

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

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| Application Number: 01-119166 | School Name: Merritt College | School District: Peralta Community College |
| DSA File Number: 1-C1 | Increment Number: 1 | Date Created: 2021-07-28 16:55:47 |

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 |
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| <p>Continuous – Indicates that a continuous special inspection is required</p> <p>Periodic – Indicates that a periodic special inspection is required</p> <p>Test – Indicates that a test is required</p> | <p>GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.</p> <p>LOR – 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>PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.</p> <p>SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.</p> |

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Geotechnical Reports: Project has a geotechnical report, or CDs indicate soils special inspection is required by GE

| 1. GENERAL: | | Table 1705A.6 | | |
|-------------------------------------|--|---------------|--------------|---|
| Test or Special Inspection | | Type | Performed By | Code References and Notes |
| <input checked="" type="checkbox"/> | a. Verify that: <ul style="list-style-type: none"> • Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations. • Foundation excavations are extended to proper depth and have reached proper material. • Materials below footings are adequate to achieve the design bearing capacity. | Periodic | GE* | * By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.) |

| 2. SOIL COMPACTION AND FILL: | | Table 1705A.6 | | |
|-------------------------------------|--|---------------|--------------|---|
| Test or Special Inspection | | Type | Performed By | Code References and Notes |
| <input checked="" 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.) |

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| <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.) |
|-------------------------------------|------------------------|-------------|-------------|---|

| 3. DRIVEN DEEP FOUNDATIONS (PILES): | | Table 1705A.7 | | |
|-------------------------------------|---|---|--------------|--|
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input type="checkbox"/> | a. Verify pile materials, sizes and lengths comply with the requirements. | Continuous | GE* | * By geotechnical engineer or his or her qualified representative. |
| <input type="checkbox"/> | b. Determine capacities of test piles and conduct additional load tests as required. | Test | LOR* | * Under the supervision of the geotechnical engineer. |
| <input type="checkbox"/> | c. Inspect driving operations and maintain complete and accurate records for each pile. | Continuous | GE* | * By geotechnical engineer or his or her qualified representative. |
| <input type="checkbox"/> | 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. |
| <input type="checkbox"/> | e. Steel piles. | Provide tests and inspections per STEEL section below. | | |
| <input type="checkbox"/> | f. Concrete piles and concrete filled piles. | Provide tests and inspections per CONCRETE section below. | | |

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| <input type="checkbox"/> | g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge. | * | * | * As defined on drawings or specifications. |
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| 4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS): | | Table 1705A.8 | | |
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input type="checkbox"/> | 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 for exemptions.) |
| <input type="checkbox"/> | 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 for exemptions.) |
| <input type="checkbox"/> | c. Confirm adequate end strata bearing capacity. | Continuous | GE* | * By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.) |
| <input type="checkbox"/> | d. Concrete piers. | Provide tests and inspections per CONCRETE section below. | | |

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|-------------------------------------|---|-------------------|---------------------|---|
| 5. RETAINING WALLS: | | | | |
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input checked="" type="checkbox"/> | a. Placement, compaction and inspection of backfill. | Continuous | GE* | 1705A.6.1. * By geotechnical engineer or his or her qualified representative. (See Section 2 above). |

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| <input type="checkbox"/> | b. Placement of soil reinforcement and/or drainage devices. | Continuous | GE* | * By geotechnical engineer or his or her qualified representative. |
| <input type="checkbox"/> | 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 16-3. |
| <input type="checkbox"/> | d. Concrete retaining walls. | Provide tests and inspections per CONCRETE section below. | | |
| <input checked="" type="checkbox"/> | e. Masonry retaining walls. | Provide tests and inspections per MASONRY section below. | | |

| 6. OTHER SOILS: | | | | |
|--------------------------|---|-------------------|---------------------|---|
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input type="checkbox"/> | 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 for final acceptance. * By geotechnical engineer or his or her qualified representative. |
| <input type="checkbox"/> | b. Inspection of Soil Improvements | Continuous | GE* | * By geotechnical engineer or his or her qualified representative. |
| <input type="checkbox"/> | c. | | | |

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

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| 7. CAST-IN-PLACE CONCRETE | | | | |
|---|---|--|--------------|--|
| Test or Special Inspection | | Type | Performed By | Code References and Notes |
| Material Verification and Testing: | | | | |
| <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. |
| Inspection: | | | | |
| <input checked="" type="checkbox"/> | e. 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 eliminated per 1705A.3.3.2. (See Appendix for exemptions.) |
| <input type="checkbox"/> | f. Welding of reinforcing steel. | Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below. | | |

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| 8. PRESTRESSED / POST-TENSIONED CONCRETE (in addition to Cast-in-Place Concrete tests and inspections): |
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Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

