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APPENDIX A
Special Inspection Inspector Duties and Responsibilities

SECTIONS

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Duties of Special Inspection shall include but are not limited to the following:

A. GENERAL DUTIES AND RESPONSIBILITIES

1. **General requirements.** Special inspectors shall review approved plans and specifications for special inspection requirements. Special inspectors will comply with the special inspection requirements of the enforcing jurisdiction found in the Statement of Special Inspections including work and materials.

2. **Signify presence at jobsite.** Special inspectors shall notify contractor personnel of their presence and responsibilities at the jobsite. If required by the building official, they shall sign in on the appropriate form posted with the building permit.

3. **Observe assigned work.** Special inspectors shall inspect all work according to the Statement of Special Inspections for which they are responsible for conformance with the building department approved (stamped) plans and specifications and applicable provisions of Ch. 17 OSSC.

4. **Report nonconforming items (discrepancies).** Special inspectors shall bring all nonconforming items to the immediate attention of the contractor. If any such item is not resolved in a timely manner or is soon to be incorporated into the work, the engineer or architect of record and the building official should be notified immediately and the item noted in the special inspector's written report (Section 1704.1.2). Some jurisdictions may require this report to be a separate, individual report from the progress reports. The building official may require this report to be posted in a conspicuous place on the job site. The special inspector should include in the report, as a minimum, the following information about each nonconforming item:
    - Description and exact location.
    - Reference to applicable detail of approved plans/specifications.
    - Name and title of each individual notified and method of notification.
    - Resolution or corrective action taken.

5. **Provide timely progress reports.** The special inspector shall complete written inspection reports for each inspection visit and provide the reports on a timely basis as determined by the building official. The special inspector or inspection agency shall furnish these reports directly to the building official and to the design professional in charge. These reports should be organized on a daily format and may be submitted weekly at the option of the building official. In these reports, special inspectors should provide the following information as a minimum:

    a. **Job Address**. As it appears on the approved building permit and inspection record card.
    b. **Permit Number**. List the permit number(s) for the work performed. There is sometimes more than one permit issued for large projects (i.e. foundation and superstructure under separate permits)
    c. **Location of inspection**. For field inspections, pinpoint exact location of inspection using grid lines, floor numbers, or other applicable identification.
    d. **Identification of materials and methods of construction**. Adequately identify materials and note the methods of construction, erection, placement or other use of the materials. Describe specific items that were inspected. (moment frames, footings, retaining walls, etc,)
    e. **Testing Data**. Identify and document results of all material testing, treatment certificates, nondestructive testing, load test, sampling, welding qualifications, or other tests being utilized.
    f. **Conformance Statement**. State whether the work requiring special inspections was either in conformance or not in conformance with these guidelines and the building official approved plans, specifications, and applicable workmanship provisions of the OSSC and standards. Identify and document any structural design changes approved by the Architect or Registered Design Professional. Identify and document any work completed without required in-process special inspection.

g. **Substitutions and Deviations**. All substitutions of materials or other deviations from approved permit plans and applicable standards and codes shall be immediately reported to the contractor for correction, then, if uncorrected, to the Architect, Engineer, owner, and Building Official. All nonconforming items shall be fully identified on the reports.
h. **Name and registration number of special inspector**.
i. **List of individuals/firms receiving copies of the reports**.

6. **Submit final report.** Special inspectors or inspection agencies shall submit a final signed report to the building department stating that all items requiring special inspection and testing by the Statement of Special Inspection were fulfilled and reported and, to the best of their knowledge, in conformance with the approved plans and specifications. Items not in conformance, unresolved items or any discrepancies in inspection coverage (i.e., missed inspections, periodic inspection when continuous was required, etc.) should be specifically itemized in this report.

B. REINFORCED CONCRETE

1. **Concrete Quality.** Verify that the contractor has submitted concrete mix designs to the Engineer or Architect of Record for approval and a copy of the approved mix design is on site. Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, proper consistency, and workability for placement. Determine the required type, quantity and frequency of tests to be performed on fresh and hardened concrete. Observe sampling of concrete, field testing of fresh concrete and making of test specimens. Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory. Provide or arrange for communication of field-testing results to the architect or Registered Design Professional and to the building official.

2. **Reinforcement.** Verify that reinforcing steels are of the type and size specified and are in conformance with acceptable quality standards. Ensure that reinforcing steel is free of oil, dirt and rust and that steel is properly coated and/or sheathed as specified. Verify that reinforcing steels are located within acceptable tolerances and are adequately supported and secured to prevent displacement during concrete placement. Verify that minimum concrete cover is provided. Verify that placement of reinforcing steel (or ducts) complies with required spacing, profile and quantity requirements, as indicated by both the approved plans and installation drawings. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify proper installation of approved mechanical connections per the manufacturer's instructions and/or evaluation reports. Ensure that all welds of reinforcing steel and other weldments are as specified and have been inspected and approved by an approved welding inspector.

3. **Formwork, Joints and Embeds.** Verify that formwork will provide concrete elements of the specified size and shape. Verify that the location and preparation of construction joints are in accordance with the approved plans, specifications and building code requirements. Verify that the type, quantity, size, spacing and location of embedded items are as specified.

4. **Concrete Placement, Protection and Curing.** Verify acceptable condition of the place of deposit before the concrete is placed. Verify that methods of conveying and depositing concrete avoid contamination and segregation of the mix. Verify that concrete is being properly consolidated during placement. Verify that concrete is protected from temperature extremes, and

determine that proper curing is initiated. When sampling and testing of fresh concrete interferes with monitoring concrete placement by the special inspector (i.e. elevated deck), a minimum of (2) special inspectors shall be present during the placement of concrete. One inspector shall monitor the delivered concrete and one shall monitor the placement of the concrete.

C. PRESTRESSED CONCRETE

1. **General Requirements.** Perform inspections in accordance with the applicable provisions of the Post Tensioning Institute's "Specifications for Unbonded Single Strand Tendons and the Field Procedure Manual."
   Note - Certification as a Reinforced Concrete Special Inspector is required before certification as a Prestressed Concrete Special Inspector. All items listed above under Reinforced Concrete are considered prerequisite to the knowledge for special inspection of prestressed concrete.

2. **Concrete Quality.** Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, and proper consistency and workability for placement. Determine the required type, quantity and frequency of tests to be performed on fresh and hardened concrete. Observe the sampling of concrete, field testing of fresh concrete and making of test specimens. Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory. Provide or arrange for communication of field testing results to the architect or Registered Design Professional and to the building official.

