

# DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2019 CBC

<b>Application Number:</b> 04-121669	<b>School Name:</b> Los Alamitos High School	<b>School District:</b> Los Alamitos Unified School District
<b>DSA File Number:</b> 30-H18	<b>Increment Number:</b>	<b>Date Created:</b> 2023-06-23 09:03:36

## 2019 CBC

**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 (2019 CBC).

**\*\*NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

### KEY TO COLUMNS

1. TYPE	2. PERFORMED BY
<p><b>Continuous</b> – Indicates that a continuous special inspection is required</p> <p><b>Periodic</b> – Indicates that a periodic special inspection is required</p> <p><b>Test</b> – Indicates that a test is required</p>	<p><b>GE</b> – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.</p> <p><b>LOR</b> – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.</p> <p><b>PI</b> – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.</p> <p><b>SI</b> – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.</p>

# DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2019 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

<b>Application Number:</b> 04-121669	<b>School Name:</b> Los Alamitos High School	<b>School District:</b> Los Alamitos Unified School District
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## Geotechnical Reports: Project has a geotechnical report, or CDs indicate soils special inspection is required by GE

S1. GENERAL:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	<b>a. Verify that:</b> <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.</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.)

S2. SOIL COMPACTION AND FILL:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Perform classification and testing of fill materials.	Test	LOR*	* Under the supervision of the geotechnical engineer.
<input checked="" type="checkbox"/>	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.)
<input checked="" type="checkbox"/>	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.)

# DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS), 2019 CBC

Table 1705A.6, Table 1705A.7, Table 1705A.8

<b>Application Number:</b> 04-121669	<b>School Name:</b> Los Alamitos High School	<b>School District:</b> Los Alamitos Unified School District
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<b>S3. DRIVEN DEEP FOUNDATIONS (PILES):</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>	<b>a.</b> Verify pile materials, sizes and lengths comply with the requirements.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>b.</b> Determine capacities of test piles and conduct additional load tests as required.	<b>Test</b>	<b>LOR*</b>	* Under the supervision of the geotechnical engineer.
<input type="checkbox"/>	<b>c.</b> Inspect driving operations and maintain complete and accurate records for each pile.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>d.</b> 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.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>e.</b> Steel piles.	Provide tests and inspections per STEEL section below.		
<input type="checkbox"/>	<b>f.</b> Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
<input type="checkbox"/>	<b>g.</b> For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.

<b>S4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Note</b>
<input type="checkbox"/>	<b>a.</b> Inspect drilling operations and maintain complete and accurate records for each pier.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)

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Table 1705A.6, Table 1705A.7, Table 1705A.8

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	Test or Special Inspection	Type	Performed By	Code References and Note
<input type="checkbox"/>	<b>b.</b> Verify pier locations, diameters, plumbness, bell diameters (if applicable), lengths and embedment into bedrock (if applicable); record concrete or grout volumes.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)
<input type="checkbox"/>	<b>c.</b> Confirm adequate end strata bearing capacity.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)
<input type="checkbox"/>	<b>d.</b> Concrete piers.	Provide tests and inspections per CONCRETE section below.		

<b>S5. RETAINING WALLS:</b>				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	<b>a.</b> Placement, compaction and inspection of backfill.	<b>Continuous</b>	<b>GE*</b>	<b>1705A.6.1.</b> * By geotechnical engineer or his or her qualified representative. (See S2 above).
<input type="checkbox"/>	<b>b.</b> Placement of soil reinforcement and/or drainage devices.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>c.</b> Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. See DSA IR 16-3.
<input type="checkbox"/>	<b>d.</b> Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
<input type="checkbox"/>	<b>e.</b> Masonry retaining walls.	Provide tests and inspections per MASONRY section below.		

