

Applicant: City of Seattle Department of Construction and Inspections	Page 1 of 17	Supersedes: 4-2015
	Publication: April 4, 2016	Effective: May 2, 2016
Subject: Additional General Duties and Responsibilities of Structural and Geotechnical Special Inspection Agencies	Code and Section Reference: Chapter 17 of Seattle Building Code, Environmentally Critical Areas Code Section 25.09.	
	Type of Rule: Code Interpretation	
	Ordinance Authority: SMC 3.06.040	
Index: Building/Grading - Technical	Approved (signature on file) Nathan Torgelson, Director SDCI	Date 5/2/2016

INTRODUCTION

The Seattle Building Code (SBC) establishes the framework and requirements of the Special Inspection program. This Rule contains additional details and requirements. TIP 342, General Duties and Responsibilities of Structural and Geotechnical Special Inspection Agencies, summarizes the requirements of the SBC and this Rule, along with a description of procedures.

ADDITIONAL QUALIFICATIONS TO BECOME A GEOTECHNICAL SPECIAL INSPECTION AGENCY

The special inspection agency must employ a special inspector qualified to perform the inspections selected by the SDCI plan reviewer. The geotechnical special inspector must be the Geotechnical Engineer of Record for the project, and they must be a Professional Engineer (Civil) licensed in the State of Washington with at least four years of professional

experience working under the direction of a licensed Professional Engineer (Civil) with demonstrated experience in geotechnical engineering. Geologists may perform special inspections if they work under the direction of a Professional Engineer (Civil) licensed in the state of Washington with geotechnical expertise to perform geotechnical special inspections.

The inspector in the field may be an Engineer-in-Training, geologist or other experienced inspection personnel working under the direct supervision of the Geotechnical Engineer of Record.

ADDITIONAL RESPONSIBILITIES OF THE OWNER OR OWNER'S AGENT

The owner or owner's agent must schedule a pre-construction meeting for projects requiring special inspections. The purpose of this meeting is to discuss the most important aspects of the construction that may pose particular risks, need special attention, or cross the lines of separate disciplines. The owner or the owner's agent must bring the original stamped SDCI-approved plans and all approved revisions to the pre-construction meeting. If SDCI-approved plans are not available, the pre-construction meeting will be cancelled.

RESPONSIBILITIES OF THE CONTRACTOR

The contractor is responsible for attending the pre-construction meeting, knowing which special inspections are required for the project, and performing the work according to SDCI-approved plans.

The contractor must coordinate with the owner or the owner's agent to notify the special inspection agency when inspections are needed and to make the area or items to be inspected available to the special inspector.

ADDITIONAL RESPONSIBILITIES OF THE SPECIAL INSPECTION AGENCY

General responsibilities

The special inspection agency is responsible for insuring that the special inspector complies with this Rule and the SBC. The special inspection agency is responsible to insure that the special inspector is familiar with the contents of the approved plans in their discipline.

A representative of the special inspection agency must attend the pre-construction meeting with the applicant, the lead design professional, the contractor, and SDCI representatives. Each special inspection agency must be prepared to highlight the most critical issues in their area of inspection during the pre-construction meeting.

If the special inspection agency receives a request for inspections, but has not received an authorization letter, the special inspection agency must verify that a permit for the work has been issued by SDCI or must contact SDCI regarding the status of the authorization letter.

If the list of items to be inspected shown in the authorization letter contains errors or requires deletions or additions:

- For structural special inspections, the building inspector can approve changes to the special inspection list during the pre-construction meeting.
- For geotechnical special inspections, the special inspection agency must contact the SDCI geotechnical reviewer for the project. Only the SDCI geotechnical reviewer can make changes to the list of geotechnical items to be inspected.

Inspection and reporting requirements

All special inspectors must observe the construction and provide special inspection, as required by the authorization letter, for compliance with the SDCI-approved plans.