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| | 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. |
| <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 |

| 9. PRECAST CONCRETE (in addition to Cast-in-Place Concrete tests and inspections): | | | | |
|--|---|------------|--------------|--|
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input type="checkbox"/> | a. Inspect fabrication of precast concrete members. | Continuous | SI | ACI 318-14 Section 26.13. |
| <input 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. |

| 10. SHOTCRETE (in addition to Cast-in-Place Concrete tests and inspections): | | | | |
|--|----------------------------|------|--------------|---------------------------|
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| | | | | |

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

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| <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. |

| 11. 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.) |

| 12. OTHER CONCRETE: | | | | |
|----------------------------|-----------------------------------|-------------|---------------------|----------------------------------|
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input type="checkbox"/> | a. | | | |

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

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| 13. STRUCTURAL MASONRY: 2000 psi | | | | |
|--|------------|--------------|---|--|
| Test or Special Inspection | Type | Performed By | Code References and Notes | |
| Material Verification and Testing: (See Appendix for exemptions.) | | | | |
| <input checked="" type="checkbox"/> a. Mill certificate indicates compliance with requirements for reinforcement, anchors, ties, fasteners and metal accessories. See item 7b for identification, sampling and testing of reinforcing steel. | Periodic | SI* | 2103A.4; 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. Producer's certificate of compliance for masonry units, mortar and grout materials. | Test | LOR | 1705A.4, 2103A.2.1, 2103A.3, 2103A.5; TMS 602-16 Articles 2.1, 2.2, 2.6A and 2.6B, and Table 6 footnote 3. | |
| <input checked="" type="checkbox"/> c. Test masonry (f_m). | Test | LOR | 1705A.4. For Unit Strength: 2105A.3 (2114.6.1+); 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. | |
| <input checked="" type="checkbox"/> d. Verify proportions of site prepared, premixed or preblended mortar and grout. | Periodic | SI | TMS 602-16 Table 3 Item 5, Table 4 Item 1a & 2d. | |
| <input checked="" type="checkbox"/> e. Test core-drilled samples. | Test | LOR | 2105A.4. (See Appendix for exemptions.) | |
| Inspection: (See Appendix for exemptions.) | | | | |
| <input checked="" type="checkbox"/> f. Inspect preparation of prisms. | Continuous | SI | TMS 602-16 Articles 1.4.B.3 & 1.4.B.4 & Table 4 Item 4. | |
| <input checked="" type="checkbox"/> g. 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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| <input checked="" type="checkbox"/> | h. Verify size, grade and type of reinforcement and anchor bolts. | Periodic | SI | TMS 602-16 Table 4 Item 1c. |
| <input type="checkbox"/> | i. Welding of reinforcing steel. | TMS 602-16 Table 4 Item 3e. Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below. | | |
| <input checked="" type="checkbox"/> | j. Inspect placement of reinforcement and connectors. | Continuous | SI | TMS 602-16 Table 4 Item 2c. |
| <input checked="" type="checkbox"/> | k. Inspect placement of masonry units and construction of mortar joints. | Periodic | SI | TMS 602-16 Table 4 Item 3b. |
| <input checked="" type="checkbox"/> | l. Verify preparation, construction and protection of masonry during cold weather (temperature below 40° F) or hot weather (temperature 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"/> | m. Inspect type, size and location of anchors and all other items to 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. |
| <input checked="" type="checkbox"/> | n. Inspect grout space prior to placement of grout. | Continuous | SI | TMS 602-16 Table 4 Item 2a. |

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| 14. VENEER OR GLASS BLOCK PARTITIONS: 1705A.4.1; TMS 602-16 Tables 3 and 4. | | | | |
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input 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. |

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

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|--------------------------|--|-----------------|------------|--|
| <input type="checkbox"/> | b. Inspect placement of units and construction of mortar joints. | Periodic | SI | TMS 602-16 Table 4 Item 3b. |
| <input type="checkbox"/> | c. Inspect placement of reinforcement, connectors and anchors. | Periodic | SI | TMS 602-16 Table 4 Item 2c. |
| <input type="checkbox"/> | d. Inspect type, size and location of anchors and all other items to be embedded in masonry including details of anchorage of masonry to structural members, frames and other construction. | Periodic | SI | TMS 602-16 Table 4 Item 3d. |
| <input 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 type="checkbox"/> | f. Test 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). |

| 15. POST-INSTALLED ANCHORS IN MASONRY: | | | | |
|---|---|------------------|---------------------|---|
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input checked="" type="checkbox"/> | a. Inspect installation of postinstalled 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 for exemptions.) |
| <input checked="" type="checkbox"/> | b. Test post-installed anchors. | Test | LOR | 1705A.4, 1910A.5. (See Appendix for exemptions.) |