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Table 1705A.6, Table 1705A.7, Table 1705A.8

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<b>S6. OTHER SOILS:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>	<b>a. Soil Improvements</b>	<b>Test</b>	<b>GE*</b>	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS for final acceptance. * By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>b. Inspection of Soil Improvements</b>	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>c.</b>			

# DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2019 CBC

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

<b>Application Number:</b> 04-121669	<b>School Name:</b> Los Alamitos High School	<b>School District:</b> Los Alamitos Unified School District
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C1. CAST-IN-PLACE CONCRETE				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
<input checked="" type="checkbox"/>	b. Identify, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	d. Test concrete (f'c).	Test	LOR	1905A.1.15; ACI 318-14 Section 26.12.
<input checked="" type="checkbox"/>	e. Batch plant inspection: <b>Continuous</b>	See Notes	SI	Default of ' <b>Continuous</b> ' per 1705A.3.3. If approved by DSA, batch plant inspection may be reduced to ' <b>Periodic</b> ' subject to requirements in Section 1705A.3.3.1, or eliminated per 1705A.3.3.2. See IR 17-13. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category S/A4(d) & (e) and/or S/A5(g) & (h) below.		

C2. PRESTRESSED / POST-TENSIONED CONCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
<input type="checkbox"/>	b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.

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Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

<b>Application Number:</b> 04-121669	<b>School Name:</b> Los Alamitos High School	<b>School District:</b> Los Alamitos Unified School District
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	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 11. Special inspector to verify specified concrete strength test prior to stressing.
<input type="checkbox"/>	d. Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13

C3. PRECAST CONCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-14 Section 26.13.
<input checked="" type="checkbox"/>	b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.

C4. SHOTCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.19, Table 1705A.3 Item 7, 1908A.6, 1908A.7, 1908A.8, 1908A.9, 1908A.11, 1908A.12. See ACI 506.2-13 Section 3.4, ACI 506R-16.
<input type="checkbox"/>	b. Sample and test shotcrete ( $f'_c$ ).	Test	LOR	1908A.5, 1908A.10.

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Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

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C5. POST-INSTALLED ANCHORS:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix for exemptions.)

C6. OTHER CONCRETE:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a.			



# DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (MASONRY), 2019 CBC

1705A.4; TMS 602-16, Tables 3 and 4.

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<b>M1. STRUCTURAL MASONRY: (f<sub>m</sub> = 2000 psi)</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Mill certificate indicates compliance with requirements for reinforcement, anchors, ties, fasteners and metal accessories. See item C1(b) for identification, sampling and testing of reinforcing steel.	<b>Periodic</b>	<b>SI*</b>	<b>2103A.4;</b> 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.
<input checked="" type="checkbox"/>	<b>b.</b> Producer's certificate of compliance for masonry units, mortar and grout materials.	<b>Test</b>	<b>LOR</b>	<b>1705A.4, 2103A.2.1, 2103A.3, 2103A.5;</b> TMS 602-16 Articles 1.5B.2 2.1, 2.2, 2.6A and 2.6B, and Table 6 footnote 3.
<input checked="" type="checkbox"/>	<b>c.</b> Test masonry (f <sub>m</sub> ).	<b>Test</b>	<b>LOR</b>	<b>1705A.4. For Unit Strength: 2105A.3</b> (2114.6.1+); TMS 602-16 Articles 1.4B.2 ,1.5B.1 & 1.5B.2. <b>For Prism (required when f<sub>m</sub> &gt; 2000 psi):2105A.2;</b> TMS 602-16 Articles 1.4B.3, 1.4B.4, 1.5B.1 & 1.5B.2.
<input checked="" type="checkbox"/>	<b>d.</b> Verify proportions or properties of site-prepared, premixed or preblended mortar.	<b>Periodic</b>	<b>SI</b>	TMS 602-16, Table 3 Item 5, Table 4 Item 1a. DSA PR 20-01.
<input checked="" type="checkbox"/>	<b>e.</b> Verify proportions or properties of site-prepared, premixed or preblended grout.	<b>Periodic</b>	<b>SI</b>	TMS 602-16, Table 3 Item 5, Table 4 Item 2d.
<input checked="" type="checkbox"/>	<b>f.</b> Batch plant inspection: <b>Continuous</b>	<b>See Notes</b>	<b>SI</b>	Default of ' <b>Continuous</b> ' per <b>1705A.3.3</b> . If approved by DSA, batch plant inspection may be reduced to ' <b>Periodic</b> ' subject to requirements in Section <b>1705A.3.3.1</b> , or eliminated per <b>1705A.3.3.2</b> . See IR 17-13. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	<b>g.</b> Test core-drilled samples.	<b>Test</b>	<b>LOR</b>	<b>2105A.4.</b> (See Appendix for exemptions.)
<input type="checkbox"/>	<b>h.</b> Inspect preparation of prisms.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Articles 1.4.B.3 & 1.4.B.4 & Table 4 Item 4.
<input checked="" type="checkbox"/>	<b>i.</b> Verify size, location and condition of all dowels, construction supporting masonry, etc.	<b>Periodic</b>	<b>SI</b>	
<input checked="" type="checkbox"/>	<b>j.</b> Verify size, grade and type of reinforcement, connectors, and anchor bolts. Verify size and location of structural members.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 4, Items 1c & 3c.