3. **Reinforcement.** Verify that reinforcing steel and tendons are of the type, grade and size specified and are in conformance with acceptable quality standards. Verify that the reinforcing steel and tendon system are fabricated in conformance with acceptable quality standards. Verify nylon slings are used to move the bundles of tendons. Verify material certification for tendons. Verify whether the post-tensioning materials are properly stored. Verify the condition of the anchors and wedges. Verify that the conditions of tendons at the time of concrete placement are free of oil, dirt and excessive rust, and are properly coated and/or sheathed as specified. Verify that reinforcing steel and tendons are located within specified tolerances, and are adequately supported and secured to prevent displacement during concrete placement. Verify that minimum concrete cover is provided. Verify that placement of reinforcing steel and tendons (or ducts) comply with spacing, profile and quantity requirements, as indicated by the installation drawings and approved plans. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify proper installation of approved mechanical connections per the manufacturer's instructions and/or evaluation reports. Verify that welds have been inspected and approved as specified. Verify that prestressed rock and soil anchors are fabricated and installed as specified. Verify if there are conflicts with the tendons and anchors and the location of other embedded items. Verify the proper placement of anchors. Where applicable verify if the encapsulated system is installed properly. Verify that sweep of the tendons around block-outs and opening is correct.

4. **Prestressing and Grouting.** Verify that the required concrete strength has been attained prior to transferring prestressing forces. Verify proper equipment calibration. Verify that proper stressing (or tensioning) sequences are used, proper jacking forces are applied, and acceptable elongations are attained and recorded. Verify that tendons and anchorages are properly sealed or otherwise protected as specified. Verify that ducts including inlets and outlets are of the required size,

mortar-tight and located correctly. Verify that proper grout materials, strength and grouting pressures are used as specified. At least one inspector shall be present during the pre-stressing for each steel stressing ram being used at the site. Verify the final prestressing steel elongation immediately after stressing.

5. **Formwork, Joints and Embedments.** Verify that formwork will provide concrete elements of the specified size and shape. Verify that the location and preparation of construction joints are in accordance with the approved plans, specifications, and applicable codes and standards. Verify that the type, quantity, size, spacing, condition and location of embedded items are as specified.

6. **Concrete Placement, Protection and Curing.** Verify acceptable condition of the place of deposit before the concrete is placed. Verify that methods of conveying and depositing concrete avoid contamination, segregation of the mix, and displacement of reinforcement, embedments and forms. Verify that concrete is being properly consolidated during placement. Verify that concrete is protected from ambient temperature extremes during placement and curing. Verify that concrete is being cured as specified by approved plans, specifications and applicable codes. A minimum of two (2) special inspectors shall be present during the placement of concrete. One (1) inspector shall monitor the concrete as delivered and one shall monitor the placement of the concrete. The second special inspector shall be at a minimum an ACI Grade I Concrete Field Testing Technician.

D. STRUCTURAL MASONRY

1. **Materials.** Verify that brick, block, cement, lime, aggregates, reinforcement, connectors, water, admixtures and other materials are the type specified and approved. Verify that materials are properly stored. Verify that mix proportions, material handling and mixing are in accordance with code requirements. Verify that grout is batched in accordance with approved mix. Determine the required material strengths, type and frequency of tests to be performed. Observe sampling, field testing and fabrication of test specimens. Verify that masonry strength meet approved specifications. Verify proper sample identification, site storage, protection and transportation to the testing laboratory.

2. **Masonry Placement.** Verify that the condition of substrate is acceptable for placement, that mortar is properly placed and that the masonry units are placed in accordance with the approved plans. Verify that the type, quantity, size, spacing and location of embedded items are as specified. Verify that the location and preparation of movement joints are in accordance with the approved plans, specifications and building code requirements. Verify that the masonry is protected from temperature extremes and adverse weather conditions. Provide initial inspection at the very start of block layment and continue on a periodic or continuous basis as required. Verify the size and location of masonry structural elements

3. **Reinforcement and Connector Placement.** Verify that the reinforcing steel and connectors comply with required size, grade, spacing, profile, condition and quantity requirements, as indicated by both the approved plans and installation drawings. Verify that reinforcing steel and connectors are placed in the proper location within acceptable tolerances. Verify minimum coverage and clearance to masonry surfaces. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify installation of approved mechanical connections

per manufacturer's instructions and/or evaluation reports. Verify all structural embeds conform to the approved plans and specifications in regards to fabrication quantity, grade, and type. Verify type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.

4. **Grout Placement.** Verify that grout spaces are free of obstructions and that cleanouts are provided as required. Verify that methods of conveying and placing grout avoid contamination and segregation and comply with time limits and grout lift requirements. Verify that grout is being properly consolidated and reconsolidated during placement.

E. STRUCTURAL STEEL & BOLTING (S1)

1. **General Requirements.** The special inspections for steel elements shall be as required by the OSSC. The requirements of this section are applicable to steel and structural steel as referenced in OSSC, Chapter 17.
   Exception: Special inspection for the fabrication process may be waived by the Building Official when the work is performed on the premises of a fabricator registered and approved by the OBOA.

2. **Material Sampling, Testing and Verification.** Verify that the steel shapes and bolts are of the type, size, grade and condition specified on the approved plans and specifications. Verify the required type, quantity, location and frequency of tests to be performed, and witness preparation of properly identified test material samples on all materials. Provide or arrange for documentation and transportation of samples to the laboratory. Verify that required testing is performed on materials as required by applicable standards and specifications.
   In accordance with Section 1704.2, the special inspector shall verify that the fabricator maintains detailed shop fabrication and quality control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to approved construction documents and reference standards. The special inspector shall verify that the fabricator has in place quality control procedures to verify the structural member sizes.

3. **High-Strength Bolting.** Verify correct type, size and location of bolts and bolt holes, nuts and washers for type of connection specified on approved plans and specifications. Verify protected storage of bolts, nuts and washers as required by applicable standards and specifications. Verify that faying surfaces at connections utilizing high-strength bolts are in compliance with applicable standards. Observe or conduct bolt tension verification tests on required high-strength bolt assemblies. Identify and verify joint type and installation of bolt assemblies per approved plans and specifications. Verify use of the approved method and sequence of bolt tightening.
   Verify that structural steel frame orientation, details and frame member sizes are in accordance with approved plans and specifications. Verify that column base plates are the designed configuration, have correct size hole and proper clearance for grouting. Verify grout placement and sampling. Verify that base plates are securely seated and fastened in accordance with applicable plans and specifications.

4. **Steel Framing Observation.** Verify that structural steel frame orientation, details and frame member sizes are in accordance with approved plans and specifications. Verify that column base plates are the designed configuration, have correct size hole and proper clearance for grouting.

Verify grout placement and sampling. Verify that base plates are securely seated and fastened in accordance with applicable plans and specifications.

