DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2022 CBC

General

Application Number:	**School Name:**	**School District:**
02-121908	West Campus High School	Sacramento City Unified 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 (2022 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
Continuous – Indicates that a continuous special inspection is required **Periodic –** Indicates that a periodic special inspection is required **Test –** Indicates that a test is required	**GE (Geotechnical Engineer) –** Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative. **LOR (Laboratory of Record) –** 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. **PI (Project Inspector) –** Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA. **SI (Special Inspection) –** Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.

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

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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**
☑	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. •Materials below footings are adequate to achieve the design bearing capacity.	**Periodic**	**GE***	* By geotechnical engineer or his or her qualified representative. (See Appendix (end of this form) form for exemptions.)

	S2. SOIL COMPACTION AND FILL:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Perform classification and testing of fill materials.	**Test**	**LOR***	* Under the supervision of the geotechnical engineer.
☑	**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 (end of this form) form 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.)
☑	**c.** Compaction testing.	**Test**	**LOR***	* Under the supervision of the geotechnical engineer. (Refer to specific items identified in the Appendix (end of this form) 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.)

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

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	S3. DRIVEN DEEP FOUNDATIONS (PILES):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Verify pile materials, sizes and lengths comply with the requirements.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**b.** Determine capacities of test piles and conduct additional load tests as required.	**Test**	**LOR***	* Under the supervision of the geotechnical engineer.
☐	**c.** Inspect driving operations and maintain complete and accurate records for each pile.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**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.		
☐	**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.

	S4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Note**
☑	**a.** Inspect drilling operations and maintain complete and accurate records for each pier.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative. (See Appendix (end of this form) 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**
☑	**b.** Verify pier locations, 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. (See Appendix (end of this form) for exemptions.)
☑	**c.** Confirm adequate end strata bearing capacity.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative. (See Appendix (end of this form) for exemptions.)
☑	**d.** Concrete piers.	Provide tests and inspections per CONCRETE section below.		

	S5. RETAINING WALLS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Placement, compaction and inspection of backfill.	**Continuous**	**GE***	**1705A.6.1.** * By geotechnical engineer or his or her qualified representative. (See section S2 above).
☑	**b.** Placement of soil reinforcement and/or drainage devices.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**c.** Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative. See DSA IR 18-2.
☑	**d.** Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
☐	**e.** 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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	S6. OTHER SOILS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Soil Improvements	**Test**	**GE***	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS (California Geological Survey) for final acceptance. * By geotechnical engineer or his or her qualified representative.
☐	**b.** Inspection of Soil Improvements	**Continuous**	**GE***	* By geotechnical engineer or his or her qualified representative.
☐	**c.**			

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Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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	C1. CAST-IN-PLACE CONCRETE			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify use of required design mix.	**Continuous**	**SI**	**Table 1705A.3 Item 5, 1910A.1.**
☑	**b.** Identifiy, sample, and test reinforcing steel.	**Test**	**LOR**	**1910A.2;** ACI 318-19 Ch.20 and Section 26.6.1.2; DSA IR 17-10. (See Appendix (end of this form) for exemptions.)
☑	**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 318-19 Sections 26.5 & 26.12.
☑	**d.** Test concrete (f'_c).	**Test**	**LOR**	**1905A.1.17;** ACI 318-19 Section 26.12.
☑	**e.** Batch plant inspection: **Periodic**	**See Notes**	**SI**	Default of **'Continuous'** per **1705A.3.3**. If approved by DSA, batch plant inspection may be reduced to **'Periodic'** subject to requirements in Section **1705A.3.3.1,** or not required per **1705A.3.3.2.** See IR 17-13. (See Appendix (end of this form) for exemptions.)
☐	**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**
☐	**a.** Sample and test prestressing tendons and anchorages.	**Test**	**LOR**	**1705A.3.4, 1910A.3**
☐	**b.** Inspect placement of prestressing tendons.	**Periodic**	**SI**	**1705A.3.4, Table 1705A.3 Items 1 & 9.**

	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	**c.** Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	**Periodic**	**SI**	**Table 1705A.3 Item 13.** Special inspector to verify specified concrete strength test prior to stressing.
☐	**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 318-19 Section 26.13

	C3. PRECAST CONCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect fabrication of precast concrete members.	**Continuous**	**SI**	ACI 318-19 Section 26.13, and PCI MNL-128 and -130.
☐	**b.** Inspect erection of precast concrete members.	**Periodic**	**SI***	**Table 1705A.3 Item 10.** * May be performed by PI when specifically approved by DSA.
☐	**c.** For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category D, E or F, inspect such connections and reinforcement in the field for: 1. Installation of the embedded parts 2. Completion of the continuity of reinforcement across joints. 3. Completion of connections in the field.	**Continuous**	**SI**	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5
☐	**d.** Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5.	**Periodic**	**SI**	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5

