B, and a minimum amount of construction inspection experience acceptable to the building official.

# **APPENDIX A – FORMS**

**These forms are guidelines for developing forms used by Special Inspection companies and inspectors.**

**The “Special Inspection Certificate” is the preferred form that may be used as the sole agreement between the parties concerned with special inspections. This form has areas for the registrant’s seals, and area for listing the categories and names of special inspectors. This form is complimented by a “Procedure Summary” and “Commentary” to aid the parties in understanding the form.**

**SPECIAL INSPECTION DAILY REPORT**  
**Town of Oro Valley**

Project Name/Address: \_\_\_\_\_ Bldg. Permit No.: \_\_\_\_\_  
Inspection Type(s)/Coverage: \_\_\_\_\_

( ) Continuous ( ) Periodic      Weather: \_\_\_\_\_      Temp: \_\_\_\_\_ F

Time Beginning Inspection: \_\_\_\_\_      Time Ending Inspection: \_\_\_\_\_

Describe Inspections Made, Including Specific Locations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List Tests Made or Observed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List Non-Conforming Items, including how resolved: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List Unresolved Items: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Correction of Previously Listed Non-Conforming Items, including date of original listing: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Previously Listed Uncorrected Items: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List Changes to Approved Plans Authorized by Architect or Engineer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To the best of my knowledge, work inspected was in accordance with the building department approved design drawings, specifications and applicable workmanship provisions of the I.B.C., except as noted above:

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

Print Full Name: \_\_\_\_\_      Regist./Certif. No.: \_\_\_\_\_

This report to remain at jobsite with the contractor for review by the building department's inspector.

Distribution (check where applicable):

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Architect of Record | <input type="checkbox"/> General Contractor | <input type="checkbox"/> Jurisdiction Inspector |
| <input type="checkbox"/> Engineer of Record  | <input type="checkbox"/> Sub Contractor     | <input type="checkbox"/> Building Official      |
| <input type="checkbox"/> Owner               |   |   |

**SPECIAL INSPECTION FINAL REPORT**  
**Town of Oro Valley**

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

Bldg. Permit No.: \_\_\_\_\_

Address: \_\_\_\_\_

( ) Continuous ( ) Periodic

To Whom It May Concern:

This is to certify that I performed special inspection on the following portions of work for the above noted project: \_\_\_\_\_

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Based upon my personal observations and written reports, it is my judgment that the inspected work was performed, to the best of my knowledge, in accordance with the building department approved design drawings, specifications, approved change orders, and applicable workmanship provisions of the International Building Code, except as noted below.

Items not in conformance, unresolved items, or discrepancies in inspection coverage include the following: \_\_\_\_\_

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Signed: \_\_\_\_\_

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

Print Full Name: \_\_\_\_\_

Regist./Certif. No.: \_\_\_\_\_

Distribution (check where applicable):

- Architect of Record
- Engineer of Record
- Owner

- General Contractor
- Sub Contractor

- Jurisdiction Inspector
- Building Official

Include with the Special Inspection  
Certificate at final







## SPECIAL INSPECTION CERTIFICATE 2003 IBC

Project Name:	Date:
Project Address:	Permit No. (When Applicable)

**CERTIFICATE OF SPECIAL INSPECTION BY OWNER**  
*(To be filled in and signed by the owner before permit is issued.)*

In accordance with Section 1704 of the 2003 International Building Code as adopted and amended by the Town of Oro Valley, that requires the execution of certain construction work be placed under the inspection of the architect, engineer, or special inspector appointed by me, I certify that the construction of the above described building project will receive such special inspection on my behalf.

Name of Architect (if any):	Contractor:
Name of Structural Engineer:	Signature of Owner or Legal Agent:

**SPECIAL INSPECTION RESPONSIBILITY CERTIFICATE**  
*(To be filled in and sealed before building permit is issued.)*

I certify that I am familiar with the plans and specifications of the above named project and, in accordance with Section 1704 of the 2003 International Building Code as adopted and amended by the Town of Oro Valley, I hereby assume responsibility for carrying out the required special inspection. Inspection reports will be filed with the Building Official as required by Section 1704.1.2. The following individual(s) will be special field inspectors(s) under my direct supervision and are to be on the job site to render complete and competent inspection.