F. STRUCTURAL WELDING (S2)

1. **General Requirements.** The special inspections for steel elements shall be as required by the OSSC. The requirements of this section are applicable to steel and steel construction as referenced in OSSC, Chapter 17. Some inspections may be periodic as allowed by OSSC Section 1704.3 provided the materials, qualifications of welding procedures and qualifications of welders, and welders are verified prior to the start of work; periodic inspections are made of the work in progress; and a visual inspection of all welds is made.
   Exception: Special inspection for the fabrication process may be waived by the Building Official when the work is performed on the premises of a fabricator certified and approved by OBOA as an approved steel fabricator.
   The special inspections of welding for steel seismic force resisting systems such as braced frames and moment frames shall be performed by a special inspector who has both a Structural Welding (S2) certification and a CWI from AWS.

   Special inspectors performing welding inspections on a Seismic Load Resisting System (SLRS) (as defined by AISC 341, Seismic Design Manual) such as a braced frame system or moment frame system shall be qualified in accordance with AWS QC1- Standard for AWS Certification of Welding Inspectors: http://files.aws.org/certification/docs/qc1-07.pdf

   These requirements shall be in addition to the requirements in this section for registration for Structural Steel – Welding S2.

2. **Material Sampling, Testing and Verification.** Verify that the steel shapes, base metals, filler metals and gases are of the type, size, grade and condition specified on the approved plans, specifications and Welding Procedures Specifications. Verify the required type, quantity, location and frequency of tests to be performed, and witness preparation of properly identified test material samples on all materials. Provide or arrange for documentation and transportation of samples to the laboratory. Verify that required destructive testing is performed on materials as required by applicable standards and specifications. Verify that required nondestructive examinations are performed as required by applicable standards and specifications.

3. **Structural, Reinforcing and Sheet Steel Welding.** Provide an initial in-process welding inspection at the very start of welding operations and then continue on a periodic or continuous basis as required. Verify that the welding equipment and process has the capability to produce the specified welds. Insure that welding equipment is calibrated and appropriate for use with the welding process. Verify and/or witness qualification of welders, welding operators and tackers for conformance with American Welding Society standards and specifications. Verify that welders are qualified to perform the specified work. Verify that the proposed welding procedure for structural steel, reinforcing steel and sheet metal is a standard prequalified procedure, or has been properly qualified and approved. Verify that welding processes, sequences and procedures are followed in accordance with approved Welding Procedures Specifications. Review approved plans and specifications for weld types and locations. Verify that filler materials are stored and handled in accordance with manufacturer and project specifications. Verify that base metal to be welded is properly prepared and oriented. Verify that weldments have proper joint geometry and have

backing and start/runoff tabs where required. Inspect to ensure that weld and structural steel repairs are performed in accordance with approved procedures. Verify that fabricated elements are within permissible tolerances. Verify that welds have the specified length and effective throat. Verify that the weld profile meets applicable shape, size and quality requirements. When required, oversee the nondestructive testing of structural welds. When nondestructive testing other than visual is to be required, it is to be so stated in the permit documents. This information shall designate the welds to be tested, the extent of testing of each weld, and the method of testing. Testing personnel performing the interpreting nondestructive testing shall be qualified in accordance with the current edition of American Society of Nondestructive Testing Recommended Practice No. SNT-TC-1A

G. SPRAY-APPLIED FIREPROOFING

1. **Materials, Preparation, Application and Testing.** Verify that the proposed materials, the type specified, are properly stored and have been approved by the registered design professional in responsible charge and the building official. Verify that the substrate has been properly prepared and is free of oil, dirt, scale, loose paint or primer and other materials that may prevent adequate adhesion. Identify the members to be fireproofed and the minimum required coverage and thickness. Verify the condition of the finished application. Determine the required type and frequency of tests to be performed. Observe the sampling, field testing and fabrication of test specimens. Verification that materials are of type specified, properly stored and approved; verification that the substrate has been properly prepared and free of conditions which may prevent adhesion; identification of members to be fireproofed, the minimum required coverage and thickness of the fireproofing, and the condition of the finished application; and determination of the required tests and observation of sampling, field testing and fabrication of test specimens. Inspection and test procedures shall be based on ASTM E 605, E 736, and/or AWCI Technical Manual 12-A. Verifying that spray-applied fireproofing, upon complete drying or curing, does not exhibit deep or wide cracks, voids, spalls, delamination or any exposure of the substrate. Minor surface irregularities are acceptable.

H. STRUCTURAL WOOD (SW)

1. **General Requirements**
   Special Inspection is required:
   a. When so designated by the architect or Registered Design Professional; or
   b. When such special inspection is specifically required by the Building Official
   c. For Wood and Structural Wood construction as defined in the OSSC, Chapter 17.

2. **Materials, Preparation, Application and Testing.** Where fabrication of structural load-bearing members and assemblies is being performed on the premises of a fabricator's shop, special inspection of the fabricated items shall be required

3. **Wood Construction, Section 1704.6.1, site built high load diaphragms.** The special inspector shall inspect the wood structural panel sheathing to ascertain whether it is of the grade and thickness shown on the approved building plans. Additionally, the special inspector must verify the nominal size of framing members at adjoining panel edges, the nail or staple diameter and length, the number of fastener lines and that the spacing between fasteners in each line and at edge margins agrees with the approved building plans.

4. **Special Inspections for Seismic Resistance.** Continuous special inspection is required during field gluing operations of elements of the seismic-force-resisting system. Periodic special inspection is required for nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system, including wood shear walls, wood diaphragms, drag struts, braces, shear panels and hold-downs.

I. PROPRIETARY ANCHORS (PA)

1. **Materials, Preparation, Application and Testing.** Review the appropriate evaluation report for the specified proprietary anchors. The contractor shall provide to the special inspector a copy of the evaluation report. Verify anchor manufacturer, type, grade, diameter, length, embedment, edge distance, and spacing are in accordance with the approved permit drawings. Verify the condition of the concrete, drill method, installation methods are in accordance with the evaluation report. When required by the registered design professional, perform specified testing to verify the base material compressive strength and member thickness.

J. SHOTCRETE (SC)

1. **Preconstruction Tests.** When required by the building official, a test panel shall be shot, cured, cored or sawn, examined and tested prior to commencement of the project. The sample panel shall be representative of the project and simulate job conditions as closely as possible. The panel thickness and reinforcing shall reproduce the thickest and most congested area specified in the structural design. It shall be shot at the same angle, using the same nozzleman and with the same shotcrete mix design that will be used on the project. The equipment used in preconstruction testing shall be the same equipment used in the work requiring such testing, unless substitute equipment is approved by the building official.

2. **Shotcrete Quality.** Verify that the contractor has submitted shotcrete mix designs to the Engineer or Architect of Record for approval and a copy of the approved mix design is on site. Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, and proper consistency and workability for placement.