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Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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	C4. SHOTCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect shotcrete placement for proper application techniques.	**Continuous**	**SI**	**1705A.3.9, Table 1705A.3 Item 7, 1908A.1, 1908A.2, 1908A.3.** See ACI 506.2-13 Section 3.4, ACI 506R-16.
☐	**b.** Sample and test shotcrete (f'_c).	**Test**	**LOR**	**1908A.2, 1705A.3.9**

	C5. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**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 (end of this form) for exemptions). ACI 318-19 Section 26.13. * May be performed by the project inspector when specifically approved by DSA.
☑	**b.** Test post-installed anchors.	**Test**	**LOR**	**1910A.5.** (See Appendix (end of this form) for exemptions.)

	C6. OTHER CONCRETE:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.**			

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

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	M1. STRUCTURAL MASONRY: **(f'm = 2000 psi)**			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** 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.	**Periodic**	**SI***	**2103A.4**; TMS 602-16 Article 1.5B.2 & 2.4. * To be performed by qualified LOR representative. Applicable testing by LOR. See IR 17-10 for unidentified reinforcing steel.
☑	**b.** Producer's certificate of compliance for masonry units, mortar and grout materials.	**Test**	**LOR**	**1705A.4, 2103A.2, 2103A.3, 2103A.5;** TMS 602-16 Articles 1.5B.2 2.1, 2.2, 2.6A and 2.6B, and Table 6 footnote 3.
☑	**c.** Test masonry (f'_m).	**Test**	**LOR**	**1705A.4. For Unit Strength: 2105A.3**; TMS 602-16 Articles 1.4B.2 ,1.5B.1 & 1.5B.2. **For Prism (required when f'_m > 2000 psi):2105A.2;** TMS 602-16 Articles 1.4B.3, 1.4B.4, 1.5B.1 & 1.5B.2.
☑	**d.** Verify proportions or properties of site-prepared, premixed or preblended mortar.	**Periodic**	**SI**	TMS 602-16, Table 3 (row 5), Table 4 Item 1a. DSA PR 20-01. (See Appendix (end of this form) for exemptions.)
☑	**e.** Verify proportions or properties of site-prepared, premixed or preblended grout.	**Periodic**	**SI**	TMS 602-16, Table 3 (row 5), Table 4 Item 2d. (See Appendix (end of this form) for exemptions.)
☑	**f.** Batch plant inspection: **Continuous**	**See Notes**	**SI**	Default of **'Continuous'** per **1705A.3.3**. If approved by DSA, batch plant inspection may be reduced to **'Periodic'** subject to requirements in Section **1705A.3.3.1,** or not required per **1705A.3.3.2.** See IR 17-13. Refer to TMS 602-16 Table 3 and Table 4, Item #3a. (See Appendix (end of this form) for exemptions.)
☑	**g.** Test core-drilled samples.	**Test**	**LOR**	**2105A.4**. (See Appendix (end of this form) for exemptions.)
☑	**h.** Inspect preparation of prisms.	**Continuous**	**SI**	TMS 602-16 Articles 1.4.B.3 & 1.4.B.4 & Table 4 Item 4.
☑	**i.** Verify size, location and condition of all dowels, construction supporting masonry, etc.	**Periodic**	**SI**	

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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
☑	**j.** Verify size, grade and type of reinforcement, connectors, and anchor bolts. Verify size and location of structural members.	**Periodic**	**SI**	TMS 602-16 Table 4, Items 1c & 3c.
☑	**k.** Inspect placement of reinforcement, anchor bolts, and connectors.	**Continuous**	**SI**	TMS 602-16 Table 4 Item 2c.
☑	l. Placement, consolidation, and reconsolidation of grout.	**Continuous**	**SI**	TMS 602-16 Table 4 Item 3h.
☑	**m.** Inspect placement of masonry units and construction of mortar joints.	**Periodic**	**SI**	TMS 602-16 Table 4 Item 3b.
☑	**n.** Verify preparation, construction and protection of masonry during cold weather (temperature below 40^{o} F) or hot weather (temperature above 90^{o} F).	**Periodic**	**SI***	TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA.
☑	**o.** 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 602-16 Table 4 Item 3d.
☑	**p.** Inspect grout space, including mortar protrusions, prior to placement of grout.	**Continuous**	**SI**	TMS 602-16 Table 4 Item 2a.
☐	**q.** 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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	M2. VENEER OR GLASS BLOCK PARTITIONS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Verify proportions of site prepared mortar and grout and/or verify certification of premixed mortar.	**Periodic**	**SI**	TMS 602-16 Table 3 (row 5) and Table 4 Items 1a & 2d.
☐	**b.** Inspect placement of units and construction of mortar joints.	**Periodic**	**SI**	TMS 602-16 Table 4 Item 3b.
☐	**c.** Inspect placement of wire, connectors and anchors	**Periodic**	**SI**	TMS 602-16 Table 4 Item 2c.
☐	**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.
☐	**e.** Verify preparation, construction and protection of masonry during cold weather (temperature below 40^{o} F) or hot weather (above 90^{o} F).	**Periodic**	**SI***	TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA.
☐	**f.** Test adhered veneer bond strength.	**Test**	**LOR**	**1410.2.1;** TMS 402 Article 12.3.2.4. **(Field constructed mock-up laboratory tested in accordance with ASTM C482).**