**Category**

**Special Inspector**


Place Registration Seal and Signature Above.

**SPECIAL INSPECTOR QUALIFICATIONS [2003 IBC 1704.1.2] ARE APPROVED:** \_\_\_\_\_  
 \_\_\_\_\_ **As named by the E/A of record. OR** \_\_\_\_\_ **E/A notified of change of inspectors** \_\_\_\_\_ **Building Official** \_\_\_\_\_ **Date**

**CERTIFICATE OF COMPLIANCE AND APPLICATION FOR CERTIFICATE OF OCCUPANCY**  
*(To be filled in and sealed before occupancy certificate is issued.)*

The construction of the above named project is substantially complete and request is hereby made for issuance of the certificate of occupancy per Section 110 of the 2003 International Building Code as adopted and amended by the Town of Oro Valley.

I certify that, to the best of my knowledge, the requirements of the approved plans for which special inspection is required and Section 1704 of the 2003 International Building Code as adopted and amended by the Town of Oro Valley have been met. A guarantee that the contractor has necessarily fulfilled the obligations of his contract is neither intended nor implied.

Architect or engineer Responsible for Inspection:

Place Registration Seal and Signature Above.

## SPECIAL INSPECTION PROCEDURE SUMMARY

The following Special Inspection Procedure shall be followed where Chapter 1704 of the International Building Code 2003 (IBC) requires special inspection or where the engineer of record requires special inspection. This summary is an addendum to the Special Inspection Guidelines currently in use in jurisdictions within Pima County. This procedure shall be followed in detail.

- I. Special Inspection Program. A special inspection program as defined in IBC Section 1704.1.1 and prepared by the registered design professional(s), shall be submitted *on the contract drawings*. The program(s) shall contain the following minimum information:
  - a. A list of materials and/or categories of work requiring special inspections (i.e. concrete, masonry, etc.)
  - b. A list of the specific inspections to be performed (i.e. concrete placement, reinforcing steel, grouting operations, etc.)
  - c. A list of individuals or firms intended to conduct the inspections.
  
- II. Special Inspection Certificate. A special inspection certificate(s) shall be submitted to the building official prior to issuance of a building permit, that incorporates all special inspection categories required by the Special Inspection Program(s). The certificate(s) shall be filled out in the following sequence:
  - a. The owner shall indicate the engineer/architect of record, if any, and the name of the general contractor. By placing his signature on the form, the owner acknowledges that the special inspector has been employed on his behalf.
  - b. The engineer/architect of record or the engineer/architect who has been designated by the owner to assume responsibility for special inspections, shall stamp and sign the certificate. The special inspectors who are assigned to perform the field inspections shall be listed along with the categories for which each inspector is responsible.
  - c. The building official shall sign the special inspection certificate acknowledging that the special inspectors are qualified and have demonstrated their competence to the satisfaction of the local building official and is named on the approved inspectors list. The building official shall also verify that the special inspector is the same as designated by the special inspection program. If an alternate special inspector has been approved, the building official shall indicate that the engineer or architect of record has been so notified.
  - d. After all inspections are complete, the registered professional that assumed responsibility for special inspections shall again stamp and sign the certificate indicating that the work was done in conformance with the approved construction documents. The completed Special Inspection Certificate shall then be returned to the building official along with a record of each inspection that contains the information required by IBC Section 1704.1.2.

## SPECIAL INSPECTION PROCEDURE COMMENTARY

The Special Inspection Procedure is based on the requirements of Chapter 1704 of the International Building Code 2003 and local policy that requires a registered professional to oversee and be responsible for the special inspection process. This procedure spells out the step-by-step course of action that the owner must take, whenever special inspection is prerequisite to acquiring a building permit. The procedure is intentionally similar to the process currently in use by jurisdictions within Pima County, but is modified to more closely meet new code requirements. To make it enforceable by the building official, straight forward for the owner to execute and meet the design professional's objectives, the procedure is relatively simple and the changes are minimal. The following comments explain the philosophy behind the procedure and its requirements.

