


DSA-103 rev 4/27/2016

Listing of Structural Tests & Special Inspections - 2013 CBC

INCREMENT #

DSA File No.:

37-66

Application No.:

04-118693

Date Submitted: 10/15/2019

Revised:

Revised:

School Name	Chet F. Harritt Elem School	District	Santee School District
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IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. 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

INSTRUCTIONS: Click a plus sign (+) before any category or subcategory to reveal additional tests and special inspections. 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 and inspections 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.

REQUIRED	TEST OR SPECIAL INSPECTION	TYPE 1	PERFORMED BY 2	CODE REFERENCE AND NOTES
-	SOILS			
	1. GENERAL:			Table 1705A.6
X	a. Verify that: <ul style="list-style-type: none"> 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. (See Appendix for exemptions.)
-	2. COMPACTED FILLS:			Table 1705A.6
X	a. Perform qualification testing of fill materials.	Test	LOR*	* 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	LOR*	* Under the supervision of the geotechnical engineer.
-	5. RETAINING WALLS:			
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).
X	b. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
X	d. Masonry retaining walls.	Provide tests and inspections per MASONRY section below.		
-	CONCRETE			Table 1705A.3
-	7. CAST IN PLACE CONCRETE			
	Material Verification and Testing:			
X	a. Verify use of required design mix.	Periodic	SI*	* To be performed by qualified batch-plant inspector and concrete sampling technician



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X	b. Test reinforcing steel.	Test	LOR	1913A.2 (1913.2.6 ⁺). ASTM A370. DSA IR 17-10
X	c. Perform slump, temperature, air content tests, and sample concrete.	Test	LOR	ASTM C172, ASTM C31.
X	d. Test concrete (compression).	Test	LOR	ACI 318 Section 5.6 and 1905A.1.2 (1913.3.1 ⁺). ASTM C39.
Inspection:				
X	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.
X	h. Welding of reinforcing steel.	Provide special inspection per STEEL, category 19.1(d) & (e) and/or 19.2(g) & (h) below.		
-	11. POST-INSTALLED ANCHORS:			
X	a. Inspect installation of post-installed anchors	Periodic	SI*	Table 1705A.3 (See Appendix for exemptions.) * May be performed by the project inspector when specifically approved by DSA.
X	b. Test post-installed anchors.	Test	LOR	1913A.7 (1913.2.11 ⁺). ASTM E488. (See Appendix for exemptions.)
-	MASONRY TMS 402-11/ACI 530-11/ASCE 5-11 Table 1.19.3			
-	13. STRUCTURAL MASONRY:			
		Enter f'_m		psi
Material Verification and testing:				
X	a. Mill certificate indicate compliance with requirements for reinforcement, anchors, ties, fasteners, and metal accessories. Test reinforcing steel.	Test	LOR	2103A.14 (2103.14 ⁺). ASTM A370, DSA IR 17-10
X	b. Producer's certificate of compliance for masonry units, mortar and grout materials. Test masonry units, mortar and grout (unit strength method).	Test	LOR	1705A.4 and 2105A.2.2.1 (or 2105.2.2.1 ⁺ and 2114.9.1 ⁺). ASTM C140, C1586 & C1019.
X	d. Verify proportions of site-prepared, premixed or preblended mortar and grout.	Periodic	SI	ASTM C780.
X	e. Test core-drilled samples.	Test	LOR	2105A.5 (2114.9.3 ⁺).
Inspection:				
X	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	
X	j. Inspect placement of reinforcement, connectors, masonry units and construction of mortar joints.	Periodic	SI	
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 ⁺ and 2104.4 ⁺).
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	
-	STEEL, ALUMINUM Table 1705A.2.1			
-	17. STRUCTURAL STEEL, COLD-FORMED STEEL, AND ALUMINUM USED FOR STRUCTURAL PURPOSES			
Material Verification:				



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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 or qualified technician when performed off-site.
X	b. Test unidentified materials	Test	LOR	2203A.1 (2203.1*). ASTM A370.
X	c. Examine seam welds of HSS shapes	Periodic	SI	DSA IR 17-3.
Inspection:				
X	e. Verify and document steel fabrication per DSA approved construction documents.	Continuous	SI	Not applicable to cold-formed steel, except for trusses (1705A.2.2.4).
-	19. WELDING:	DSA IR 17-3, AWS D1.1 and AWS D1.8 for structural steel, AWS D1.2 for Aluminum, AWS D1.3 for cold-formed steel, AWS D1.4 for reinforcing steel. (See Appendix for exemptions.)		
Verification of Materials, Equipment, Welders, etc:				
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.
-	19.1 SHOP WELDING:			
X	a. Inspect groove, multi-pass fillet welds > 5/16", plug and slot welds	Continuous	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
X	b. Inspect single-pass fillet welds ≤ 5/16"	Periodic	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
X	d. Verification of reinforcing steel weldability	Periodic	SI	1705A.3.1; verify carbon equivalent reported on mill certificates. DSA IR 17-3.
X	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.
-	19.2 FIELD WELDING:			
X	a. Inspect groove, multi-pass fillet welds > 5/16", plug and slot welds	Continuous	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
X	b. Inspect single-pass fillet welds ≤ 5/16"	Periodic	SI	Per AISC 360 (and AISC 341 as applicable). DSA IR 17-3.
X	g. Verification of reinforcing steel weldability	Periodic	SI	1705A.3.1; verify carbon equivalent reported on mill certificates. DSA IR 17-3.
X	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. DSA IR 17-3.
-	23. ANCHOR BOLTS, ANCHOR RODS, & OTHER STEEL:			
X	a. Anchor Bolts and Anchor Rods	Test	LOR	IR 17-11 Sample and test anchor bolts and anchor rods not readily identifiable.
-	WOOD			
-	24. PREFABRICATED WOOD STRUCTURAL ELEMENTS:	Section 1705A.5		
X	a. Inspect fabrication of structural glued-laminated timber.*	Continuous	SI	See 1705A.5.4 for exceptions
+	OTHER			