In addition to verifying compliance with the approved plans, the special inspector must perform inspections in accordance with the minimum requirements shown in Tables 1 and 2. The geotechnical special inspector must also observe the construction for compliance with the recommendations in the geotechnical report. Larger and more complex projects require a site map or elevation view showing the progress of the geotechnical item being inspected (e.g. a progress plan that shows tiebacks installed, stressed, tested, and to be installed).

Geotechnical and structural special inspection agencies must submit written reports to SDCI no later than one week from the date of the inspection. Written reports on the progress of the construction with Seattle Department of Transportation (SDOT) and SDCI approvals must be submitted by the geotechnical special inspector to both SDOT and SDCI.

The geotechnical special inspector must immediately discuss significant deviations from the approved plans and significant geotechnical construction issues (e.g. encroachment on adjacent property without permission, approaching shoring movement limits) with the Geotechnical Section of SDCI at 206-684-8950. It is not sufficient for the special inspector to notify SDCI of significant geotechnical issues only via field report or via the SDCI building inspector or site inspector. The geotechnical reviewer will discuss the issues with the special inspector and provide additional requirements, if necessary.

Final letter for closing out special inspections

The geotechnical special inspection agency must prepare a final letter after all special inspections are complete. The final letter for structural special inspections must list the items inspected and describe the results of the inspections. The letter must be signed by an authorized representative of the special inspection agency.

The final letter for geotechnical special inspections must list the items inspected and provide a summary of the results of each of the inspection items. The level of detail required depends upon the complexity of the project. The letter must highlight any issues that were encountered during construction, along with their resolution. The letter must contain a statement from the special inspection agency that the completed development substantially complies with SDCI-approved plans, all permit requirements, and

recommendations in the Geotechnical Report, as applicable. The final letter must be signed and stamped by an authorized representative of the special inspection agency.

For projects with the geotechnical special inspection item "Permanent erosion control," the special inspector may prepare a final letter at the completion of all but the permanent erosion control task. Once all landscaping and hardscaping are in place and temporary erosion control measures have been removed, the special inspector can make a final field visit and submit a signed, stamped field report detailing the inspection for permanent erosion control.

DPD will not approve occupancy of the project until the SDCI Geotechnical and Structural Quality Control sections have approved the final letters.

CHANGING SPECIAL INSPECTION AGENCY

Structural special inspection

To change a structural special inspection agency that has been authorized by SDCI, the owner must provide a letter to SDCI requesting the change of special inspection agency and nominating the new agency.

Geotechnical special inspection

To change a geotechnical special inspection agency that has been authorized by SDCI, the owner must provide the following information to SDCI:

- (1) a letter from the project owner/owner's agent requesting the change of special inspection agency and nominating the new agency.
- (2) (a) a signed and stamped letter from the new geotechnical engineer accepting the role of geotechnical engineer of record and stating that the new geotechnical engineer agrees with the previous recommendations in the geotechnical report and the SDCI-approved plans or

(b) if the new geotechnical engineer has additions or exceptions to the original geotechnical recommendations, the engineer must provide justification, results of additional explorations, and results of additional analyses or testing. SDCI may require revised plans and plan review letter signed and stamped by the new engineer.