- I. Special Inspection Program. The requirement to place the Special Inspection Program on the drawings is defined in IBC Section 1704.1.1. The information required to be in the Program is also defined. Placing the Special Inspection Program on the construction plans puts it at the fingertips of the owner, building official, special inspector, building inspector, and contractor during all phases of review and construction.
  - a. A list of materials and/or categories of work requiring special inspections establishes the qualifications and type of inspectors required.
  - b. For the program to be successful, the inspectors and contractor must understand the exact intent of the design professional. The list of inspections to be performed must be specific and complete.
  - c. The design professional understands better than anyone, the inspection needs of any given project. It is, therefore, important and appropriate for the engineer/architect of record to recommend the inspectors who are best qualified to accomplish the necessary inspections. If the owner deviates from the program recommendations the building official and the engineer or architect of record should both approve of the alternate inspectors.
- II. Special Inspection Certificate. The Special Inspection Certificate is the heart of the Program.
  - a. It defines the roll of the owner. It requires the owner to acknowledge the Special Inspection Program and name the other parties involved in the construction process. The registrants are named and the contractor identified. The owner or legal representative signs the form. The form clarifies the fact that the special inspectors work for the owner and not the contractor, as required by IBC Section 1704.1.
  - b. The next section identifies the special inspectors by name and specific category of inspection they will be responsible to perform. This section also requires that the registrant responsible for the execution of the Special Inspection Program seal and sign the form. Registrants may execute the special inspection program if they are included in the registry of approved special inspection companies.
  - c. The building official shall verify by signing the form that those special inspectors listed on the certificate are qualified to perform the category of inspection they are assigned and that they are the inspectors listed in the Special Inspection Program shown on the approved plans. The local building official is required to ensure the competence of the special inspectors under IBC Section 1704.1. After reviewing the experience, training, and certifications of special inspectors the building official determines the approved categories for each inspector and places their name on a published list of approved Special Inspection Companies and Inspectors. If the owner places alternate inspectors

on the certificate other than those listed on the Program the building official shall notify the engineer or architect of record.

- d. The bottom of the Special Inspection Certificate is to be completed prior to issuance of a Certificate of Occupancy. The registrant responsible for executing the Program shall seal and sign the certificate indicating that construction of the project is substantially complete and the special inspection requirements of the approved plans have been met according to IBC Section 1704.
- e. It is imperative that accurate records be kept of all inspections. The Special Inspection Guidelines provides sample forms that may be used for various reports. IBC Section 1704.1.2 requires a final report be submitted to the building official at a determined time.

STRUCTURAL TESTS AND SPECIAL INSPECTIONS

TABLE 1704.3

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION				
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD <sup>a</sup>	IBC REFERENCE
1. Material verification of high-strength bolts, nuts, and washers:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	—	X	Applicable ASTM material specifications: AISC 335, Section A3.4, AISC LRFD, Section A.3.3	—
b. Manufacturer's certificate of compliance required.	—	X	—	—
2. Inspection of high-strength bolting:				
a. Bearing-type connections.	—	X	AISC LRFD Section M2.5	1704.3.3
b. Slip-critical connections.	X	X		
3. Material verification of structural steel:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	—	—	ASTM A 6 or ASTM A 568	1708.4
b. Manufacturers' certified mill test reports required.	—	—		
4. Material verification of weld filter materials:				
a. Identification markings to conform to AWS specification in the approved construction documents.	—	—	AISC, ASD, Section A3.6; AISC LRFD, Section A3.5	—
b. Manufacturer's certificate of compliance required.	—	—	—	—
5. Inspection of welding:				
a. Structural steel	—	—		
1) Complete and partial penetration & groove welds	X	—	AWS D1.1	1704.3.1
2) Multi-pass fillet welds	X	—		
3) Single-pass fillet welds >5/16" (7.9mm)	X	—		
4) Single-pass fillet welds ≤5/16" (7.9mm)	—	X		
5) Floor and deck welds	—	X	AWS D1.3	—
b. Reinforcing steel:	—	—		
1) Verification of weldability of reinforcing steel other than ASTM A 706.	—	X	AWS D1.4 ACI 318:3.5.2	1903.5.2
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.	X	—		
3) Shear reinforcement.	X	—		
4) Other reinforcing steel	—	X		
6. Inspection of steel frame joint details for compliance with approved construction documents:				
a. Details such as bracing and stiffening.	—	X	—	1704.3.2
b. Member locations.	—	—		
c. Application of joint details at each connection.	—	—		

For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section 1707.1, Special inspection for seismic resistance.