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Appendix: Work Exempt from DSA Requirements for Special Inspection or Structural Testing

Exempt items given in IR A-22 or the 2013 CBC (including DSA amendments) and those items identified below with an "X" by the design professional are NOT subject to DSA requirements for structural tests and special inspections. The project inspector shall verify all construction complies with the approved construction documents.

Exempted by Design Prof.	
Soils:	
X	1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per 2013 CBC Table 1806A.2 and having no geotechnical report for the following types of structures: free standing sign, scrolling message sign, scoreboard, covered walkway or shade structure with dead load less than 5 psf and other light-weight structures of which the apex is less than 8' above the highest adjacent grade.
X	2. Shallow foundations meeting the exception item #1 criteria specified in 2013 CBC Section 1803A.2.
(Optional) List details for applicable exempt items:	
Concrete/Masonry:	
X	1. Post-installed anchors for the following: 1) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment) given in ASCE 7-10, Section 13.1.4 (and modified by CBC Section 1616A.1.18) or 2) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."

Exempted by Design Prof.	
Welding:	
X	1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
X	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections); fillet welds cannot be ground flush.
X	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
X	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 of listing above).
X	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 of listing above).



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<input checked="" type="checkbox"/>	2. Concrete batch plant inspection is not required for the following, provided they are <i>identified</i> on the approved construction documents and the licensed weighmaster and batch ticket requirements of Section 1705A.3.3 are implemented: 1) site flatwork, 2) unenclosed site structures, including but not limited to lunch or car shelters, bleachers, solar structures, flag or light poles, or retaining walls less than 4'-0" above the top of foundation not supporting a surcharge and free standing nonbearing non-shear walls up to 6'-0" above adjacent grade, 3) controlled low-strength material backfill, 4) single-story relocatable buildings less than 2,160 square feet.	<input checked="" type="checkbox"/>	6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 of listing above).
<input checked="" type="checkbox"/>	3. Masonry retaining walls less than 4'-0" above the top of foundation not supporting a surcharge and free standing nonbearing non-shear masonry walls up to 6'-0" above adjacent grade do not require mortar or masonry core testing or DSA special inspection. or non-bearing non-shear masonry walls not exceeding total wall height of 12' above wall base, mortar test shall be permitted to be limited to those at the beginning of masonry work for each mix design. Core sampling and testing is not required for non-bearing non-shear masonry walls, not exceeding total wall height of 12' above wall base, built with single-wythe hollow unit concrete masonry that attaches opposite face shells using webs cast as single unit, when designed using an f'm not exceeding 1,500 psi (10.34 MPa).	<input checked="" type="checkbox"/>	7. Any support for exempt non-structural components given in ASCE 7-10, Section 13.1.4 (and modified by CBC Section 1616A.1.18) meeting the following: 1) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) <= 4' above supporting floor/roof, 2) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.
<input checked="" type="checkbox"/>	4. Epoxy shear dowels in site flatwork.	(Optional) List details for applicable exempt items:	
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List of required verified report(s):

- 1 Soils testing and Inspection: Geotechnical Verified Report - Form DSA-293
- 2 All Structural Testing: Laboratory Verified Report - Form DSA-291
- 3 Masonry Inspection: Laboratory Verified Report - Form DSA-291, or, for independently contracting SI, Special Inspection Verified Report - Form DSA-292
- 4 Shop Welding Inspection: Laboratory Verified Report - Form DSA-291, or, for independently contracting SI, Special Inspection Verified Report - Form DSA-292
- 5 Field Welding Inspection: Laboratory Verified Report - Form DSA-291, or, for independently contracting SI, Special Inspection Verified Report - Form DSA-292
- 6 Glu-Lam Wood Fabrication Inspection: Laboratory Verified Report - Form DSA-291, or, for independently contracting SI, Special Inspection Verified Report - Form DSA-292

KEY to Columns

1 Type -	2 Performed By -
Continuous -- Indicates that a continuous special inspection is required	GE -- Indicates that the special inspection is to be performed by a registered geotechnical engineer or his or her authorized representative
Periodic -- Indicates that a periodic special inspection is required	LOR -- 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.
Test -- Indicates that a test is required	SI -- Indicates that the special inspection is to be performed by a special inspector
COMPILE	PRINT

Name of Architect or Engineer in general responsible charge

STEPHANIE WELSH

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

[Signature]

10/14/

Signature of Architect or Structural Engineer

date

IDENTIFICATION STAMP
 DIV OF THE STATE ARCHITECT
 APP. # _____
 AC N/A F/LS N/A SS _____
 DATE _____

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 APP. 04-118693 INC:
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 DATE: 03.13.2020