



**DSA-103** Revised 5/8/2019  
**List of Required Structural Tests & Special Inspections - 2016 CBC**

INCREMENT #

DSA File No.:

19-48

Application No.:

03-119485

Date Submitted:

7/31/2019

Revised:

Revised:

School Name	<b>OAK STREET ELEMENTARY SCHOOL</b>	District	<b>INGLEWOOD UNIFIED ACHOOL DISTRICT</b>
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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, 2010, and 2013 CBC.

**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 2016 edition of the California Building Code (CBC) unless otherwise noted.

REQUIRED	TEST OR SPECIAL INSPECTION	TYPE 1	PERFORMED BY 2	CODE REFERENCE AND NOTES
-	<b>SOILS (Indicate if project has geotechnical report):</b>			<input checked="" type="radio"/> Project has a geotechnical report, or CDs indicate soils special inspection is required by GE. <input type="radio"/> Project does NOT have and does NOT require a geotechnical report.
-	<b>1. GENERAL:</b>			Table 1705A.6
X	a. Verify that: <ul style="list-style-type: none"> <li>• site has been prepared properly prior to placement of controlled fill and/or excavations for foundations,</li> <li>• foundation excavations are extended to proper depth and have reached proper material, and</li> <li>• materials below footings are adequate to achieve the design bearing capacity.</li> </ul>	Periodic	GE*	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)
-	<b>2. SOIL COMPACTION AND FILL:</b>			Table 1705A.6
X	b. Verify use of proper materials, densities and inspect lift thicknesses, placement, and compaction during placement of fill.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. (Refer to specific items identified in the Appendix for exemptions where soils SI and testing may be conducted under the supervision of a geotechnical engineer or LOR's engineering manager. In such cases, the LOR's form DSA 291 shall satisfy the soil SI and test reporting requirements for the exempt items.)
X	c. Compaction testing.	Test	LOR*	* Under the supervision of the geotechnical engineer. (Refer to specific items identified in the Appendix for exemptions where soils testing may be conducted under the supervision of a geotechnical engineer or LOR's engineering manager. In such cases, the LOR's form DSA 291 shall satisfy the soil test reporting requirements for the exempt items.)
-	<b>CONCRETE</b>			Table 1705A.3, ACI 318-14 Sections 26.12 & 26.13
-	<b>7. CAST-IN-PLACE CONCRETE</b>			
	<b>Material Verification and Testing:</b>			
X	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1 (1909.2.3 <sup>+</sup> )