	M3. POST-INSTALLED ANCHORS IN MASONRY:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Inspect installation of post-installed anchors	**See Notes**	**SI***	**1617A.1.19, 1705A.4, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic);** ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA. (See Appendix (end of this form) 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
☑	**b.** Test post-installed anchors.	**Test**	**LOR**	**1705A.4, 1910A.5.** (See Appendix (end of this form) for exemptions.)

	M4. OTHER MASONRY:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.**			

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; 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**
☑	**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 S100-20 Section A3.1 & A3.2, AISI S240-20 Section A3 & A5, AISI S220-20 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
☑	**b.** Test unidentified materials	**Test**	**LOR**	**2202A.1.**
☑	**c.** Examine seam welds of HSS shapes	**Periodic**	**SI**	DSA IR 17-3.
☑	**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**).
☐	**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**
☐	**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.
☐	**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.
☐	**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.
☐	**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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	S/A3. WELDING:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	**Periodic**	**SI**	**1705A.2.5, Table 1705A.2.1 Items 4 & 5**; 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.
☑	b. Verify weld filler material manufacturer's certificate of compliance.	**Periodic**	**SI**	DSA IR 17-3.
☑	**c.** Verify WPS, welder qualifications and equipment.	**Periodic**	**SI**	DSA IR 17-3.

	S/A4. SHOP WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	**Continuous**	**SI**	**Table 1705A.2.1 Items 5a.1–4;** AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☑	b. Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	**Periodic**	**SI**	**1705A.2.2, Table 1705A.2.1 Items 5a.5 & 5a.6;** AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☐	**c.** Inspect welding of stairs and railing systems.	**Periodic**	**SI**	**1705A.2.1**; AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.
☐	**d.** Verification of reinforcing steel weldability other than ASTM A706.	**Periodic**	**SI**	**1705A.3.1**; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
☐	**e.** Inspect welding of reinforcing steel.	**Continuous**	**SI**	**Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8;** 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 S100-20; 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
	S/A5. FIELD WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	**Continuous**	**SI**	**Table 1705A.2.1 Items 5a.1–4;** AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
☑	b. Inspect single-pass fillet welds ≤ 5/16".	**Periodic**	**SI**	**Table 1705A.2.1 Item 5a.5;** AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
☐	**c.** Inspect end-welded studs (ASTM A-108) installation (including bend test).	**Periodic**	**SI**	**2213A.2**; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1; DSA IR 17-3.
☑	**d.** Inspect floor and roof deck welds.	**Periodic**	**SI**	**1705A.2.2, Table 1705A.2.1 Item 5a.6;** AISC 360-16 (AISC 341-16 as applicable); AWS D1.3; DSA IR 17-3.
☐	**e.** Inspect welding of structural cold-formed steel.	**Periodic**	**SI***	**1705A.2.5; AWS D1.3; DSA IR 17-3.** The quality control provisions of AISI S240-20 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA.
☐	**f.** Inspect welding of stairs and railing systems.	**Periodic**	**SI***	**1705A.2.1;** 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.
☐	**g.** Verification of reinforcing steel weldability.	**Periodic**	**SI**	**1705A.3.1**; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
☐	**h.** Inspect welding of reinforcing steel.	**Continuous**	**SI**	**Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8;** 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 S100-20; 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**
	S/A6. NONDESTRUCTIVE TESTING:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Ultrasonic	**Test**	**LOR**	**1705A.2.1, 1705A.2.5;** AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
☐	**b.** Magnetic Particle	**Test**	**LOR**	**1705A.2.1, 1705A.2.5;** AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
☐	**c.**	**Test**	**LOR**	

	S/A7. STEEL JOISTS AND TRUSSES:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**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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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A8. SPRAYED FIRE-RESISTANT MATERIALS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**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.15, 1705A.15.1, 1705A.15.2, 1705A.15.3, 1705A.15.4, 1705A.15.5, 1705A.15.6.**
☐	**b.** Test density.	**Test**	**LOR**	**1705A.15.1, 1705A.15.5, ASTM E605**
☐	**c.** Bond strength adhesion/cohesion.	**Test**	**LOR**	**1705A.15.1, 1705A.15.6, ASTM E736**

	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A9. ANCHOR BOLTS AND ANCHOR RODS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Anchor Bolts and Anchor Rods	**Test**	**LOR**	Identify, sample and test anchor bolts and anchor rods **not** meeting exemptions identified in Section 1 of IR 17-11.
☐	**b.** Threaded rod not used for foundation anchorage.	**Test**	**LOR**	Identify, sample and test threaded rods **not** meeting exemptions identified in Section 1 of IR 17-11.