TABLE 1
MINIMUM REQUIREMENTS FOR STRUCTURAL SPECIAL INSPECTIONS

INSPECTION	WHAT IS INSPECTED
Reinforced Concrete	
Reinforcement	<ul style="list-style-type: none"> • Verify type, grade and visual conformity of reinforcing steel with approved plans and acceptable quality standards. • Ensure that reinforcing steel is free of oil, dirt and excessive rust and that steel is not damaged. • Verify that reinforcing steel is adequately tied, chaired and supported to prevent displacement during concrete placement. • Verify that required concrete cover is provided. • Verify reinforcing steel provides proper maximum and minimum clear distances between bars and minimum distance to outside of concrete. • 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 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.
Concrete Quality	<ul style="list-style-type: none"> • Verify that arriving concrete delivery vehicles have individual batch tickets indicating delivery of the approved mix as specified. • Verify that total water added to the mix does not exceed that allowed by trip ticket, and that the mix does not exceed the maximum allowable slump according to the approved mix design.
Concrete Testing	<ul style="list-style-type: none"> • Determine the required type, quantity and frequency of tests to be performed on the fresh concrete. • Perform sampling and testing as required by the more stringent of the SBC, specifications, or approved plans. • Accurately document test results, including approximate location sample was taken from (e.g. – SOG from line 5 to line 6 on grid H, column on line 1 grid A, etc.). • Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory.
Concrete Placement, Protection and Curing	<ul style="list-style-type: none"> • 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.

Post Tensioned Concrete	<p>The items listed below for Post Tensioned Concrete are in addition to the items listed above for Reinforced Concrete.</p> <p>A Post Tension preconstruction meeting is required to be held prior to concrete placement.</p>
Reinforcement	<ul style="list-style-type: none"> • Verify type, grade and visual conformity of reinforcing steel and tendons with approved plans and acceptable quality standards. • Verify that placement of reinforcing steel and tendons (or ducts) comply with location, spacing, profile and quantity requirements, as indicated by the installation drawings and approved plans. • Verify that the reinforcing steel and tendon system are fabricated in conformance with acceptable quality standards. • Verify that the tendons at the time of concrete placement are properly coated 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 required concrete cover is provided. • 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 any penetrations, making sure they are not within the 45 degree crush zone without approval from the design engineer. • Verify that connection of live ends is secure and will not allow concrete paste to flow into pocket. • Verify that dead ends are spaced correctly and at proper elevation, including orientation of anchor (horizontal or vertical?)
Concrete Quality	<ul style="list-style-type: none"> • Verify that arriving concrete delivery vehicles have individual batch tickets indicating delivery of the approved mix as specified. • Verify that total water added to the mix does not exceed that allowed by trip ticket, and that the mix does not exceed the maximum allowable slump according to the approved mix design.
Concrete Testing	<ul style="list-style-type: none"> • Determine the required type, quantity and frequency of tests to be performed on the fresh concrete. • Perform sampling and testing as required by the more stringent of the SBC, specifications, or approved plans. • Accurately document test results, including approximate location sample was taken from (e.g. – SOG from line 5 to line 6 on grid H, column on line 1 grid A, etc.). • Provide or arrange for proper specimen identification, site storage and protection, and transportation to the

	testing laboratory.
Prestressing and Grouting	<ul style="list-style-type: none"> • Verify that the required concrete strength has been reached prior to applying stressing forces. Verify equipment calibration records and condition. • 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 the tendon tails have been cut to the required length. • Verify that tendon tails are cut, capped with a grease cap or sealed with an approved corrosion inhibitor and grouted within 48 hours of receiving approval from engineer to cut tails. • Verify that ducts including inlets and outlets are of the required size, are mortar-tight and are located correctly. • Verify that proper grout materials, strength and grouting pressures are used as specified.
Concrete Placement, Protection and Curing	<ul style="list-style-type: none"> • 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, tendons embeds and forms. • Verify that concrete is being properly consolidated during placement, paying close attention to live or dead ends. • 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.
Shotcrete	A shotcrete preconstruction meeting is required to be held prior to any shotcrete operations.
Reinforcing Steel	<ul style="list-style-type: none"> • Verify type, grade and visual conformity of reinforcing steel with approved plans and appears to be of acceptable quality. • Ensure that reinforcing steel is free of oil, dirt and excessive rust and that steel is not damaged. • Verify that reinforcing steel is securely tied, chaired and supported to prevent vibrations and movement during shotcrete placement. • Verify that there is no loose rebar, embedded items, or formwork. • Verify that only approved reinforcing steel supports are being used. Verify no concrete dobies are being used to support any portion of shotcrete. • Verify that required concrete cover is provided. • Verify reinforcing steel provides proper maximum and minimum clear distances between bars and minimum distance to outside of concrete. • Verify that hooks, bends, ties, stirrups, and supplemental reinforcement are fabricated and placed as specified with tails or hooks properly orientated for shooting. • Verify that required non contact lap lengths, stagger and offsets are provided. If bars are to be tied together, verify shooter will only see one bar. <p>Verify required sacrificial steel locations are in place and contain the largest horizontal and vertical bar expected</p>