TABLE 1704.4  
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. Inspection of reinforcing steel, including pre-stressing tendons, and placement.	—	X	ACI 318: 3.5, 7.1-7.7	1903.5, 1907.1, 1907.7, 1914.4
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5B.	—	—	AWS D1.4 ACI 318:3.5.2	1903.5.2
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased.	X	—	—	1912.5
4. Verifying use of required design mix.	—	X	ACI 318: Ch. 4, 5.2-5.4	1904, 1905.2-1905.4, 1914.2, 1914.3
5. Sampling fresh concrete and performing slump, air content and determining the temperature of fresh concrete at the time of making specimens for strength tests.	X	—	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1905.6, 1914.10
6. Inspection of concrete and shotcrete placement for proper application techniques.	X	—	ACI 318: 5.9, 5.10	1905.9, 1905.10, 1914.6, 1914.7, 1914.8
7. Inspection for maintenance of specified curing temperature and techniques.	—	X	ACI 318: 5.11-5.13	1905.11, 1905.13, 1914.9
8. Inspection of pre-stressed concrete: a. Application of prestressing forces. b. Grouting of bonded pre-stressing tendons in the seismic-force-resisting system.	X X	—	ACI 318: 18.18 ACI 318: 18.16.4	—
9. Erection of pre-cast concrete members.	—	X	ACI 318: Ch. 16	—
10. Ventilation of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	—	X	ACI 318: 6.2	1906.2

# **APPENDIX B**

## **TASK LISTINGS**

**The job tasks listed in this appendix are intended to represent the basic inspection tasks and do not necessarily describe every detail of the job descriptions. For more specific analysis, one should consult the International Building Code (IBC), local codes, and/or regulations applicable to the task in question. The Special Inspection Program as shown on the construction documents should contain the information required to perform special inspections on any particular project.**

**JOB TASK LISTINGS**  
**GENERAL INSPECTION PRACTICE**

The following listed tasks may be applicable to all work requiring Special Inspection.

**I. PRE-INSPECTION FUNCTIONS**

The following tasks shall be performed prior to commencement of inspection, or prior to inspection of specific areas of the work:

1. Plans & Standards  
Obtain and review complete set of approved plans and specifications, including all addenda and approved change orders thereto. Review and become familiar with applicable Codes and Standards.
2. Test Specimen Selection Procedure  
Confirm the method of randomly selecting material test specimens in accordance with applicable standards, if required.
3. Pre-inspection meetings  
Attend meetings or discuss with contractor, sub-contractor(s), supplier(s) to review special inspection requirements of plans and specifications as required.

**II. INSPECTION FUNCTIONS**

The following tasks should be performed during special inspection of the work:

1. Presence at Job  
Be present for continuous or periodic inspection, as required, during execution of all work for which the special inspector has been engaged.
2. Inspection Report  
Prepare a Special Inspection Report after each site visit providing details of the inspections performed and distribute as required.
3. Nonconforming Work  
Notify contractor when work does not conform to plans and specifications.
4. Uncorrected Nonconforming Work  
Notify the building official and engineer or architect of record when nonconforming work is not corrected.



**JOB TASK LISTINGS  
FABRICATORS**

Special Inspections shall be performed in accordance with IBC Section 1704.2, Table 1704.3, and Section 1707.

**JOB TASK LISTINGS  
STEEL CONSTRUCTION - WELDING**

Special Inspections shall be performed in accordance with IBC Section 1704.3.1, Table 1704.3 (Items 3, 4, and 5), and Section 1707.

**JOB TASK LISTINGS  
STEEL CONSTRUCTION - DETAILS**

Special Inspections shall be performed in accordance with IBC Section 1704.3.2, Table 1704.3 (Item 6), and Section 1707.

**JOB TASK LISTING  
STEEL CONSTRUCTION - HIGH STRENGTH BOLTS**

Special Inspections shall be performed in accordance with IBC Section 1704.3.3, Table 1704.3 (Items 1 and 2), and Section 1707.

**JOB TASK LISTINGS  
CONCRETE CONSTRUCTION**

Special Inspections shall be performed in accordance with IBC Section 1704.4, Table 1704.4, and Section 1707.

