



DSA-103 rev 12/20/13

## Statement of Structural Tests & Special Inspections - 2013 CBC

INCREMENT #

DSA File No.:

Application No.:

Date Submitted:

Revised:

Revised:

School Name	District
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**IMPORTANT:** This form is only a summary list of structural tests and special inspections required for the project. The actual tests and inspections must be performed as detailed on the DSA approved documents. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A.

**NOTE:** This form is also available for projects submitted for review under the 2007 and 2010 CBC.

**INSTRUCTIONS:** Click a plus sign (+) before any category or subcategory to reveal additional tests and special inspections. An "X" before a listed test or inspection indicates it is a mandatory requirement. A shaded box indicates a test or special inspection that may be required, depending on the scope of the construction and other issues. A shaded box can be clicked indicating your selection of that test. **Note:** A minus (-) on a category or subcategory heading indicates that it can be collapsed. However, any selections you may have made will be cleared. Click on the "COMPILE" button to show only the tests finally selected. **For more information on use of this form, see DSA-103.INSTR.**

Note: References are to the 2013 edition of the California Building Code (CBC) unless otherwise noted.

	TEST OR SPECIAL INSPECTION	TYPE <sup>1</sup>	PERFORMED BY <sup>2</sup>	CODE REFERENCE AND NOTES
-	<b>SOILS</b>			
	<b>1. GENERAL:</b>		Table 1705A.6	
X	a. Verify that: • site has been prepared properly prior to placement of controlled fill and/or excavations for foundations, • foundation excavations are extended to proper depth and have reached proper material, and • materials below footings are adequate to achieve the design bearing capacity.	Periodic	GE*	* By geotechnical engineer or his or her qualified representative.
-	<b>2. COMPACTED FILLS:</b>		Table 1705A.6	
	a. Perform qualification testing of fill materials.	Test	Lab*	* Under the supervision of the geotechnical engineer.
X	b. Verify use of proper materials and inspect lift thicknesses, placement, and compaction during placement of fill.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
X	c. Test compaction of fill.	Test	Lab*	* Under the supervision of the geotechnical engineer.
-	<b>3. DRIVEN DEEP FOUNDATIONS (PILES):</b>		Table 1705A.7	
X	a. Verify pile materials, sizes and lengths comply with the requirements.	Continuous	GE* & PI	* By geotechnical engineer or his or her qualified representative.
X	b. Determine capacities of test piles and conduct additional load tests as required.	Test	Lab*	* Under the supervision of the geotechnical engineer.
X	c. Inspect driving operations and maintain complete and accurate records for each pile.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
X	d. Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
	e. Steel piles.	Provide tests and inspections per STEEL section below.		



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	f. Concrete piles, and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
	g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.
-	<b>4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):</b> Table 1705A.7			
X	a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
X	b. Verify locations of piers.	Continuous	PI	
	c. Confirm pier diameters, plumbness, bell diameters (if applicable), lengths, and embedment into bedrock (if applicable). Record concrete or grout volumes.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
	d. Confirm adequate end strata bearing capacity.	Test	Lab*	* Under the supervision of the geotechnical engineer.
	e. Concrete piers.	Provide tests and inspections per CONCRETE section below.		
-	<b>5. RETAINING WALLS:</b>			
X	a. Placement of soil reinforcement, drainage devices, and backfill.	Continuous	GE*	* Placement, compaction and inspection of backfill per Section 1705A.6.1 for fills supporting foundations (see Section 2 above).
	b. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
	c. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
	d. Masonry retaining walls.	Provide tests and inspections per MASONRY section below.		
-	<b>6. OTHER SOILS:</b>			
	a.			
	b.			
	c.			
-	<b>CONCRETE</b> Table 1705A.3			
-	<b>7. CAST IN PLACE CONCRETE</b>			
	<b>Material Verification and Testing:</b>			
X	a. Verify use of required design mix.	Periodic	SI & PI*	* To be performed by batch-plant special inspector and project inspector.
	b. Test reinforcing steel.	Test	Lab	1913A.2 (1913.2.6*). ASTM A370. DSA IR 17-10
X	c. Perform slump, temperature, and (where required) air content tests.	Test	Lab	ASTM C172, ASTM C31.
X	d. Test concrete (compression).	Test	Lab	ACI 318 Section 5.6 and 1905A.1.2 (1913.3.1*). ASTM C39.
	<b>Inspection:</b>			
	e. Batch plant inspection	Continuous	SI	1705A.3.2; If approved by DSA, batch plant inspection may be reduced to periodic if plant complies with 1705A.3.3, Item 1, and requires first batch inspection, weighmaster, and batch tickets.
	f. Batch plant inspection – design complies with 1705A.3.3 item 2	Periodic	SI	1705A.3.3, Item 2. Requires first batch inspection, weighmaster, and batch tickets.
X	g. Inspect placement of formwork, reinforcing steel, embedded items and concrete. Inspect curing and form removal.	Continuous	PI*	* May be performed by a special inspector when specifically approved by DSA.
	h. Welding of reinforcing steel.	Provide special inspection per STEEL, category 19.1(d) & (e) and/or 19.2(g) & (h) below.		
	i. Verify in-situ concrete strength prior to removal of shores and forms from beams and structural slabs.	N/A	PI*	* Project inspector to verify concrete strength test reports prior to removal of shores or formwork.