	to be encountered during shoot.
Shooters and Shotcrete Equipment	<ul style="list-style-type: none"> • Verify that proposed shooters have been approved according to shotcrete preconstruction meeting agenda. • Verify compressor is sufficient to provide air to both nozzle and blow pipe. • Verify blowpipe and nozzle hoses are in good working order, with no leaks or bubbles. • Verify shotcrete pump appears in good working order, as well as nozzle. • Verify that the shotcrete work area is not overly congested, well lit, with no standing water and limited personnel.
Shotcrete Mix	<ul style="list-style-type: none"> • Verify that approved shotcrete mix is provided. • Verify mix is within specified slump, and does not appear wet. • Verify that contactor has prepared necessary shotcrete test panel for compressive strength sampling. • Determine the required material strengths, type and frequency of tests to be performed. • Observe sampling, field testing and fabrication of test specimens. • Verify proper sample identification, site storage, protection and transportation to the testing laboratory.
Application of Shotcrete	<ul style="list-style-type: none"> • Verify that shooters are placing shotcrete according to acceptable shooting technique. • Verify that the shooters are not 'piling' on shotcrete and causing roll over or poor encasement of reinforcing steel. • Verify that the shotcrete is not sloughing or dropping off. Verify shotcrete is maintaining stability during shoot. • Verify that the nozzle air is turned up all the way, providing excellent compaction as evidenced by penetrations of aggregate into shotcrete surface. • Verify that blowpipe operator is removing rebound and loose shotcrete. • Verify that no rebound is being used for any structural portion of shoot. Rebound may be used to help finish. • Verify that the reinforcing steel is maintaining stability, and does not appear to be bowing. • Verify that shooter is being observant of difficult locations, and in case of double mats, moving closer into second mat in order to provide better compaction. • Provide necessary sample, as well as sample identification, site storage, protection and transportation to the testing laboratory.
Post shotcrete inspection	<ul style="list-style-type: none"> • Verify that the cores removed from the wall show signs of acceptable shotcrete placement (limited porosity, good consolidation, little to no voids, no deleterious material or marking)
Structural Masonry	The SBC defines two separate inspection types for masonry: Level B (periodic) or Level C (continuous). For Level B inspection, the special inspector is required to be present during any grouting operations. The special inspector shall perform duties related to Reinforcement and Connector Placement and Grout Placement sections below. For Level C inspections, the special inspector is required to be present during any masonry operations, and shall perform duties related to all sections listed below.

	A Masonry preconstruction meeting is required to be held prior to placement of any block.
Materials	<ul style="list-style-type: none"> • Verify that brick, block, grout mix, mortar mix, 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 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 meets the approved specifications. • Verify proper sample identification, site storage, protection and transportation to the testing laboratory.
Masonry Placement	<ul style="list-style-type: none"> • 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 control / expansion 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. •
Reinforcement and Connector Placement	<ul style="list-style-type: none"> • Verify that the reinforcing steel and connectors comply with required size, spacing, profile, condition and quantity requirements, as indicated by both the approved plans and installation drawings • Verify reinforcing steel is secured from displacement during grouting operations by reinforcing bar positioners or other method as approved during preconstruction meeting. • 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 evaluation reports. •
Grout Placement	<ul style="list-style-type: none"> • 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 the placement.
Structural Steel and Bolting	A Structural Steel preconstruction meeting is required to be held prior to fabrication of structural members or any type of bolting. Fabrication may start prior to the preconstruction meeting, subject to approval of the building official.