3. **Reinforcement.** Verify that reinforcing steels are of the type and size specified and are in conformance with acceptable quality standards. Ensure that reinforcing steel is free of oil, dirt and rust and that steel is properly coated and/or sheathed as specified. The maximum size of reinforcement shall be No. 5 bars unless it is demonstrated by preconstruction tests that adequate encasement of larger bars will be achieved. Verify that reinforcing steels are located within acceptable tolerances and are adequately supported and secured to prevent displacement during shotcreting. Verify that minimum shotcrete cover is provided. Verify that placement of reinforcing steel (or ducts) complies with required spacing, clearances between parallel bars, and profile and quantity requirements, as indicated by both the approved plans and installation drawings. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Lap splices of reinforcing bars shall utilize the noncontact lap splice method with a minimum clearance of 2 inches (51 mm) between bars. The use of contact lap splices necessary for support of the reinforcing is permitted when approved by the building official, based on satisfactory preconstruction tests that show that adequate encasement of the bars will be achieved, and

provided that the splice is oriented so that a plane through the center of the spliced bars is perpendicular to the surface of the shotcrete. Verify proper installation of approved mechanical connections per the manufacturer's instructions and/or evaluation reports. Ensure that all welds of reinforcing steel and other weldments are as specified and have been inspected and approved by an approved welding inspector.

4. **Formwork, Joints and Embeds.** Verify that formwork will provide shotcrete elements of the specified size and shape. Except where permitted herein, unfinished work shall not be allowed to stand for more than 30 minutes unless edges are sloped to a thin edge. For structural elements that will be under compression and for construction joints shown on the approved construction documents, square joints are permitted. Before placing additional material adjacent to previously applied work, sloping and square edges shall be cleaned and wetted. Verify that the type, quantity, size, spacing and location of embedded items are as specified.

5. **Shotcrete Placement, Protection and Curing.** Verify acceptable condition of the place of deposit before the shotcrete is placed. Verify that methods of conveying and depositing shotcrete avoid contamination and segregation of the mix. During the curing periods specified herein, shotcrete shall be maintained above 40°F (4°C) and in moist condition. Shotcrete shall be kept continuously moist for 24 hours after shotcreting is complete or shall be sealed with an approved curing compound. Final curing shall continue for seven days after shotcreting, or for three days if high early-strength cement is used, or until the specified strength is obtained. Final curing shall consist of the initial curing process or the shotcrete shall be covered with an approved moisture-retaining cover. Natural curing shall not be used in lieu of that specified in this section unless the relative humidity remains at or above 85 percent, and is authorized by the registered design professional and approved by the building official.

6. **Shotcrete Acceptance Criteria.** Strength tests for shotcrete shall be made by an approved agency on specimens that are representative of the work. Specimens shall be taken from the in-place work or from test panels, and shall be taken at least once each shift, but not less than one for each 50 cubic yards (38.2 m^3) of shotcrete. Panels shall be shot in the same position as the work, during the course of the work and by the nozzlemen doing the work. The conditions under which the panels are cured shall be the same as the work. The average compressive strength of three cores from the in-place work or a single test panel shall equal or exceed 0.85 f'_c with no single core less than 0.75 f'_c. The average compressive strength of three cubes taken from the in-place work or a single test panel shall equal or exceed f'_c with no individual cube less than 0.88 f'_c. To check accuracy, locations represented by erratic core or cube strengths shall be retested.

K. COLD FORMED STEEL FRAMING (CF)

The special inspector shall verify cold formed steel framing materials, details such as bracing, stiffening, member locations, screw attachments, application of joint details at each connection, and shall inspect welding. Periodic special inspection is required for screw attachment, bolting, anchoring, and other fastening of components within the seismic-force-resisting system, including struts, braces, and hold-downs.

The special inspector need not be continuously present during welding of cold-formed steel framing members provided the materials, welding procedures, and qualifications of welders are verified prior to the start of work; periodic inspections are made of the work in progress; and a visual inspection of

all welds is made. The special inspectors inspecting the welding shall be registered in the category of Structural Welding (S2).

L. SEISMIC RESISTANCE

The requirements for Seismic Resistance are defined adequately by Ch. 17, OSSC and do not need repeating in the SIP program.

1. Special Inspection in Building Occupancy Categories III and IV (OSSC, Table 1604.5) is required for seismic resistance for the following:
    a. The seismic-force- resisting systems in structures.
    b. Designated seismic systems in structures.
    c. Architectural, mechanical, and electrical components in structures.

2. A Quality Assurance Plan (QAP) for each designated seismic system, seismic-force-resisting system, architectural, mechanical and electrical components, and for the special inspections and testing requirements shall be prepared by a registered design professional as required by the OSSC, Chapter 17. The Quality Assurance Plan shall explain in detail the key elements or items to be inspected.

3. Each contractor responsible for the construction of a seismic-force-resisting system, designated seismic system, or components listed in the QAP shall submit a written contractor's statement of responsibility to the local jurisdiction in accordance with the OSSC, Chapter 17.

4. Seismic-Force-Resisting Systems: The seismic-force-resisting system may be constructed with masonry, concrete, steel/structural steel, wood/structural wood, cold formed steel, and other materials regulated by the OSSC and these Rules. Consequently, in addition to the requirements of this section, other sections of these Rules are applicable to the special inspection requirements for seismic resistance.
    a. Structural steel
    The duties of the special inspector shall include:
    (1) Verifying structural welding in accordance with AISC 341.
    (2) The requirements for steel construction in Section E of this program are also applicable to special inspection for seismic resistance of structural steel.
    b. Structural wood
    The duties of the special inspector shall include:
    (1) Verifying field gluing operations of the seismic-force-resisting system.
    (2) The requirements for wood construction in Section G of this program are also applicable to special inspection for seismic resistance of structural wood.
    c. Cold-formed steel framing
    The duties of the special inspector shall include:
    (1) Verifying the size, gage and spacing of framing members and the thickness and type of sheathing used in shear walls and diaphragms.
    (2) Verifying the screw type, the number of fastener lines, and that spacing between fasteners in each line and at edge margins is in compliance with the approved permit documents.
    (3) Verifying the length and location of shear walls.
    (4) Verifying hold down installations at shear walls.
    (5) Verifying diaphragm chord, drag strut, braces, and related details.

(6) Confirming that screws are driven flush without penetrating the surface of the sheathing.
(7) Verifying the installation of the base-plate bolting or other attachments.
(8) Inspecting of elements of the seismic-force-resisting system during welding operations. The special inspector for welding shall be certified for S-2, Welding.