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X	b. Identify, sample, and test reinforcing steel.	Test	LOR	1910A.2 (1909.2.4 <sup>+</sup> ); ACI 318-14 Section 26.6.1.2. DSA IR 17-10.16 (See Appendix for exemptions.)
X	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 item 6; ACI 318-14 Sections 26.5 & 26.12
X	d. Test concrete ( $f'_c$ ).	Test	LOR	1905A.1.16 (1909.3.7 <sup>+</sup> ); ACI 318-14 Section 26.12.
<b>Inspection:</b>				
-	<b>11. POST-INSTALLED ANCHORS:</b>			
X	a. Inspect installation of post-installed anchors	See Notes	SI*	1616A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic) (See Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13 * May be performed by the project inspector when specifically approved by DSA.
X	b. Test post-installed anchors.	Test	LOR	1910A.5 (1909.2.7 <sup>+</sup> ). (See Appendix for exemptions.)
-	<b>MASONRY</b> TMS 402-13/ACI 530-13/ASCE 5-13 Table 3.1.3 & TMS 602-13/ACI 530.1-13/ASCE 6-13 Table 5			
-	<b>13. STRUCTURAL MASONRY:</b>			
		Enter $f'_m$	2000	psi
<b>Material Verification and testing:</b>				
(See Appendix for exemptions.)				
X	a. Mill certificate indicates compliance with requirements for reinforcement, anchors, ties, fasteners, and metal accessories. See item 7b above for identification, sampling, and testing of reinforcing steel.	Periodic	SI*	2103A.4 (2103.4 <sup>+</sup> ), TMS 602-13 Article 1.5B.2 & 2.4. * To be performed by qualified LOR representative. Applicable testing by LOR. See IR 17-10.16 for unidentified reinforcing steel.
X	b. Producer's certificate of compliance for masonry units, mortar and grout materials.	Test	LOR	1705A.4
X	c. Test masonry ( $f'_m$ ).	Test	LOR	1705A.4. For Unit Strength: 2105A.3 (2114.6.1 <sup>+</sup> ), TMS 602-13 Article 1.4B.2, 1.5B.1 & 1.5B.2. For Prism (required when $f'_m > 2000$ psi): 2105A.2, TMS 602-13 Article 1.4B.3, 1.4B.4, 1.5B.1 & 1.5B.2.
X	d. Verify proportions of site-prepared, premixed or preblended mortar and grout.	Periodic	SI	TMS 402-13 Table 3.1.3 Item 2a, TMS 602-13 Table 5 Item 2a.
X	e. Test core-drilled samples.	Test	LOR	2105A.4 (2114.6.2 <sup>+</sup> ). (See Appendix for exemptions.)
<b>Inspection:</b>				
(See Appendix for exemptions.)				
X	g. Verify size, location and condition of all dowels, construction supporting masonry, etc.	Periodic	SI	
X	h. Verify size, grade, and type of reinforcement and anchor bolts.	Periodic	SI	TMS 402-13 Table 3.1.3 Item Item 2b, TMS 602-13 Table 5 Item 2b.
X	j. Inspect placement of reinforcement and connectors.	Continuous	SI	TMS 402-13 Table 3.1.3 Item 2d, TMS 602-13 Table 5 item 2d.
X	k. Inspect placement of masonry units and construction of mortar joints.	Periodic	SI	TMS 402-13 Table 3.1.3 Item 2c, TMS 602-13 Table 5 Item 2c.
X	l. Verify preparation, construction, and protection of masonry during cold weather (temperature below 40° F) or hot weather (temperature above 90°).	Periodic	SI*	TMS 402-13 Table 3.1.3 Item 2j; TMS 602-13 Table 5 Item 2j. * May be performed by the project inspector when specifically approved by DSA.
X	m. 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	TMS 402-13 Table 3.1.3 Item Item 2h, TMS 602-13 Table 5 Item 2h.
X	n. Inspect grout space prior to grouting and placement of grout.	Continuous	SI	TMS 402-13 Table 3.1.3 Item Item 2e & 2f, TMS 602-13 Table 5 Item 2e & 2f.
-	<b>15. POST-INSTALLED ANCHORS IN MASONRY:</b>			



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X	a. Inspect installation of post-installed anchors	See Notes	SI*	1705A.4, 1616A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic) (see Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA. (See Appendix for exemptions.)
X	b. Test post-installed anchors.	Test	LOR	1705A.4, 1910A.5 (1909.2.7 <sup>+</sup> ). (See Appendix for exemptions.)
-	<b>STEEL, ALUMINUM</b> Table 1705A.2.1, AISC 303-10, AISC 360-10, AISC 341-10, AISC 358-10, AISI S100-07/S2-10			
-	<b>19. WELDING:</b> 1705A.2.5, Table 1705A.2.1 Items 4 & 5; 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.)			
<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	DSA IR 17-3.
X	b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	DSA IR 17-3.
X	c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.
-	<b>19.1 SHOP WELDING:</b>			
X	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds	Continuous	SI	Table 1705A.2.1 Item 5a1-4. Per AISC 360-10 (and AISC 341-10 as applicable). DSA IR 17-3.
X	c. Inspect welding of stairs and railing systems.	Periodic	SI	1705A.2.1. Per AISC 360-10 (and AISC 341-10 as applicable). AWS D1.1 & D1.3. DSA IR 17-3.
-	<b>19.2 FIELD WELDING:</b>			
X	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds	Continuous	SI	Table 1705A.2.1 Item 5a1-4. Per AISC 360-10 (and AISC 341-10 as applicable). DSA IR 17-3.
X	f. Inspect welding of stairs and railing systems	Periodic	SI*	1705A.2.1; Per AISC 360-10 (and AISC 341-10 as applicable). AWS D1.1 & D1.3. DSA IR 17-3. * May be performed by the project inspector when specifically approved by DSA.
+				
-	<b>23. ANCHOR BOLTS, ANCHOR RODS, &amp; OTHER STEEL:</b>			
X	a. Anchor Bolts and Anchor Rods	Test	LOR	IR 17-11 Sample and test anchor bolts and anchor rods not readily identifiable.
+	<b>WOOD</b>			
+	<b>OTHER</b>			