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8. PRESTRESSED CONCRETE (in addition to Cast in Place Concrete tests and inspections):				
X	a. Test prestressing tendons and anchorages.	Test	Lab	1913A.3 (1913.2.7*). ASTM A370.
X	b. Inspect placement of prestressing tendons.	Periodic	SI	
	c. Verify in-situ concrete strength prior to stressing of tendons.	N/A	SI	Special inspector to verify concrete strength test reports prior to the stressing of post tensioned tendons.
	d. Inspect application of prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	
9. PRECAST CONCRETE (in addition to Cast in Place Concrete tests and inspections):				
X	a. Inspect fabrication of precast concrete members.	Continuous	SI	
X	b. Inspect erection of precast concrete members.	Continuous	SI	* May be performed by the project inspector when specifically approved by DSA.
10. SHOTCRETE (in addition to Cast in Place Concrete tests and inspections):				
X	a. Inspect shotcrete placement.	Continuous	SI	1705A.18. See ACI 506.
X	b. Test shotcrete (compression).	Test	Lab	1910A.5, 1910A.10 and 1913A.5 (1910.5*, 1910.10* and 1910.1.9*). ASTM C42, ASTM C1140.
11. POST-INSTALLED ANCHORS:				
X	a. Inspect installation of post-installed anchors	Continuous	SI	Table 1705A.3 * May be performed by the project inspector when specifically approved by DSA.
X	b. Test post-installed anchors.	Test	Lab	1913A.7 (1913.2.11*).
12. OTHER CONCRETE:				
	a.			
	b.			
	c.			
MASONRY TMS 402-11/ACI 530-11/ASCE 5-11 Table 1.19.3				
13. STRUCTURAL MASONRY:				
	Material Verification and testing:	Enter $f'_m$		
	a. Test reinforcing steel.	Test	Lab	2103A.14 (2103.14*). ASTM A370, DSA IR 17-10
	b. Test masonry units, mortar and grout (unit strength method).	Test	Lab	1708A.1.4 and 2105A.2.2.1 (or 1708A.1.4, 2105.2.2.1* and 2114.9.1*). ASTM C140, C1586 & C1019.
	c. Test masonry prisms (prism test method).	Test	Lab	2105A.2.2.2 (2105.2.2.2* and 2114.9.2* ). ASTM C1314.
X	d. Verify proportions of site-prepared, premixed or preblended mortar and grout.	Periodic	SI	ASTM C780.
X	e. Test core-drilled samples.	Test	Lab	2105A.5 (2114.9.3* ).
Inspection:				
	f. Inspect preparation of prisms.	Continuous	SI	ASTM C1314.
X	g. Verify size, location and condition of all dowels, construction supporting masonry, etc.	Periodic	SI	
X	h. Verify specified size, grade, and type of reinforcement.	Periodic	SI	
	i. Welding of reinforcing steel.	Provide special inspection per STEEL, category 19.1(d) & (e) and/or 19.2(g) & (h) below.		
X	j. Inspect placement of reinforcement, connectors, masonry units and construction of mortar joints.	Periodic	SI	