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1705A.4; TMS 602-16, Tables 3 and 4.

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	<b>k.</b> Inspect placement of reinforcement, anchor bolts, and connectors.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Table 4 Item 2c.
<input checked="" type="checkbox"/>	<b>l.</b> Placement, consolidation, and reconsolidation of grout.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Table 4 Item 3h.
<input checked="" type="checkbox"/>	<b>m.</b> Inspect placement of masonry units and construction of mortar joints.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 4 Item 3b.
<input checked="" type="checkbox"/>	<b>n.</b> Verify preparation, construction and protection of masonry during cold weather (temperature below 40° F) or hot weather (temperature above 90° F).	<b>Periodic</b>	<b>SI*</b>	TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	<b>o.</b> 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.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Table 4 Item 3d.
<input checked="" type="checkbox"/>	<b>p.</b> Inspect grout space, including mortar protrusions, prior to placement of grout.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Table 4 Item 2a.
<input checked="" type="checkbox"/>	<b>q.</b> Welding of reinforcing steel.	TMS 602-16 Table 4 Item 3e. Provide special inspection per STEEL, Category S/A4(d) & (e) and/or S/A5(g) & (h) below.		

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1705A.4; TMS 602-16, Tables 3 and 4.

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<b>M2. VENEER OR GLASS BLOCK PARTITIONS:</b>				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify proportions of siteprepared mortar and grout and/or verify certification of premixed mortar.	Periodic	SI	TMS 602-16 Table 3 Item 5 and Table 4 Items 1a & 2d.
<input checked="" type="checkbox"/>	b. Inspect placement of units and construction of mortar joints.	Periodic	SI	TMS 602-16 Table 4 Item 3b.
<input checked="" type="checkbox"/>	c. Inspect placement of wire, connectors and anchors	Periodic	SI	TMS 602-16 Table 4 Item 2c.
<input checked="" type="checkbox"/>	d. Inspect type, size and location of anchors and all other items to be embedded in masonry veneer including details of anchorage of masonry to veneer backing, frames and other construction.	Periodic	SI	TMS 602-16 Table 4 Item 3d.
<input checked="" type="checkbox"/>	e. Verify preparation, construction and protection of masonry during cold weather (temperature below 40° F) or hot weather (above 90° F).	Periodic	SI*	TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	f. Test adhered veneer bond strength.	Test	LOR	<b>1410.2.1; TMS 402 Article 12.3.2.4. (Field constructed mock-up laboratory tested in accordance with ASTM C482).</b>

<b>M3. POST-INSTALLED ANCHORS IN MASONRY:</b>				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Inspect installation of postinstalled anchors	See Notes	SI*	<b>1617A.1.19, 1705A.4, Table 1705A.3 Item 4a (Continuous) &amp; 4b (Periodic);</b> ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA. (See Appendix for exemptions.)

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1705A.4; TMS 602-16, Tables 3 and 4.

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	b. Test post-installed anchors.	Test	LOR	1705A.4, 1910A.5. (See Appendix for exemptions.)

M4. OTHER MASONRY:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a.			

# DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (STEEL AND ALUMINUM), 2019 CBC

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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S/A1. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify identification of all materials and: • Mill certificates indicate material properties that comply with requirements. • Material sizes, types and grades comply with requirements.	Periodic	*	Table 1705A.2.1 Item 3a 3c. 2202A.1; AISI S100-16 Section A3.1 & A3.2, AISI S240-15 Section A3 & A5, AISI S220-15 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
<input checked="" type="checkbox"/>	b. Test unidentified materials	Test	LOR	2202A.1.
<input checked="" type="checkbox"/>	c. Examine seam welds of HSS shapes	Periodic	SI	DSA IR 17-3.
<input checked="" type="checkbox"/>	d. Verify and document steel fabrication per DSA-approved construction documents.	Periodic	SI	Not applicable to cold-formed steel light-frame construction, except for trusses (1705A.2.4).
<input type="checkbox"/>	e. Buckling restrained braces.	Test	LOR	Testing and special inspections in accordance with IR 22-4.

S/A2. HIGH-STRENGTH BOLTS:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	Periodic	SI	Table 1705A.2.1 Items 1a & 1b, 2202A.1; AISC 360-16 Section A3.3, J3.1, and N3.2; RCSC 2014 Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.
<input checked="" type="checkbox"/>	b. Test high-strength bolts, nuts and washers.	Test	LOR	Table 1705A.2.1 Item 1c, 2213A.1; RCSC 2014 Section 7.2; DSA IR 17-8.
<input checked="" type="checkbox"/>	c. Bearing-type ("snug tight") connections.	Periodic	SI	Table 1705A.2.1 Item 2a, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Section 9.1; DSA IR 17-9.
<input checked="" type="checkbox"/>	d. Pretensioned and slip-critical connections.	*	SI	Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9. * "Continuous" or "Periodic" depends on the tightening method used.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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<b>S/A3. WELDING:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	<b>Periodic</b>	<b>SI</b>	<b>1705A.2.5, Table 1705A.2.1 Items 4 &amp; 5;</b> 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; DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>b.</b> Verify weld filler material manufacturer's certificate of compliance.	<b>Periodic</b>	<b>SI</b>	DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>c.</b> Verify WPS, welder qualifications and equipment.	<b>Periodic</b>	<b>SI</b>	DSA IR 17-3.

<b>S/A4. SHOP WELDING (IN ADDITION TO SECTION S/A3):</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	<b>Continuous</b>	<b>SI</b>	<b>Table 1705A.2.1 Items 5a.1 4;</b> AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>b.</b> Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	<b>Periodic</b>	<b>SI</b>	<b>1705A.2.2, Table 1705A.2.1 Items 5a.5 &amp; 5a.6;</b> AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>c.</b> Inspect welding of stairs and railing systems.	<b>Periodic</b>	<b>SI</b>	<b>1705A.2.1;</b> AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>d.</b> Verification of reinforcing steel weldability other than ASTM A706.	<b>Periodic</b>	<b>SI</b>	<b>1705A.3.1;</b> AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input checked="" type="checkbox"/>	<b>e.</b> Inspect welding of reinforcing steel.	<b>Continuous</b>	<b>SI</b>	<b>Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8;</b> AWS D1.4; DSA IR 17-3.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<b>S/A5. FIELD WELDING (IN ADDITION TO SECTION S/A3):</b>				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	<b>Continuous</b>	<b>SI</b>	<b>Table 1705A.2.1 Items 5a.1 4;</b> AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	b. Inspect single-pass fillet welds ≤ 5/16".	<b>Periodic</b>	<b>SI</b>	<b>Table 1705A.2.1 Item 5a.5;</b> AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	c. Inspect end-welded studs (ASTM A-108) installation (including bend test).	<b>Periodic</b>	<b>SI</b>	<b>2213A.2;</b> AISC 360-16 (AISC 341-16 as applicable); AWS D1.1; DSA IR 17-3.
<input checked="" type="checkbox"/>	d. Inspect floor and roof deck welds.	<b>Periodic</b>	<b>SI</b>	<b>1705A.2.2, Table 1705A.2.1 Item 5a.6;</b> AISC 360-16 (AISC 341-16 as applicable); AWS D1.3; DSA IR 17-3.
<input checked="" type="checkbox"/>	e. Inspect welding of structural cold-formed steel.	<b>Periodic</b>	<b>SI*</b>	<b>1705A.2.5; AWS D1.3; DSA IR 17-3.</b> The quality control provisions of AISI S240-15 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA.
<input type="checkbox"/>	f. Inspect welding of stairs and railing systems.	<b>Periodic</b>	<b>SI*</b>	<b>1705A.2.1;</b> AISC 360-16 (AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	g. Verification of reinforcing steel weldability.	<b>Periodic</b>	<b>SI</b>	<b>1705A.3.1;</b> AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input checked="" type="checkbox"/>	h. Inspect welding of reinforcing steel.	<b>Continuous</b>	<b>SI</b>	<b>Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8;</b> AWS D1.4; DSA IR 17-3.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<b>S/A6. NONDESTRUCTIVE TESTING:</b>				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Ultrasonic	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; ANSI/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input checked="" type="checkbox"/>	b. Magnetic Particle	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; ANSI/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input type="checkbox"/>	c.	Test	LOR	