5. Components: A component is a part or element of an architectural, electrical, mechanical, or structural system.
   a. Storage racks and access floors
      The duties of the special inspector shall include:
      (1) Verifying that anchorage of racks and access floors is in accordance with the approved permit documents. The inspection shall be made during the installation of the anchorage systems and attachments. The special inspector for proprietary anchors and welding shall be certified in accordance with these Rules.
   b. Architectural components
      Architectural components include exterior wall panels and cladding, their anchorage, interior and exterior nonbearing walls, interior and exterior veneer, and suspended ceiling systems and their anchorage.
      In accordance with Chapter 16, OSSC, the definition for cladding includes the elements of the building envelope that do not qualify as part of the main windforce-resisting system.
      The duties of the special inspector shall include:
      (1) Verifying that the installation anchorage in architectural components identified in the Quality Assurance Plan are in accordance with the approved permit documents.
      (2) The special inspector for proprietary anchors and welding shall be certified.
   c. Mechanical and electrical components
      The manufacturers of components identified in the Quality Assurance Plan that are required to meet the testing requirements of Chapter 17 shall submit a certificate of compliance for review and acceptance by the registered design professional responsible for the design, and for approval by the Bureau of Development Services. In accordance with the requirements of Chapter 17, the basis of certification may be an analytical method using dynamic characteristics and forces from Chapter 16 or by more rigorous analysis.
      The duties of the special inspector shall include:
      (1) Verifying that the anchorage of electrical equipment for emergency or standby power is in accordance with the approved permit documents.
      (2) Verifying that the installation of piping systems intended to carry flammable, combustible, or highly toxic contents and their associated mechanical units are in accordance with the approved permit documents.
      (3) Verifying that the installation of HVAC ductwork that will contain hazardous materials is in accordance with the approved permit documents.
      (4) Verifying that the installation and anchorage of other components shown on the approved permit documents that require special inspections is in accordance with the approved permit documents.
      (5) For components identified in the Quality Assurance Plan that are required to meet the testing requirements of Chapter 17, verifying that the label, anchorage or mounting conforms to the certificate of compliance.
   d. Seismic Isolation Systems
      The duties of the special inspector shall include:

(1) Provide periodic inspection during the installation and anchorage of isolation units and dissipation devices that are part of the seismic isolation systems.
(2) Verify materials, locations, quantities, and component configuration and assembly are in conformance with the manufacturer's requirements and the approved construction documents.

M. SOILS

1. **General Requirements.** Soils special inspections shall be performed by the registered design professional who prepared the geotechnical report for the project, a qualified individual working under the supervision and control of the registered design professional, or an approved testing agency under the direction of the registered design professional. If circumstances require it, the owner shall designate a substitute registered design professional who shall perform the duties required of the original registered design professional. In this case, the substituted registered design professional shall indicate in writing that they have the geotechnical report in their possession, have reviewed the geotechnical report, they concur with the conclusions and recommendations contained in the geotechnical report or have provided alternative conclusions and recommendations, and will assume responsibility as the registered design professional for the project. Work requiring special inspection shall be determined in accordance with the OSSC, Chapter 17, and the approved soils report. The special inspections for existing site soil conditions fill placement, and load-bearing requirements shall follow Sections 1704.7. The approved soils report, required by Section 1803.2, shall be used to determine compliance.

2. **Site Preparation.** Prior to placement of the prepared fill, the special inspector shall determine that the site has been prepared in accordance with the approved soils report. The ground surface shall be prepared to receive fill by removing vegetation, topsoil and other unsuitable materials, and scarifying the ground (unless noted otherwise) to provide a bond with the fill material. The special inspector shall verify that the exposed soils are consistent with the subsurface conditions described in the geotechnical report and shall verify that excavations are extended to proper depth and have reached proper material.

3. **Fill/Backfill Placement/Excavation.** During placement and compaction of the fill material, the special inspector shall continuously determine that the material being used and the maximum lift thickness comply with the approved report. Fill material shall not include organic, frozen, or other deleterious materials. No rock or similar irreducible material greater than 12 inches in any dimension shall be included in fills. The special inspector shall determine, at the approved frequency that the in-place dry density of the compacted fill complies with the approved report. As a minimum, all fill material shall be compacted to 90 percent of maximum density as determined by ASTM D1557, Modified Proctor, in lifts not exceeding 12 inches in depth.
   Excavations for any purpose shall not remove lateral support from any footings or foundation without first underpinning or protecting the footing or foundation against settlement or lateral translation.
   The excavation outside the foundation shall be backfilled with soil that is free of organic material, construction debris, cobbles and boulders, or a controlled low-strength material (CLSM). The backfill shall be placed in lifts and compacted, in a manner that does not damage the foundation or the waterproofing/damp proofing material.
   Exception: Controlled low-strength material need not be compacted.

4. **Piles & Piers.** The soils special inspector shall be continuously present during the installation and load testing of piles and piers. Detailed records for pile and pier installation and load testing shall be maintained and submitted. The approved geotechnical report and the construction documents prepared by the registered design professional shall be used to determine compliance. The soils special inspector shall verify the following:

Pile Foundations

a. Verify pile materials, sizes and lengths comply with the requirements.
b. Determine capacities of test piles and conduct additional load tests, as required.
c. Observe driving operations and maintain complete and accurate records for each pile.
d. 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 pile damage.
e. For steel piles, perform additional inspections in accordance with Section 1704.3.
f. For concrete piles and concrete-filled piles, perform additional inspections in accordance with Section 1704.4.
g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.
h. For augered uncased piles and caisson piles, perform inspections in accordance with Section 1704.8 & 1704.9.
i. For helical pile foundations, the information recorded shall include installation equipment used, pile dimensions, tip elevations, final depth, final installation torque, and other pertinent installation data. Verify installation procedures are in accordance with the ICC Evaluation Services Report.

Pier Foundations

a. Observe drilling operations and maintain complete and accurate records for each pier.
b. Verify placement locations and plumbness, confirm pier diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end bearing strata capacity.
c. For concrete piers, perform additional inspections in accordance with Section 1704.4.
d. For masonry piers, perform additional inspections in accordance with Section 1704.5.
e. Record concrete or grout volumes.

In addition, the special inspector shall verify proper concreting practices are followed including the following:

a. When the casing/liner is withdrawn during concreting the concrete shall be maintained above the bottom of the casing/liner at a sufficient height to offset any hydrostatic or lateral soil pressure.
b. Where concrete is placed by pumping through a hollow-stem auger, the auger shall be permitted to rotate clockwise during withdrawal. Concrete pumping pressures shall be measured and maintained high enough at all times to offset hydrostatic and lateral earth pressure. Concrete volumes shall be measured to ensure that the volume of concrete placed in each pile is equal to or greater than the theoretical volume of the hole created by the auger. Where the installation process of any pile is interrupted or a loss of concreting pressure occurs, the pile shall be re-drilled to 5 feet below the tip of the auger when the installation was interrupted or concrete pressure was lost and reformed.
c. A pile shall not be driven within four and one-half average pile diameter of a pile filled with concrete less than 24 hours old unless otherwise approved.

d. Concrete shall be placed in such a manner as to ensure the exclusion of any foreign matter and to secure a full-sized shaft.
e. Concrete shall not be placed through water except where a tremie or other approved method is used.
f. When depositing concrete from the top of the pier, the concrete shall not be chuted directly into the pier but shall be poured in a rapid and continuous operation through a funnel hopper centered at the top of the pier

5. Controlled low-strength material (CLSM). Where footings will bear on controlled low-strength material (CLSM), the CLSM shall comply with the provisions of an approved report, which shall contain the following:

a. Specifications for the preparation of the site prior to placement of the CLSM.
b. Specifications for the CLSM.
c. Laboratory or field test method(s) to be used to determine the compressive strength or bearing capacity of the CLSM.
d. Test methods for determining the acceptance of the CLSM in the field.
e. Number and frequency of field tests required to determine compliance with Item 4.