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X	k. Verify protection of masonry during cold weather (temperature below 40° F) or hot weather (temperature above 90°).	Periodic	SI	2104A.3 and 2104A.4 (2104.3 <sup>+</sup> and 2104.4 <sup>+</sup> ).
X	l. Inspect type, size, and location of anchors and all other items to be embedded in masonry including other details of anchorage of masonry to structural members, frames and other construction.	Continuous	SI	
X	m. Inspect grout space prior to grouting and placement of grout.	Continuous	SI	
-	<b>14. VENEER OR GLASS BLOCK PARTITIONS:</b> Table 1705A.4.1			
X	a. Verify proportions of site-prepared mortar and grout and/or verify certification of premixed mortar.	Periodic	SI	ASTM C780.
X	b. Inspect placement of units and construction of mortar joints.	Periodic	SI	
X	c. Inspect placement of reinforcement, connectors and anchors.	Periodic	SI	
X	d. Inspect type, size, and location of anchors and all other items to be embedded in masonry including details of anchorage of masonry to structural members, frames and other construction.	Continuous	SI	
X	e. Verify protection of masonry during cold weather (temperature below 40° F) or hot weather (above 90°).	Periodic	SI	2104A.3 and 2104A.4 (2104.3 <sup>+</sup> and 2104.4 <sup>+</sup> ).
	f. Test veneer bond strength	Test	Lab	1410.2.1. (Field constructed mock-up laboratory tested in accordance with ASTM C482).
-	<b>15. POST-INSTALLED ANCHORS IN MASONRY:</b>			
X	a. Inspect installation of post-installed anchors	Continuous	SI	1705A.4, 1616A.1.19 * May be performed by the project inspector when specifically approved by DSA.
X	b. Test post-installed anchors.	Test	Lab	1705A.4, 1913A.7 (1913.2.11 <sup>+</sup> ). ASTM E488.
-	<b>16. OTHER MASONRY:</b>			
	a.			
	b.			
	c.			
-	<b>STEEL</b> Table 1705A.2.1			
-	<b>17. STRUCTURAL STEEL AND COLD-FORMED STEEL USED FOR STRUCTURAL PURPOSES</b>			
	<b>Material Verification:</b>			
X	a. Verify that all materials are appropriately marked and that: • Mill certificates indicate material properties that comply with requirements, • Material sizes, types and grades comply with requirements.	Periodic	*	* By special inspector when performed off-site; by project inspector for steel shipped directly to project site without welding or fabrication.
X	b. Test unidentified materials	Test	Lab	2203A.1 (2203.1 <sup>+</sup> ). ASTM A370.
	c. Examine seam welds of structural tubes and pipes	Periodic	SI*	* DSA IR 17-3.
	<b>Inspection:</b>			
X	d. Verify member locations, bracing and all details constructed in the field.	Continuous	PI	
X	e. Verify stiffener locations, connection tab locations and all construction details fabricated in the shop.	Periodic	SI	
-	<b>18. HIGH STRENGTH BOLTS:</b>			
	<b>Material Verification of High-Strength Bolts, Nuts, and Washers:</b>			



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X	a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA approved documents.	Periodic	SI	DSA IR 17-9
X	b. Test high-strength bolts, nuts and washers.	Test	Lab	2213A.1 (2212.6.1*). ASTM F606, A370. DSA IR 17-8
<b>Inspection of High-Strength Bolt Installation:</b>				
	c. Bearing-type ("snug tight") connections.	Periodic	SI*	DSA IR 17-9
	d. Slip-critical connections.	*	SI	* "Continuous" or "Periodic" depends on the tightening method used, DSA IR 17-9 and 1705A.2.1.
-	<b>19. WELDING:</b> DSA IR 17-3, AWS D1.1 and AWS D1.8 (AWS D1.3 for cold formed steel).			
<b>Verification of Materials, Equipment, Welders, etc:</b>				
X	a. Verify weld filler material identification markings per AWS designation listed on the DSA approved documents and the WPS.	Periodic	SI	
X	b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	
X	c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.
-	<b>19.1 SHOP WELDING:</b>			
	a. Inspect groove, multi-pass, and fillet welds > 5/16"	Continuous	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
	b. Inspect single-pass fillet welds ≤ 5/16"	Periodic	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
	c. Inspect welding of stairs and railing systems.	Periodic	SI	1705A.2.2.1 Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
	d. Verification of reinforcing steel weldability	Periodic	SI	1705A.3.1; verify carbon equivalent reported on mill certificates. DSA IR 17-3.
	e. Inspect welding of reinforcing steel.	Continuous	SI	1705A.2.2.1.2, 1705A.2.2.5 and Table 1705A.2.1 Item 5b. AWS D1.4. DSA IR 17-3.
-	<b>19.2 FIELD WELDING:</b>			
	a. Inspect groove, multi-pass, and fillet welds > 5/16"	Continuous	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
	b. Inspect single-pass fillet welds ≤ 5/16"	Periodic	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
	c. Inspect end-welded studs (ASTM A-108) installation (including bend test)	Periodic	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
	d. Inspect floor and roof deck welds	Periodic	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
	e. Inspect welding of structural cold-formed steel	Periodic	SI*	* May be performed by the project inspector when specifically approved by DSA. DSA IR 17-3. 1705A.2.2.1.1 and 1705A.2.2.5
	f. Inspect welding of stairs and railing systems	Periodic	SI*	* May be performed by the project inspector when specifically approved by DSA. DSA IR 17-3. 1705A.2.2.1.1 and 1705A.2.2.5
	g. Verification of reinforcing steel weldability	Periodic	SI	1705A.3.1; verify carbon equivalent reported on mill certificates.
	h. Inspect welding of reinforcing steel.	Continuous	SI	1705A.2.2.1.2, 1705A.2.2.5 and Table 1705A.2.1 Item 5b. AWS D1.4
-	<b>20. NONDESTRUCTIVE TESTING:</b>			
	a. Ultrasonic	Test	Lab	AISC 341, App. Q 5.2. AWS D1.1, D1.8.- ANSI/ASNT CP-189, SNT-TC-1A. - ASTM E543, E1444, E164 - DSA IR 17-2.
	b. Magnetic Particle	Test	Lab	
	c.	Test	Lab	
	d.	Test	Lab	
-	<b>21. STEEL JOISTS AND TRUSSES:</b>			