<b>S/A7. STEEL JOISTS AND TRUSSES:</b>				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	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.	Continuous	SI	1705A.2.3, Table 1705A.2.3; AWS D1.1; DSA IR 22-3 for steel joists only. 1705A.2.4; AWS D1.3 for cold-formed steel trusses.



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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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Test or Special Inspection	Type	Performed By	Code References and Notes
<b>S/A8. SPRAY APPLIED FIRE-PROOFING:</b>			
Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA-approved documents.	Periodic	SI	1705A.14.
<input type="checkbox"/> b. Test bond strength.	Test	LOR	1705A.14.6.
<input type="checkbox"/> c. Test density.	Test	LOR	1705A.14.5.

<b>S/A9. ANCHOR BOLTS AND ANCHOR RODS:</b>			
Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/> a. Anchor Bolts and Anchor Rods	Test	LOR	Sample and test anchor bolts and anchor rods not readily identifiable per procedures noted in DSA IR 17-11.
<input type="checkbox"/> b. Threaded rod not used for foundation anchorage.	Test	LOR	Sample and test threaded rods not readily identifiable per procedures noted in DSA IR 17-11.

<b>S/A10. Other Steel</b>			
Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a.			

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

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Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark 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>SOILS:</b>
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.

	<b>CONCRETE/MASONRY:</b>
<input type="checkbox"/>	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding" in the Appendix below) given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
<input type="checkbox"/>	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.

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

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<b>CONCRETE/MASONRY:</b>	
<input type="checkbox"/>	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.

<b>WELDING:</b>	
<input type="checkbox"/>	1. Solid-clad and open-mesh fences, gates with maximum leaf span of 10', and gates with a maximum rolling section of 10' all having an apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates/fences are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
<input type="checkbox"/>	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 shall not be ground flush.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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 Sections S/A3, S/A4 and/or S/A5 of listing above).
<input type="checkbox"/>	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 Sections S/A3, S/A4 and/or S/A5 of listing above).
<input 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 sections S/A3, S/A4 and/or S/A5 located in the Steel/Aluminum category).
<input type="checkbox"/>	7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) ≤4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

# DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2019 CBC

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**DSA File Number:**  
30-H18

**School Name:**  
Los Alamitos High School  
**Increment Number:**

**School District:**  
Los Alamitos Unified School District  
**Date Created:**  
2023-06-23 09:03:36

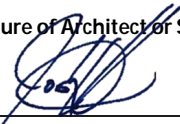
Name of Architect or Engineer in general responsible charge:

JOSHUA SMITH, WESTGROUP DESIGNS, C32384

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

JOSH RANDALL, SE #4506

Signature of Architect or Structural Engineer:



Date:

06/23/23

**Note:** To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

## DSA STAMP

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

APP: 04-121669 INC:

REVIEWED FOR

SS  FLS  ACS

DATE: 08/21/2023

## DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

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1. Soils Testing and Inspection: Geotechnical Verified Report Form DSA 293

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2. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

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3. Concrete Batch Plant Inspection: Laboratory Verified Report Form DSA 291

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4. Precast Concrete Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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5. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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6. Masonry Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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7. Shop Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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8. Field Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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9. High-Strength Bolt Installation Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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10. Steel Joist Fabrication Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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