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**List of required verified report(s):**

- 1 Soils testing and Inspection: Geotechnical Verified Report - Form DSA-293
- 2 Structural Testing and Inspection: Laboratory Verified Report - Form DSA-291
- 3 Post-Installed Anchors: Laboratory Verified Report - Form DSA-291, or, for independently contracting SI, Special Inspection Verified Report - Form DSA-292
- 4 Masonry Inspection: Laboratory Verified Report - Form DSA-291, or, for independently contracting SI, Special Inspection Verified Report - Form DSA-292
- 5 Shop Welding Inspection: Laboratory Verified Report - Form DSA-291, or, for independently contracting SI, Special Inspection Verified Report - Form DSA-292
- 6 Field Welding 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 -
<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>LOR</b> – Indicates that the test or special inspection is to be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.
<b>Test</b> – Indicates that a test is required	<b>PI</b> – Indicates that the special inspection is to be performed by a project inspector
	<b>SI</b> – Indicates that the special inspection is to be performed by an appropriately qualified/approved special inspector

**Javan Nabili, gkkworks/Cannon Design**

Name of Architect or Engineer in general responsible charge

**James Pearson**

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

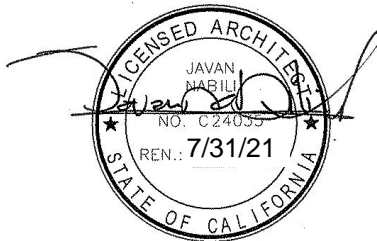
*James Pearson*

07/30/2019

Signature of Architect or Structural Engineer

date

IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 APP. 03-119485 INC:  
 REVIEWED FOR  
 SS  FLS  ACS   
 DATE: 8/14/2019





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**Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections**

Exempt items given in IR A-22 or the 2016 CBC (including DSA amendments) and those items identified below with an "X" by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. **Items marked as exempt shall be identified on the approved construction documents.** The project inspector shall verify all construction complies with the approved construction documents.

<b>Exempted by Design Prof.</b>	<p><b>Soils:</b></p> <p>1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.</p> <p>2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.</p>
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<b>Exempted by Design Prof.</b>	<p><b>Welding:</b></p> <p>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.</p> <p>2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds cannot be ground flush.</p>
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	<p><b>Concrete/Masonry:</b></p>		<p>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.</p>
	<p>1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1616A.1.18 (which replaces ASCE 7-10, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."</p>		<p>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).</p>
	<p>2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.</p>		<p>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).</p>
	<p>3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.</p>		<p>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).</p>
	<p>4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.</p>		<p>7. Any support for exempt non-structural components given in CBC Section 1616A.1.18 (which replaces ASCE 7-10, Section 13.1.4) meeting the following: A) when supported on a floor/roof, &lt;400# and resulting composite center of mass (including component's center of mass) &lt;= 4' above supporting floor/roof, B) when hung from a wall or roof/floor, &lt;20# for discrete units or &lt;5 plf for distributed systems.</p>
	<p>5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.</p>		