**JOB TASK LISTINGS  
MASONRY CONSTRUCTION**

Special Inspections shall be performed in accordance with IBC Section 1704.5, Tables 1704.5.1 and 1704.5.3, and Section 1707.

**JOB TASK LISTINGS**  
**WOOD CONSTRUCTION**

Special Inspections shall be performed in accordance with IBC Section 1704.6 and Section 1707.

**JOB TASK LISTINGS**  
**SOILS**  
**(SPECIAL GRADING, EXCAVATION AND FILLING)**

Special Inspections shall be performed in accordance with IBC Section 1704.7.

To Assist In Performing This Inspection, The Following Job Tasks Have Been Identified:

Site Preparation

Verify clearing and grubbing of deleterious materials, and that the site has been benched or sloped in accordance with the plans and specifications.

Over excavation

Verify over excavation location, width, and depth into proper soil materials when required.

Scarification

Verify scarification for proper depth, moisture conditioning and compaction when required.

Fill Materials

Verify fill materials for type, gradation, and moisture content.

Fill Placement

Observe, and test as required, fill placement, compaction, moisture conditioning, and slope configuration.

**JOB TASK LISTINGS**  
**PILE FOUNDATION**

Special Inspections shall be performed in accordance with IBC Section 1704.8.

**JOB TASK LISTINGS  
PIER FOUNDATION**

Special Inspections shall be performed in accordance with IBC Section 1704.9.

**JOB TASK LISTINGS  
WALL PANELS AND VENEERS**

Special Inspections shall be performed in accordance with IBC Section 1704.10 and Section 1707.

**JOB TASK LISTINGS  
SPRAYED FIRE-RESISTANT MATERIALS**

Special Inspections shall be performed in accordance with IBC Section 1704.11.

**JOB TASK LISTINGS  
EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)**

Special Inspections shall be performed in accordance with IBC Section 1704.12.

**JOB TASK LISTINGS**  
**SPECIAL CASES**  
**POST-INSTALLED ANCHORS**

**INTRODUCTION**

Prior to consolidation of the three model building codes, BOCA, ICBO and SBCCI, the International Conference of Building Officials (ICBO) provided Evaluation Services and Evaluation Reports (ES Reports) for various building materials and products. The consolidation of all evaluation services (ICBO ES, NES, SBCCI PST & ESI, and BOCAI evaluation services) into ICC Evaluation Service, Inc. (ICC-ES) occurred on February 1, 2003. The evaluation reports now have the status of ICC-ES "Legacy Reports." ICC-ES is a subsidiary of the International Code Council

Generally, it is necessary to develop ICC-ES acceptance criteria for products that are structural in nature and/or affect life-safety. Acceptance criteria are developed by the ICC-ES technical staff in consultation with the report applicant; are the subject of open public hearings of the ICC-ES Evaluation Committee (made up entirely of code officials); and must be approved by the committee. Acceptance criteria are used as the basis for evaluating a product, and establishing conditions of acceptance in an evaluation report, when the product type is not clearly addressed in existing codes and code-related documents.

While the former evaluation services were integrated into ICC-ES on February 1, it will take some time to fully consolidate operations. The ICC-ES web site provides further information.

Under ICC-ES rules,

- Existing evaluation reports (for example, reports originally issued by ICBO ES) that are re-examined with no changes, or with editorial changes only, will be processed as ICC-ES legacy reports. Re-examinations that involve technical changes, on the other hand, will be processed as new ICC-ES reports. (Report holders have an option of maintaining their existing recognition in a legacy report while securing the new recognition by applying for a new ICC-ES report.)
- The former ICBO ES Evaluation Committee is now the ICC-ES Subcommittee on Uniform Codes. The Subcommittee will cease to exist after its meeting in October 2003, and acceptance criteria that have not been approved by that date will be completed by the new ICC-ES Evaluation Committee.

[ICBO Evaluation Service](http://www.icbo.org) (ICBO ES) has made its entire library of product evaluation reports available on the internet, enabling access to read or print any ES Report at no charge. Visit [www.icbo.org](http://www.icbo.org) or [www.icc-es.org](http://www.icc-es.org).

For additional information, call (562) 699-0543.