Materials Sampling, Testing and Verification	<ul style="list-style-type: none"> • 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 of 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.
High Strength Bolting	<ul style="list-style-type: none"> • 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. •
Steel Framing and Observation	<ul style="list-style-type: none"> • 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 hole size, and proper clearance for grouting. • Verify grout placement and sampling. • Verify that base plates are securely seated and fastened in accordance with applicable drawings and specifications.
Structural Steel Welding	A Structural Steel preconstruction meeting is required to be held prior to fabrication or welding of any type.
Materials Sampling, Testing, and Verification	<ul style="list-style-type: none"> • 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 Procedure 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.

	<ul style="list-style-type: none"> • Verify mill test reports, container identification markings or other documentation of welding materials. • Verify rod containers are undamaged or electrodes are otherwise dried when required. • 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 nondestructive examinations are performed as required by applicable standards and specifications.
Structural Reinforcing and Sheet Steel Welding	<ul style="list-style-type: none"> • Verify that the welding equipment and process has the capability to produce the specified welds. • Ensure 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 AWS 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 direction.
Welding Procedures Specifications	<ul style="list-style-type: none"> • 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 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.
Spray-applied Fireproofing	

Materials, Preparation, Application and Testing	<ul style="list-style-type: none">• Verify that the proposed materials are of the type specified, are properly stored and have been approved by the architect.• 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.• Verify materials are of type specified, properly stored and approved•
Lateral Framing (wood and cold formed steel)	A Lateral framing preconstruction meeting is required to be held prior to fabrication of or construction of any lateral load resisting assemblies.

Lateral Systems	<ul style="list-style-type: none"> • Verify lateral systems for conformance including shear walls, diaphragms, cords, sub-diaphragms, hold downs, connectors and drag struts. • Verify location and placement of plates, shear walls, diaphragms, squash blocks, hold downs, strapping, beams and columns. • Verify stud spacing, blocking, panel material and orientation. • Verify nail, screw or pin size, type, length, penetrations and spacing. • Verify anchor bolt size, type and spacing as well as strap size, locations, and connection type (nails, screws, etc.).
Materials	<ul style="list-style-type: none"> • Verify species and grade. Including dimensions, sheathing materials, and engineered lumber. • For cold formed steel, verify mill size and dimension, sheathing material and coating, as well as material labeling and that mill certifications have been approved. • Verify hold downs, straps, ties, rods, nuts, anchors, engineered systems (All thread rod type) • Verify prefabricated panels. Check certifications for shop approval as well as size, type and location. Verify any corner, end and 'T' connections. • Verify all screws, bolts, or any related fasteners are installed according to approved plans.
Welding Materials	<ul style="list-style-type: none"> • Verify mill test reports, container identification markings or other documentation of welding materials. • Verify rod containers are undamaged or electrodes are otherwise dried when required. • 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 nondestructive examinations are performed as required by applicable standards and specifications.
Special Cases	<p>Special cases are often proprietary or specially-made anchors and devices to be used in construction. The special inspection should follow the ICC evaluation reports; these are generally listed on the ICC Evaluation Service website in the appropriate ESR or ES report. Note: the ESR or ES number should also be verifiable on the bolt, anchor, or devices boxes that they are delivered in. http://www.icc-es.org/</p>

