

SCHEDULE OF SPECIAL INSPECTIONS

Reference UFGS 01 45 35 for all requirements not noted as part of this schedule.

INSPECTION DEFINITIONS:

- PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and noted verification.
- OBSERVE:** Observe these items randomly during the course of each work day to insure that applicable requirements are being met. Operations need not be delayed pending these inspections at contractor's risk.
- DOCUMENT:** Document, with a report, that the work has been performed in accordance with the contract documents. This is in addition to any other reports required in the Special Inspections guide specification.
- CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

The Seismic Design Category for this project is: A, B, C, D, E, F (check appropriate box)

STRUCTURAL - STEEL – WELDING SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:

| STEEL INSPECTION <u>PRIOR TO</u> WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE | | |
|---|------------------------------|--|
| 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.4-1 | | |
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 1. Verify that the welding procedures specification (WPS) is available | PERFORM | |
| 2. Verify manufacturer certifications for welding consumables are available | PERFORM | |
| 3. Verify material identification | PERFORM | Type and grade. |
| 4. Welder Identification System | PERFORM | The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type. |
| 5. Fit-up of groove welds (including joint geometry) | OBSERVE | <ul style="list-style-type: none"> ✓ Joint preparation ✓ Dimensions (alignment, root opening, root face, bevel) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location) ✓ Backing type and fit (if applicable) |
| 6. Configuration and finish of access holes | OBSERVE | |
| 7. Fit-up of fillet welds | OBSERVE | <ul style="list-style-type: none"> ✓ Dimensions (alignment, gaps at root) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location) |
| STEEL INSPECTION <u>DURING</u> WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE | | |
| 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.4-2 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 8. Use of qualified welders | PERFORM | Welding by welders, welding operators, and tack welders who are qualified in conformance with requirements. |
| 9. Control and handling of welding consumables | OBSERVE | <ul style="list-style-type: none"> ✓ Packaging ✓ Electrode atmospheric exposure control |
| 10. No welding over cracked tack welds | OBSERVE | |
| 11. Environmental conditions | OBSERVE | <ul style="list-style-type: none"> ✓ Wind speed within limits ✓ Precipitation and temperature |
| 12. Welding Procedures Specification followed | OBSERVE | <ul style="list-style-type: none"> ✓ Settings on welding equipment ✓ Travel speed ✓ Selected welding materials ✓ Shielding gas type/flow rate ✓ Preheat applied ✓ Interpass temperature maintained (min./max.) ✓ Proper position (F, V, H, OH) ✓ Intermix of filler metals avoided |
| 13. Welding techniques | OBSERVE | <ul style="list-style-type: none"> ✓ Interpass and final cleaning ✓ Each pass within profile limitations ✓ Each pass meets quality requirements |

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor’s risk.

STRUCTURAL - STEEL – WELDING SECTION (CONTINUED)

| STEEL INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.4-3 | | |
|---|------------------------------|---|
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 14. Welds cleaned | OBSERVE | |
| 15. Size, length, and location of all welds | PERFORM | Size, length, and location of all welds conform to the requirements of the detail drawings. |
| 16. Welds meet visual acceptance criteria | PERFORM AND DOCUMENT | <ul style="list-style-type: none"> ✓ Crack prohibition ✓ Weld/base-metal fusion ✓ Crater cross section ✓ Weld profiles ✓ Weld size ✓ Undercut ✓ Porosity |
| 17. Arc strikes | PERFORM | |
| 18. k-area | PERFORM | When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks. |
| 19. Backing removed, weld tabs removed and finished, and fillet welds added where required | PERFORM | |
| 20. Repair activities | PERFORM AND DOCUMENT | |
| 21. Document acceptance or rejection of welded joint or member | PERFORM | |

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL – BOLTING SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:

| STEEL INSPECTION TASKS PRIOR TO BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.6-1 | | |
|--|------------------------------|-------------|
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 1. Manufacture’s certifications available for fastener materials | PERFORM | |
| 2. Fasteners marked in accordance with ASTM requirements | OBSERVE | |
| 3. Proper fasteners selected for joint detail (grade, type, bolt length if threads are to be excluded from shear plane) | OBSERVE | |
| 4. Proper bolting procedure selected for joint detail | OBSERVE | |
| 5. Connecting elements, including appropriate faying surface condition and hole preparation, if specified, meet applicable requirements | OBSERVE | |
| 6. Proper storage provided for bolts, nuts, washers, and other fastener components | OBSERVE | |
| STEEL INSPECTION TASKS DURING BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.6-2 | | |
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 7. Fastener assemblies of suitable condition, placed in all holes and washers (if required) are positioned as required | OBSERVE | |
| 8. Joint brought to the snug-tight condition prior to pretensioning operation | OBSERVE | |
| 9. Fastener component not turned by the wrench prevented from rotating | OBSERVE | |
| 10. Bolts are pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward the free edges | OBSERVE | |
| STEEL INSPECTION TASKS AFTER BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE IBC 1705.2.1, AISC 360-10: Table C-N5.6-3 | | |
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 11. Document acceptance or rejection of all bolted connections | DOCUMENT | |

END SECTION

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DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL - NON DESTRUCTIVE TESTING SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:**

| NONDESTRUCTIVE TESTING OF WELDED JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Section N5.5 | | |
|--|------------------------------|---|
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 1. Use of qualified nondestructive testing personnel | PERFORM | Visual weld inspection and nondestructive testing (NDT) shall be conducted by personnel qualified in accordance with AWS D1.8 clause 7.2 |
| 2. Welded joints subject to fatigue | OBSERVE | Dye penetrant testing (DT) and Ultrasonic testing (UT) shall be performed on 100% of welded joints identified on contract drawings as being subject to fatigue. |
| 3. Weld tab removal sites | OBSERVE | At the end of welds where weld tabs have been removed, magnetic particle testing shall be performed on the same beam-to-column joints receiving UT |

END SECTION

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STRUCTURAL - STEEL - OTHER INSPECTIONS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:

| OTHER STEEL INSPECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 341-16: Tables J8.1 & J10.1 | | |
|---|------------------------------|--|
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 1. Anchor rods and other embedments supporting structural steel | PERFORM | Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete. |
| 2. Fabricated steel or erected steel frame | OBSERVE | Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection. |
| 3. Reduced beam sections (RBS) where/if occurs | DOCUMENT | ✓ Contour and finish ✓ Dimensional tolerances |
| 4. Protected zones | DOCUMENT | No holes or unapproved attachments made by fabricator or erector |
| 5. H-piles where/if occurs | DOCUMENT | No holes or unapproved attachments made by the responsible contractor |

END SECTION

GEOTECHNICAL - DRIVEN DEEP FOUNDATION ELEMENTS SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:

| DEEP DRIVEN FOUNDATION CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE IBC 1705.7 | | |
|--|------------------------------|-------------|
| TASK | INSPECTION TYPE ¹ | DESCRIPTION |
| 1. Verify element materials, sizes and lengths comply with requirements | CONTINUOUS | |
| 2. Inspect driving operations and maintain complete and accurate records for each element | CONTINUOUS | |
| 3. Verify placement locations and 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 document any damage to foundation element | CONTINUOUS | |
| 4. Determine capacities of test elements and conduct additional load tests if required. | CONTINUOUS | |
| 5. For steel or concrete elements, perform additional special inspections in accordance with the Steel and Concrete sections in this schedule | | |

END SECTION

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