## **EXECUTION**

### Post Installed Anchors

All post installed anchors shall have a current ICC Evaluation Service report.

Post installed anchors shall include the following:

- Bolts or dowels utilizing epoxy adhesive which are installed in cured concrete, masonry, or wood.
- Expansion bolts installed in cured concrete or masonry.
- Other manufactured anchors used in structural applications which are required to have Special Inspection during installation.

### Installation Instructions

Special Inspector shall obtain ICBO-ES Report, ICC-ES Legacy Report, or ICC-ES Report (as applicable) for the type and brand of product or material being inspected. Special Inspection and installation of post installed anchors shall be in accordance with ES Reports.

To Assist In Performing This Inspection, The Following Job Tasks Have Been Identified:

### Anchor Location

Verify approximate horizontal and vertical location of anchor(s) as required in project plan.

### Anchor

#### Type

- Verify bolt vs. reinforcing steel and required grade of steel.

#### Size

- Verify diameter and length.

#### Condition

- Verify that anchors are free of oil, dirt, loose rust, loose dry mortar, or damage.

### Epoxy

#### Type

- Verify epoxy to be used is the brand and type specified or, if not specified, meets the requirements cited above.

#### Condition

- Verify epoxy does not indicate signs of being exposed to adverse weather conditions including, but not limited to, excessive heat or cold or exposure to rain.

### Hole

#### Size

- Verify diameter and depth of drilled hole.

#### Condition

- Verify hole is clean, dry, and free of debris. Verify contractor has cleaned holes using clean, oil-free compressed air, a wire brush and then compressed air again as required by project requirements or, if none, by manufacturer's recommendations.

Visual Inspection

- Verify application of epoxy to bottom of hole and during withdrawal.
- Verify insertion of anchor to proper depth with proper length extending out of hole.
- Verify proper coating of anchor by noting extrusion of epoxy from hole and twisting to coat entire anchor.

**JOB TASK LISTINGS**

**SPECIAL CASES**

**RESIDENTIAL POST-TENSIONED CONCRETE SLABS**

**Special Inspections shall be performed in accordance with IBC Section 1704.4, Table 1704.4, and Section 1707.**

To Assist In Performing This Inspection, The Following Job Tasks Have Been Identified:

Approved Plans

- Obtain construction document drawings approved for the specific lot by the building official. Verify presence of standard plan and any option plans.

Concrete Mix Designs

- Obtain engineer of record approved mix designs.

**Pre-Slab Inspection**

Soil Preparation & Excavations

- Verify proper compaction and testing of sub-grade soils. Verify foundation excavations for proper location, length, width, depth below native or finish grade for all exterior wall footings, interior column footings, point load footings, shovel trenches, pot shelves, shear wall footings, and footings for anchor bolts for hold downs. Verify proper transitions of the base (finished subgrade). Verify removal of loose soil materials.

Form Work

- Verify form work for proper location, width, length, and height; slab thickness; elevation changes; drops in slab; drip trays; curbs; joints; and keys. Verify size and location of openings, and blockouts for utilities. Verify removal of all debris from forms.

Tendons

Size

- Verify grade, diameter, length and number of strands in tendon.

Length

- Verify sufficient stressing tails at live ends.

Sheathing

- Verify proper plastic sheathing strip at live and dead ends.

#### Placement

- Verify location, number of tendons, minimum and maximum spacing, drape within thickness of slab (clearance to top and bottom of slab-F.F.E. and base).

#### End Anchors

- Verify size, location, and type.

#### Clearance

- Verify minimum clearance between tendons, between tendons and forms, between tendons and all penetrations (plumbing, electrical, ductwork, rebar, etc.), and minimum cover over top tendons.

#### Condition

- Verify that tendon sheathing is not cut or damaged to allow leakage of concrete. Verify there are no bends, kinks or broken strands in the tendons.

#### Stability

- Verify that tendons are adequately tied, chaired and supported to prevent displacement during concrete placement.

#### Anchors

##### Condition

- Verify for condition, that live and dead ends are free of any damage or debris.

##### Connection

- Verify proper and secure connection at live and dead ends, pocket formers at live ends, clearance to form at dead end.

##### Clearance

- Verify proper clearance of anchors at live and dead ends, to other anchors, to rebar, to plumbing and electrical penetrations.