TABLE 2
MINIMUM REQUIREMENTS FOR GEOTECHNICAL SPECIAL INSPECTIONS

INSPECTION	WHAT IS INSPECTED	COMMENTS
OBSERVE AND MONITOR EXCAVATION	Monitor excavation so that slopes are not oversteepened and adjacent structures/rights-of-way are not harmed. Confirm that lateral support (e.g. backfill) is re-established.	Geotechnical engineer or SDCI may require continuous inspection, particularly for cuts done in short sections, loose soils or areas of high groundwater
VERIFY STRUCTURAL FILL & COMPACTION	Verify that structural fill type is appropriate. Observe lift thickness, number of passes, equipment type, soil moisture. Perform field density tests.	Structural fill includes all engineered fill on the site (e.g. behind retaining walls), not just fill placed for bearing support.
SOIL BEARING VERIFICATION	Confirm bearing capacity of soils at footing elevation.	
SUBSURFACE DRAINAGE	Verify installation of footing drains, wall drains, underslab drains.	Special inspectors observe perforated pipe for subsurface drainage. SDCI Site Inspectors observe solid pipe and connections to City infrastructure.
AUGERCAST PILE INSTALLATION	Depth and diameter of drilled hole; type of soils encountered and agreement with expected soil conditions described in geotechnical report; method of drilling; depth of cage insertion; grout head and withdrawal rate; volume of concrete placed.	Continuous inspection is required by the Seattle Building Code (SBC). Include a detailed installation summary for each pile. SDCI may request installation logs if needed.
DRILLED CIP PIER PILE INSTALLATION	Depth and diameter of drilled hole, type of soils encountered, hole stability / casing, clean bottom of hole, method of drilling, cage insertion depth	Continuous inspection is required by the SBC. Include a detailed installation summary for each pile. SDCI may request installation logs if needed.
PIPE PILE INSTALLATION	Pile length, pile size and schedule, pile driving equipment, blows per foot (refusal criteria), dynamic testing for pile capacity	Continuous inspection is required by the SBC. Include a detailed installation summary for each pile. SDCI may request installation logs if needed.
PRECAST/STRESSED PILE INSTALLATION	Pile length, pile size and schedule, pile driving equipment, blows per foot (refusal criteria), dynamic testing for pile capacity	Continuous inspection is required by the SBC. Include a detailed installation summary for each pile. SDCI may request installation logs if needed.

TIMBER PILE INSTALLATION	Pile length, pile size at tip and butt, pile driving equipment, blows per foot (refusal criteria), dynamic testing for pile capacity, batter, acceptability of pile (straightness), preservation treatment if any,	Continuous inspection is required by the SBC. Include a detailed installation summary for each pile. DPD may request installation logs if needed.
SHEET PILE INSTALLATION	Type, thickness, and length of sheet pile, depth of embedment, method of installation (pushed, vibrated)	Continuous inspection is required unless otherwise approved by the SDCI Geotechnical Engineering Group.
PIN PILE INSTALLATION	Monitor installation per DR 10-2009, location, size, hammer weight, refusal criteria	Continuous inspection is required by Director's Rule 10-2009 unless otherwise approved by SDCI.
PIN PILE INSTALLATION LOAD TEST	Load testing required for all pin piles greater than 2-inch-diameter. Testing per DR 10-2009.	Continuous inspection is required by Director's Rule 10-2009.
MICROPILE INSTALLATION	Depth and diameter of drilled hole; type of soils encountered and agreement with expected soil conditions described in geotechnical report; grout pressure, volume of concrete placed; size and length of reinforcing bar.	Continuous inspection is required by the Seattle Building Code (SBC). Include a detailed installation summary for each pile. SDCI may request installation logs if needed.
UNDERPINNING INSTALLATION/ MONITORING	Monitor underpinning installation and movement of underpinned structure.	Geotechnical engineer or SDCI may require continuous inspection during installation.
HELICAL ANCHOR INSTALLATION	Location and number of anchors, size of helices, torque resistance, and verification testing (if required by DPD).	Continuous inspection is required by the SBC unless otherwise approved by SDCI.
SOIL NAILING INSTALLATION & TESTING	Type of soils encountered, hole stability, casing, anchor length, quantity of grout, grout pressure, verification testing (200% design load), proof testing (130% design load)	Continuous inspection is required. Include a detailed installation summary for each nail. SDCI may request installation logs if needed.
SOLDIER PILE INSTALLATION	Depth and diameter of drilled hole, type of soils encountered, hole stability/casing, clean bottom of hole, method of drilling, groundwater level, type/length of steel section, volume of concrete placed	At a minimum, daily inspection is required. Geotechnical engineer or SDCI may require continuous inspection during installation. Include a detailed installation summary in the field report.
TIEBACK ANCHOR INSTALLATION & TESTING	Type of soils encountered, hole stability/casing, anchor length, angle of installation, quantity of grout, grout pressure, verification testing (200% design load), proof testing (130% design load)	Continuous inspection is required. Include a detailed installation summary for each tieback in field report. SDCI may request installation logs if needed.