Soil Anchors, Mechanically Stabilized Earth (MSE), Retaining Walls, Rockery Retaining Wall, and other geotechnical construction elements may require special inspection when specified. The special inspection criteria should be outlined within the permit documents and/or approved soils report.

N. NON-DESTRUCTIVE TESTING (NDT) OF STRUCTURAL STEEL

The NDT of steel elements shall be as required by the Oregon Structural Specialty Code (OSSC), American National Standards Institute (ANSI)/American Institute for Steel Construction (AISC) 341, ANSI/AISC 360, ANSI/AWS D1.1, ANSI/AWS D1.8 (when specified), and the project specifications. All NDT personnel shall be qualified and certified in accordance with the American Society for Nondestructive Testing Recommended Practice SNT-TC-1A. Level II or Level III inspectors are permitted to conduct tests. Level I inspectors working under the direct supervision of a Level II or III inspector are also permitted to conduct the tests. Ultrasonic testing (UT) and magnetic particle examination (MT) shall be performed by the method and frequency prescribed in the project specifications, OSSC, and reference documents. Welds subject to NDT shall first have been found acceptable by visual inspection in conformance with ANSI/AWS D1.1, Structural Welding Code - Steel.

UT shall be performed per section 6, part F of ANSI/AWS D1 .1 unless noted otherwise. MT shall be performed per the requirements of ASTM E709 "Standard Guide for Magnetic Particle Examination" unless noted otherwise. In addition to the NDT of welds, when specified, NDT of the K-Area, base metal NDT for lamellar tearing and laminations, beam cope and access hole NDT, reduced beam section repair NDT, and weld tab removal sites shall be performed. UT and MT written practice shall be reviewed and approved by Level III qualified and certified personnel in accordance with ASNT SNT-TC-1A.

O. SUSPENDED CEILINGS

1. **General Requirements.** Perform inspections in accordance with the approved permit drawings, the Northwest Wall & Ceiling Bureau “Field Technical Information Document 401” and the Ceiling & Interior Systems Construction Association (CISCA) “Guidelines for Seismic Restraint for Direct Hung Suspended Ceiling Assemblies”.

2. **Suspended Ceiling Grid.** Verify the suspended ceiling grid materials are those specified by the project plans and specifications. Verify the grid assembly and attachments are installed in accordance with the applicable ICC Evaluation Services Report. Verify grid location and layout is in accordance with the project plans and specifications. Verify grid attachments and the other end of the Verify pop rivets are installed at rigid ends of the grid in accordance with the project plans and specifications. Verify seismic separation joints. Verify spreader bars are installed in accordance with the project plans and specifications. Verify the installation of perimeter clips is in accordance with the project plans and specifications and applicable ICC Evaluation Services Report. Verify allowable movement in all directions around sprinkler heads or that flexible sprinkler heads are used.

3. **Suspended Ceiling Anchorage and Attachment.** Verify the anchors and/or power actuated fasteners (P.A.F.) used are those specified by the project plans and specifications. Verify installation of anchors and P.A.F. is in conformance with the applicable ICC Evaluation Services Report and the project plans and specifications. When required, provide pull testing of P.A.F. in accordance with the project plans, specifications and the State of Oregon Building Codes Division Statewide Code Interpretation regarding OSSC section 1613.1. Verify the wire size is in accordance with the project plans and specifications. Verify the splayed wires, vertical wires and slack wires are located in accordance with the project plans and specifications. Verify the wires are properly attached to the grid and anchorage. Verify vertical wires are plumb within project requirements. Verify lighting fixtures and mechanical services are installed with hanger wires in accordance with the project plans and specifications. Verify the compression strut material, size, attachment and locations are in accordance with the project plans and specifications.

P. FIRE-RESISTANT PENETRATIONS AND JOINTS

Special Inspections for through-penetrations, membrane penetration firestops, fire-resistant joint systems, and perimeter fire barrier systems that are tested and listed in accordance with sections 714 Penetrations and 715 Fire-Resistant Joint Systems of the Oregon Structural Specialty Code (OSSC) are required when specified. Inspections of penetration firestop systems shall be conducted in accordance with ASTM E2174 and to the frequency therein. Inspections of fire-resistant joint systems shall be in accordance with ASTM E2393 and to the frequency therein. Inspectors shall verify that installations are in accordance with the project plans, specifications and the manufacturer's instructions to ensure the continuity of the fire related constructions is maintained. This includes verifying materials and systems have been tested or evaluated in accordance with the appropriate ASTM or UL standard as required by the OSSC and/or the Oregon Fire Code and all materials include a Listing Label for the intended use. Installations not in accordance with listed systems require Engineering Judgements (or EJs) by the Design Professional in Responsible Charge (DPIRC) in concert with the manufacturer's qualified technical personnel, and should not be used in lieu of tested systems when available. A preconstruction conference shall be held and attended by the general contractor, installer, special inspector, Engineer of Record, and when requested the Authority Having Jurisdiction (AHJ). The preconstruction meeting shall discuss the schedule of inspections and tests required. Inspector and installer qualifications shall be evaluated by the DPIRC and AHJ.

Q. SPECIAL CASES

1. Special inspections shall be required for proposed work that is, in the opinion of the building official, unusual in its nature, such as but not limited to:

a. Construction materials and systems that are alternatives to materials and systems prescribed by this code
b. Unusual design applications of materials described in this code
c. Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in applicable codes or in standards.

2. The acceptance criteria and frequency of special inspection for special cases shall be developed by the building official or by the engineer of record and approved by the building official. In addition, inspection of special cases shall be in accordance with all applicable sub-sections of these Rules.

APPENDIX B
Statement of Special Inspections Agreement

Special inspection and testing shall meet the minimum requirements of Sections 1704 and 1705 of the OSSC. The following conditions also are applicable:

A: Duties and Responsibilities of the Special Inspector

1. **General requirements.** Special inspectors shall review approved plans and specifications for special inspection requirements. Special inspectors will comply with the special inspection requirements of the enforcing jurisdiction found in the Statement of Special Inspections including work and materials.

2. **Signify presence at jobsite.** Special inspectors shall notify contractor personnel of their presence and responsibilities at the jobsite. If required by the building official, they shall sign in on the appropriate form posted with the building permit.