	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A10. STORAGE RACK SYSTEMS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Materials used, to verify compliance with one or more of the material test reports in accordance with the approved construction documents.	**Periodic**	**SI**	Table 1705A.13.7
☐	**b.** Fabricated storage rack elements.	**Periodic**	**SI**	1704A.2.5; Table 1705A.13.7

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	Test or Special Inspection	Type	Performed By	Code References and Notes
☐	**c.** Storage rack anchorage installation.	**Periodic**	**SI**	ANSI/MH16.1 Section 7.3.2; Table 1705A.13.7
☐	**d.** Completed storage rack system to indicate compliance with the approved construction documents.	**Periodic**	**SI***	Table 1705A.13.7; * May be preformed by the project inspector when specifically approved by DSA.

	S/A11. Other Steel			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.**			

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (WOOD), 2022 CBC

1705A.5, Table 1705A.5.7

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	W1. PREFABRICATED WOOD TRUSSES:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect fabrication of manufactured open-web trusses.	**Continuous**	**SI**	**1705A.5.6;** DSA IR 23-8.
☐	**b.** Inspect fabrication of manufactured metal-plate-connected trusses.	**Continuous**	**SI**	**1705A.5.6, 1705A.5.7;** DSA IR 23-4.

	W2. MANUFACTURED WOOD STRUCTURAL ELEMENTS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Inspect fabrication of structural glued-laminated timber.*	**Continuous**	**SI**	* See **1705A.5.5** for exceptions
☐	**b.** Inspect fabrication of cross-laminated timber.	**Continuous**	**SI**	**1705A.5.5**
☐	**c.** Inspect erection of mass timber.	**Peridodic**	**SI**	**Table 1705A.5.3**, Item 2
☐	**d.** Inspect mass timber connections with threaded fasteners, bolts, and/or adhesive anchors other than described in item e below. Inspect concealed mass timber connections.	**Peridodic**	**SI**	**Table 1705A.5.3**, Items 3.1, 3.3, 3.4, 3.5. For threaded fasteners: Verify use of proper installation equipment. Verify use of pre-drilled holes where required. Inspect screws, including diameter, length, head type, spacing, installation angle, and depth.
☐	**e.** Inspect mass timber connections with adhesive anchors installed in a horizontal or upward orientation.	**Continuous**	**SI**	**Table 1705A.5.3**, Item 3.2
☐	**f.** Inspect application of sealants or adhesives applied to mass timber elements.	**Peridodic**	**SI**	**1705A.20**

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1705A.5, Table 1705A.5.7

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	W3. OTHER Wood:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**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 2022 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.

	SOILS:
☐	1. Deep foundations acting as a cantilever footing with a design based on minimum allowable pressures per CBC Table 1806A.2 and without a 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.
☐	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 with depth not exceeding 12".

	CONCRETE/MASONRY:
☐	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" in the Appendix below
☐	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.
☐	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. Refer to construction documents for specific exemptions accordingly for each applicable wall condition shown in Appendix A of IR 21-1.
☐	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.

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	CONCRETE/MASONRY:
☐	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.

	WELDING:
☐	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.
☐	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.
☐	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.
☐	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).
☐	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).
☐	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 of listing above).

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	WELDING:
☐	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 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2022 CBC

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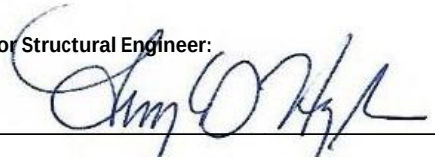
Name of Architect or Engineer in general responsible charge: Tim D. Hyde, S.E.
Name of Structural Engineer (When structural design has been delegated):
Signature of Architect or Structural Engineer:  Date: 3-14-24

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

DSA STAMP

DSA 103-22: LIST OF REQUIRED VERIFIED REPORTS, CBC 2022

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1. Soils Testing and Inspection: Geotechnical Verified Report Form DSA 293
2. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291
3. Concrete Batch Plant Inspection: Laboratory Verified Report Form DSA 291
4. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
5. Masonry Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
6. Shop Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
7. Field Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
8. Mass Timber Inspection: Laboratory Verified Report Form DSA 291 , or, for independently contracting SI, Special Inspection Verified Report Form DSA 292