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

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| 16. OTHER MASONRY: | | | | |
|--------------------------|----------------------------|------|--------------|---------------------------|
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input type="checkbox"/> | 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 S100-16

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| 17. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES | | | | |
|---|---|----------|--------------|---|
| Material Verification and Testing: | | | | |
| | 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. |
| Inspection: | | | | |
| <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). |

| 18. HIGH-STRENGTH BOLTS: RCSC 2014 | | | | |
|---|--|----------|--------------|---|
| Material Verification and Testing of High-Strength Bolts, Nuts and Washers: | | | | |
| | 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. |

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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

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| <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. |
| Inspection of High-Strength Bolt Installation: | | | | |
| <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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| 19. WELDING: | 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 (See Appendix for exemptions.) |
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|---|---|-----------------|---------------------|----------------------------------|
| Verification of Materials, Equipment, Welders, etc.: | | | | |
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input checked="" type="checkbox"/> | 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. |
| <input checked="" type="checkbox"/> | b. Verify weld filler material manufacturer’s certificate of compliance. | Periodic | SI | DSA IR 17-3. |
| <input checked="" type="checkbox"/> | c. Verify WPS, welder qualifications and equipment. | Periodic | SI | 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

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| 19.1 SHOP WELDING: | | | | |
|--|------------|--------------|---|--|
| 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. | Continuous | SI | Table 1705A.2.1 Items 5a.1 4; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3. | |
| <input checked="" type="checkbox"/> 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. | |
| <input checked="" type="checkbox"/> 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. | |
| <input type="checkbox"/> 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. | |
| <input type="checkbox"/> 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. | |

| 19.2 FIELD WELDING: | | | | |
|--|------------|--------------|---|--|
| 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. | Continuous | SI | Table 1705A.2.1 Items 5a.1 4; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3. | |
| <input checked="" type="checkbox"/> 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. | |

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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

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| <input checked="" type="checkbox"/> | 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. |
| <input checked="" type="checkbox"/> | 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. |
| <input checked="" type="checkbox"/> | 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 S240-15 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA. |
| <input checked="" type="checkbox"/> | 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. |
| <input type="checkbox"/> | 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. |
| <input type="checkbox"/> | 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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| 20. NONDESTRUCTIVE TESTING: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16 | | | | |
| | 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. |

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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

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| <input 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 | |

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|---|---|-------------------|---------------------|---|
| 21. STEEL JOISTS AND TRUSSES: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16 | | | | |
| | Test or Special Inspection | Type | Performed By | Code References and Notes |
| <input 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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| 22. SPRAY APPLIED FIRE-PROOFING: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16 | | | | |
| | 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. |

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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

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| <input type="checkbox"/> | c. Test density. | Test | LOR | 1705A.14.5. |
|--------------------------|------------------|------|-----|-------------|

| 23. ANCHOR BOLTS AND ANCHOR RODS: | | | | |
|-------------------------------------|--|------|--------------|---|
| | 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. |

| Other Steel | | | | |
|--------------------------|----------------------------|------|--------------|---------------------------|
| | 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.

| SOILS: | |
|--------------------------|--|
| <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. |

| CONCRETE/MASONRY: | |
|-------------------------------------|--|
| <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") 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. |

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

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| <input checked="" 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 checked="" type="checkbox"/> | 4. Epoxy shear dowels in site flatwork and/or other non-structural concrete. |
| <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. |

| | |
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| | Welding: |
| <input checked="" type="checkbox"/> | 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. |
| <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 checked="" 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 checked="" 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 19, 19.1 and/or 19.2 of listing above). |
| <input checked="" 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 19, 19.1 and/or 19.2 of listing above). |


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

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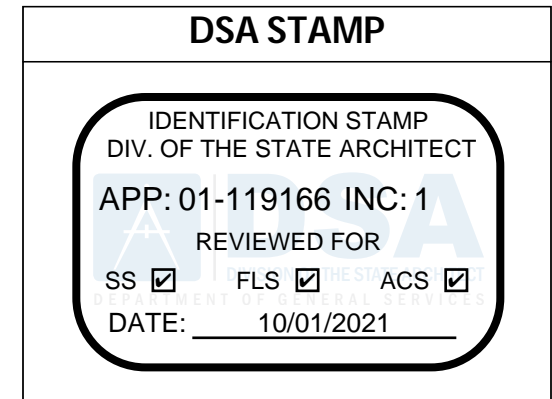
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| <input checked="" type="checkbox"/> | 6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category). |
| <input checked="" 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) $\leq 4'$ 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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| Name of Architect or Engineer in general responsible charge: | |
| Name of Structural Engineer (When structural design has been delegated): John Westphal SE 4575 | |
| Signature of Architect or Structural Engineer:  | Date: 7/28/21 |

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



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

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