3. **Observe assigned work.** Special inspectors shall inspect all work according to the Statement of Special Inspections of which they are responsible for conformance with the building department-approved (stamped) plans and specifications, and applicable provisions of Ch. 17 OSSC.

4. **Report nonconforming items (discrepancies).** Special inspectors shall bring all nonconforming items to the immediate attention of the contractor. If any such item is not resolved in a timely manner or is soon to be incorporated into the work, the engineer or architect of record and the building official should be notified immediately and the item noted in the special inspector's written report (Section 1704.2.4). Some jurisdictions may require this report to be a separate, individual report from the progress reports. The building official may require this report to be posted in a conspicuous place on the job site. The special inspector should include in the report, as a minimum, the following information about each nonconforming item:

   - Description and exact location.
   - Reference to applicable detail of approved plans/specifications.
   - Name and title of each individual notified and method of notification.
   - Resolution or corrective action taken.

5. **Provide timely progress reports.** The special inspector shall complete written inspection reports for each inspection visit and provide the reports on a timely basis as determined by the building official. The special inspector or inspection agency shall furnish these reports directly to the building official as well as the design professional in charge (Section 1704.2.4). These reports should be organized on a daily format and may be submitted weekly at the option of the building official. In these reports, special inspectors should provide the following information as a minimum:

   a. **Job Address**. As it appears on the approved building permit and inspection record card.

b. **Permit Number**. List the permit number(s) for the work performed. There is sometimes more than one permit issued for large projects (i.e. foundation and superstructure under separate permits).
c. **Location of inspection**. For field inspections, pinpoint exact location of inspection using grid lines, floor numbers, or other applicable identification.
d. **Identification of materials and methods of construction**. Adequately identify materials and note the methods of construction, erection, placement, or other use of the materials. Describe specific items that were inspected. (moment frames, footings, retaining walls, etc.)
e. **Testing Data**. Identify and document results of all material testing, treatment certificates, nondestructive testing, load test, sampling, welding qualifications, or other tests being utilized.
f. **Conformance Statement**. State whether the work requiring special inspections was either in conformance or not in conformance with these guidelines and/or the building official-approved plans, specifications, and applicable workmanship provisions of the OSSC and standards. Identify and document any structural design changes approved by the Architect or Registered Design Professional. Identify and document any work completed without required in-process special inspection.
g. **Substitutions and Deviations**. All substitutions of materials or other deviations from approved permit plans and applicable standards and codes shall be immediately reported to the contractor for correction, then, if uncorrected, to the Architect, Engineer, owner, and Building Official. All nonconforming items shall be fully identified on the reports.
h. **Name and registration number of special inspector**.
i. **List of individuals/firms receiving copies of the reports**.

6. **Submit final report.** Special inspectors or inspection agencies shall submit a final signed report to the building department stating that all items requiring special inspection and testing by the Statement of Special Inspection were fulfilled and reported and, to the best of their knowledge, in conformance with the approved plans and specifications (Section 1704.2.4). Jurisdictions may also require the design professional in responsible charge to sign the report before it is submitted to the building official. Items not in conformance, unresolved items or any discrepancies in inspection coverage (i.e., missed inspections, periodic inspection when continuous was required, etc.) should be specifically itemized in this report.

B. Owner Responsibilities

The project owner, the design professional in responsible charge or an agent of the owner is responsible for funding special inspection services. Measures should be taken to ensure that the scope of work and duties of the special inspector as outlined in the Statement of Special Inspections are not compromised.

C. Registered Design Professional in Responsible Charge

The design professional in responsible charge should be a consenting party by written acknowledgment of special inspection and testing agreements. The design professional in responsible charge has many duties and responsibilities related to special inspection, including the following:

The Statement of Special Inspections must be submitted with the permit application. The content of the statement contains the following information.

1. Materials, systems, components and work required to have special inspection. Duties of the building official and the registered design professional responsible for each part of the work are to be stated.

2. Type and extent of each special inspection, and the name of individuals or firms performing the inspections.

3. Type and extent of each test.

4. Special inspection of required seismic-resistant systems and components.

5. Special inspection of required wind-resistant systems and components.

6. Provide name and contact information of the special inspection agency. OBOA-accredited special inspection agencies providing inspections within the scope of accreditation for the disciplines to be inspected can be considered qualified. The choice of special inspection agencies should include the following considerations:

   • Project size and complexity – experience with similar projects.
   • Inspection staffing – sufficient qualified inspectors.
   • Site location – proximity of inspection and testing facilities.
   • Off-site inspection – capabilities for inspection at remote locations.

7. Completion of this Statement of Special Inspections agreement and schedule as shown is a simple method of fulfilling the requirement for preparation of a special inspection program that can be easily reviewed by the building official.

8. Respond to field discrepancies. The design professional in responsible charge shall respond to special inspector reports of uncorrected noncomplying items (discrepancies) and shall approve remedial measures.

9. Review shop drawings and submit revisions to approved plans. The design professional in responsible charge shall acknowledge and approve shop drawings that may detail structural information. The design professional shall submit to the building official and the special inspector/inspection agency written approval of any verbally approved deviations from the approved plans, and shall submit revised plans for building official approval (see Sections 107.3.4 and 107.4 of the OSSC).

D. Contractor Responsibilities

Submit a written statement of responsibility to the building official and the owner prior to commencement of the work on the system or component. The contractor's statement of responsibility is to contain the following:

1. Acknowledgement of awareness of the special requirements contained in the Statement of Special Inspections;

2. Acknowledgement that control will be exercised to obtain compliance with the construction documents approved by the building official;

3. Procedures for exercising control within the contractor's organization, the method and frequency of reporting, and the distribution of the reports; and

4. Identification and qualifications of the person(s) exercising such control and their position(s) in the organization.

Job-site protocol for special inspection:

1. Notify the special inspector. Adequate notice shall be provided so that the special inspector has time to become familiar with the project.

2. Provide access to approved plans. The contractor is responsible for providing the special inspector with access to approved plans.

3. Retain special inspection records. When required by the building official, the contractor is responsible for retaining, at the job site, all special inspection records submitted by the inspector and providing these records for review by the building department's inspector upon request.

E. Building Department Responsibilities

1. Review submittal documents for compliance with special inspection requirements as outlined in the Statement of Special Inspections. The building official is charged with the legal authority to review the plans, specifications, special inspection program and other submittal documents for compliance with code requirements.

2. Approve fabricator(s) used for building components installed on-site.

3. Approve special inspection programs. The building official is responsible for approving the special inspection program submitted by the design professional in responsible charge (see Section 107.1 of the OSSC) and may require a preconstruction conference to review the program with all applicable members of the construction team.

4. Monitor special inspection activities. The building official should monitor the special inspection activities at the job site to ensure that qualified special inspectors are performing their duties when work requiring special inspection is in progress.

5. Issuance of stop work orders. The building official is recognized as having the authority to stop work at the job site.