SHORING INSTALLATION/ PERFORMANCE MONITORING	Monitor shoring installation, monitor shoring performance (e.g. visual survey, instrument survey, inclinometer)	Special inspector must provide evaluation of monitoring data and plots of deflection vs. time. For projects involving SDOT and SDCI send evaluation, plots, and raw data to SDOT. Send the evaluation and plots to SDCI. SDCI will request the raw data, if needed. Contact SDCI when approaching allowable deflection limits. Contact SDCI and SDOT to request approval for change of survey monitoring frequency.
GEOGRID WALL INSTALLATION	Subgrade preparation, geogrid length and type, fill placement, geogrid vertical spacing, geogrid orientation, drainage	
SEGMENTAL BLOCK WALL INSTALLATION	Subgrade preparation, bearing capacity, drainage, block placement, geogrid, if any	
ECOLOGY BLOCK WALL INSTALLATION	Subgrade preparation, bearing capacity, drainage, block placement (including batter and embedment).	Typically also includes special inspection item for monitoring excavation and fill placement
ROCKERY INSTALLATION	Stability of rockery, drainage, bearing soil, size and placement of rocks, geogrid, if any	
EROSION CONTROL – TEMPORARY	Installation and performance	
EROSION CONTROL – PERMANENT	Verify that temporary measures are not needed, landscape and hardscape installed; slope is stable.	Permanent erosion control typically done by geotechnical special inspector only for selected landslide-prone sites.
METHANE MITIGATION SYSTEM INSTALLATION	Installation of system including piping, pea gravel, trench dams, venting to outside, impervious overlying layer	

MONITOR SEASONAL GRADE CONDITION	Verify compliance with grading season restrictions.	Typically applied to landslide prone areas, deep excavations, and other sites with large volumes of grading. Restrictions apply between October 31 and April 1. Use the application form in DR 17-2011 to apply for a grading season extension. If special inspection letter states "See notes in lieu of formal grading season extension," this means that a grading season extension has been applied; however, the conditions can be met by following the additional TESC and inspection requirements in the plans in lieu of applying for a formal grading season extension.
MONITOR SLOPE STABILITY	Monitor slope movement, erosion, seepage, distressed vegetation, placement of construction fencing. Verify that work stays out of "non-disturbance" areas, and report construction activities that may be detrimental to slope stability	
VIBRATION MONITORING	Evaluate whether vibration is strong enough to damage nearby structures.	Evaluation may include pre-construction survey, visual monitoring, survey monitoring, instrumental monitoring. For instrumental monitoring, measure peak particle velocities caused by construction vibrations and compare to required limiting values.
MONITOR ADJACENT PROPERTY	Verify adjacent structures are not damaged by construction in accordance with monitoring plan	Visual, survey, or other instrumental monitoring may be required.
DEWATERING	Monitor installation and performance of dewatering system including drawdown, discharge rate and location, effect of dewatering on adjacent properties, if any	Continuous inspection required for dewatering installation. Occasional monitoring expected for dewatering monitoring.
OTHER GEOTECHNICAL	Verify compliance with conditions not otherwise covered.	Examples include preloading, ground improvement, geopiers, pin pile with plywood "shoring", specialized drainage and infiltration systems, stormwater drainage system as it relates to slope stability.