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<b>X</b>	a. Verify size, type and grade for all chord and web members as well as connectors and weld filler material; verify joist profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joist.	<b>Continuous</b>	<b>SI</b>	1705A.2.2.3 and DSA IR 22-3 for steel joists only. 1705A.2.2.4 for steel trusses.
<b>-</b>	<b>22. SPRAY APPLIED FIRE-PROOFING:</b>			
<b>X</b>	a. Examine structural steel surface conditions, inspect application, take samples, measure thickness, and verify compliance of all aspects of application with DSA approved documents.	<b>Continuous</b>	<b>SI</b>	1705A.13. ASTM E605.
<b>X</b>	b. Test bond strength.	<b>Test</b>	<b>Lab</b>	1705A.13.6. ASTM E736.
<b>X</b>	c. Test density.	<b>Test</b>	<b>Lab</b>	1705A.13.5. ASTM E605.
<b>-</b>	<b>23. OTHER STEEL:</b>			
	a. High Strength Threaded Rod	<b>Test</b>	<b>Lab</b>	2212A.1 May be waived if the rod has an identifying mark from manufacturer and a mill cert.
	b.			
	c.			
<b>-</b>	<b>WOOD</b>			
<b>-</b>	<b>24. PREFABRICATED WOOD STRUCTURAL ELEMENTS:</b>		<b>Section 1705A.5</b>	
	a. Inspect fabrication of structural glued-laminated timber.*	<b>Continuous</b>	<b>SI</b>	* see 1705A.5.4 for exceptions
	b. Inspect fabrication of manufactured open-web trusses.	<b>Continuous</b>	<b>SI</b>	1705A.5.5 and DSA IR 23-4
	c. Inspect fabrication of manufactured metal plate connected trusses.	<b>Continuous</b>	<b>SI</b>	1705A.5 and DSA IR 23-8
<b>-</b>	<b>25. OTHER WOOD:</b>			
	a.			
	b.			
<b>-</b>	<b>OTHER</b>			
	<b>26. SKYLIGHT LOAD TEST</b>	<b>Test</b>	<b>Lab</b>	1709A.2 and 1709A.3. Testing is not required for: 1) a skylight with a valid evaluation service report per DSA IR A-5, or 2) a skylight that can be justified by structural calculation.
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**KEY to Columns**

1 Type -	2 Performed By -
<b>Continuous</b> – Indicates that a continuous special inspection is required	<b>GE</b> – Indicates that the special inspection is to be performed by a registered geotechnical engineer or his or her authorized representative
<b>Periodic</b> – Indicates that a periodic special inspection is required	<b>Lab</b> – Indicates that the test or inspection is to be performed by a testing laboratory accepted in the DSA laboratory Evaluation and Acceptance (LEA) Program. See section 4-335, 2013 CCR Title 24, Part 1.
<b>Test</b> – Indicates that a test is required	<b>PI</b> – Indicates that the special inspection is to be performed by the project inspector
	<b>SI</b> – Indicates that the special inspection is to be performed by a special inspector

COMPILE
PRINT

\_\_\_\_\_  
Name of Architect or Engineer in general responsible charge

\_\_\_\_\_  
Name of Structural Engineer (When structural design has been delegated)

\_\_\_\_\_  
Signature of Architect or Structural Engineer

\_\_\_\_\_  
date

**IDENTIFICATION STAMP**  
**DIV OF THE STATE ARCHITECT**  
 APP. # \_\_\_\_\_

AC N/A    F/LS N/A    SS \_\_\_\_\_

DATE \_\_\_\_\_