6. Approval to proceed. There are certain points of completion where work shall not proceed until approval by the building official has been given.

7. Review inspection reports. The building official receives and reviews special inspection progress reports and final reports for compliance with the approved plans, specifications and workmanship provisions of the code.

8. Perform final inspection. The building official should not perform the final inspection and approval for a project until the final special inspection report has been reviewed and approved.

APPENDIX C
Reference Materials

Inspectors/Agencies are strongly encouraged to be familiar with the reference materials related to special inspection/materials testing described herein. For all materials listed refer to Chapter 35 of the Oregon Structural Specialty Code to determine the current adopted version of the reference standard.

a. **All Categories:**
- OBOA's Special Inspection Program (Latest Edition); (for all categories)
- Oregon Structural Specialty Code (OSSC), Chapter 17; (for all categories)
- ICC Model Program for Special Inspection

b. **Reinforced Concrete (RC):**
- ICC Concrete Manual
- OSSC Chapter19
- ACI 301 & 318
- ASTM Standards referenced in ACI 301 & ACI 318 contained within Publication SP-71.

c. **Prestressed Concrete (PC)** all materials for RC in addition to:
- Manual for Quality Control for Plants & Products (MNL-116)
- Field Procedures Manual for Unbonded Single Strand Tendons (PTI)
- Recommendations for Prestressed Rock and Soil Anchors
- Specifications for Unbonded Single Strand Tendons
- ASTM Standard A416/A416M & A421/A421M

d. **Structural Masonry (SM):**
- OSSC Chapter 21
- Inspectors Handbook by Masonry Institute of America (MIA)
- Building Code Requirements for Masonry Structures (ACI 530/ASCE 5/TMS 402/ACI 530.1/ASCE 6/TMS 602 Building Code for Masonry Structures/Specifications for Masonry Structures)
- ASTM Standards A615, A951, C476, C1019, C1314, C216, C270, C62, C90, and C140)

e. **Structural Steel and Bolting (S1):**
- OSSC Chapter 22
- AISC Manual of Steel Construction including AISC 303, 360, and the RCSC Specification for Structural Joints using high-strength bolts.
- AISC 341

f. **Structural Welding (S2 and S2–AWS)** all materials for S1:
- AWS A2.4, D1.1, D1.3 & D1.4 welding codes.

g. **Sprayed-Applied Fireproofing (FP):**
- ASTM E605 & ASTM E736
- Technical Manual 12A The Standard Practice for Testing and Inspection of Field Applied Sprayed Fire Resistive Material, Technical Manual 12B.

h. **Structural Wood (SW):**
- OSSC Chapter 23, American Wood Council National Design Specification for Wood Construction
- APA Introduction to Lateral Design,
- APA Engineered Wood Construction.

i. **Proprietary Anchor (PA):** Nationally Recognized Evaluation Report by ICC Evaluation Service. Verify anchors are installed in accordance with manufacturer's issued listing.

j. **Shotcrete (SC):** OSSC – 1913, ACI 506.2, & ASTM C1140

k. **Cold Formed Steel Framing (CF):** OSSC General Provision for Cold Formed Steel Framing

l. **Soils (EC):** OSSC Chapter 17, 18, 33, & Appendix J
- ASTM D 422; ASTM D 698; ASTM D 1556; ASTM D 1557; ASTM D 2847; ASTM D 2488; ASTM D 4318; ASTM D 4718; ASTM D 6938; ASTM D 75; ASTM D 4959
- Geotechncial Testing, Observation, and Documentation, Tim Daves, ASCE Press
- Soils, Earthwork, and Fondations : A Practical Approach

m. **Fire-Resistant Penetrations and Joints (FP&J):**
- ASTM E2393; ASTM E2174

APPENDIX D
Special Inspection Program References
(Refer to latest adopted editions of each)

ACI: American Concrete Institute, www.concrete.org
- **ACI 301**: Specification for Structural Concrete
- **ACI 318**: Building Code Requirements for Structural Concrete
- **ACI 530/ACI 530R**: Building Code Requirements for Masonry Structures

APA: American Plywood Association, www.apawood.org

ASNT: American Society for Nondestructive Testing, www.asnt.org

ASTM: American Society of Testing and Materials, www.astm.org
- **ASTM E329**: Standard Specification for Agencies Engaged in Construction Inspection and/or Testing
- **ASTM C1077**: Standard Practice for Labs Testing Concrete and Concrete Aggregates for use in Construction and Criteria for Laboratory Evaluation
- **ASTM C1093**: Practice for Accreditation of Testing Agencies for Masonry
- **ASTM D3740**: Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil & Rock as used in Engineering Design and Construction.
- **ASTM E543**: Standard Practice for Agencies Performing Nondestructive Testing.
- **ASTM E605**: Standard Test Method for Thickness and Density of Sprayed Fire Resistive Materials. (SFRM) to Structural Members
- **ASTM E736**: Standard Test Method for Cohesion/Adhesion of Spray-Applied Fire-Resistive Materials
- **ASTM E1513**: Standard Practice for Application of Spray-Applied Fire-Resistive Materials (SFRM)
- **ASTM A880**: Standard Practice for Criteria for Use in Evaluation of Testing Laboratories and Organizations for Examination and Inspection of Steel, Stainless Steel, and Related Alloys
- **ASTM E2393:** Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers
- **ASTM E2174:** Standard Practice for On-Site Inspection of Installed Firestops

AWC: American Wood Council, www.awc.org

AWS: American Welding Society, www.aws.org
- **AWS D1.1**: Structural Welding Code-Structural Steel
- **AWS D1.3**: Structural Welding Code-Sheet Steel (Light Gauge)
- **AWS D1.4**: Structural Welding Code-Reinforcing Steel (Rebar)
- **AWS QCI**: Standard for AWS Certification of Welding Inspectors

ICC: International Code Council, www.iccsafe.org
- **ICC:** Model Program for Special Inspection, Latest Edition.
- **ICC:** Understanding and Developing a Special Inspection Program, Latest Edition

International Standard ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories, www.iso.org

International Standard ISO/IEC 17020: General criteria for the operation of various types of bodies performing inspection, www.iso.org

AISC Manual of Steel Construction: http://www.aisc.org/

NDS: **National Design Specifications for Wood Construction**: www.awc.com

NICET: National Institute for Certification of Engineering Technologists- An examining body whose function is to evaluate the qualifications of those who voluntarily apply for a certificate in engineering technology field. www.nicet.org

Oregon Fire Code (OFC): http://codes.iccsafe.org/app/book/toc/2014/2014_Oregon/14_Fire/index.html

OSSC (State of Oregon Structural Specialty Code): Current version of the International Building Code as amended by the State of Oregon Building Codes Division, www.bcd.oregon.gov

Washington Association of Building Officials (WABO): Special Inspection Registration Program, Latest Edition