##### Reinforcement

- Verify proper hairpins at each live end and each dead end anchor.

#### Reinforcement Steel

##### Size

- Verify rebar diameter, length, bends, end anchorage.

##### Grade

- Verify rebar grade.

##### Placement

- Verify rebar location for footings, bays, corners, bends, steps, dowels from masonry or concrete stem footings to slab, and verticals for concrete or masonry walls.
- Verify number of bars, minimum and maximum spacing.

##### Splices

- Verify rebar laps for location, length, and stagger.

##### Clearance

- Verify minimum clearance between bars, and between bars and forms or soil, and minimum cover over top bars.

##### Condition

- Verify that rebar is free of oil, dirt, loose rust, loose dry mortar, or damage.

##### Stability

- Verify that rebar is adequately tied, chaired and supported to prevent displacement during concrete placement.

#### Welding

- Verify that welding of rebar utilized proper grade of steel, and was properly inspected and approved.
- Verify that pre-stressing steel was not welded, or otherwise damaged by nearby welding.

#### Anchor Bolts

##### Size

- Verify bolt diameter, length, standard bolt head, hooks or bends.

##### Grade

- Verify bolt grade and type.

##### Location

- Verify minimum spacing, minimum edge distance, depth of embedment.

##### Stability

- Verify that bolt template is adequately supported to prevent bolt displacement during concrete placement.

#### Embedded Items

##### Weld plates

- Verify steel plate size, thickness, and location; and type, size, and number of anchors.

##### Inserts

- Verify installation of rebar inserts, pipe hanger inserts or other embedded items noted on the plans.

#### **Concrete Placement**

##### Provisions for Concrete Placement

Verify that proper provisions have been made for concrete placement, consolidation, finishing, and curing, including adequate equipment, tools, men and materials; protection against sun, rain, hot or cold weather.

##### Conditions

Verify proper weather precautions are taken; preparations completed; specified interval since previous placement; lighting for night work. Verify pad is free of standing water or debris

##### Base Preparation

Verify that base for concrete is wetted and free of standing water, the soil has been treated for termites, and that a release agent has been applied to forms.

##### Concrete Mix

Verify that delivery ticket conforms with approved mix design, and that concrete will be discharged within the specified time limit.

Verify that any water added at the job site is added only if permitted by, and in accordance with, the plans and specifications.

##### Conveying and Placement

Verify that conveying and depositing of concrete results in uniform placement, without segregation.



#### Consolidation

Verify that concrete is properly consolidated with vibrators to result in uniform, dense concrete. Consolidation should not be used to cause concrete to flow laterally within forms, and should not be overworked.

#### Curing

Verify that concrete surfaces are cured in accordance with project plans, and specifications.

#### Concrete Tests

Verify that samples of concrete for testing are prepared for each lot according to requirements of Special Inspection and Testing Schedule and plans and specifications. Verify that slump test is performed and compliance or noncompliance of measured slump is reported to the concrete contractor and builder representative, if present.

#### Test Results

Verify that concrete test cylinders are subjected to compressive strength tests and test results comply with project requirements. In general, stressing is permitted only after the concrete strength has reached 2000 psi. Verify that 28-day design strength for the project is met.

### **Tendon Stressing (Post-Tensioning)**

#### Presence

The Special Inspector shall be on site during stressing.

#### Condition

Verify that the slab is not loaded prior to stressing or that the stage of construction (loading) does not exceed the maximum identified in the construction documents.

#### Calibration of Stressing Ram

Verify stressing ram has been properly calibrated.

#### Stressing

After verifying that concrete has reached transfer strength, verify that steel is stressed to proper design stress and elongations according to techniques and sequences noted on the plans, including recording of both stress levels (gauge reading) and elongations.

#### Protection of End Anchors

Verify that excess lengths of steel are cut-off and end anchors are properly sealed and protected as noted on the plans.

**JOB TASK LISTINGS**  
**SMOKE CONTROL**

**Special Inspections shall be performed in accordance with IBC Section 1704.14.**

Job Task Listings shall be developed by the Architect or Engineer of Record, consistent with manufacturer's recommendations.

Special Inspections shall be performed in accordance with IBC Section 1704.14.