

Statement of Special Inspections

Project: *Additions and Renovations to New London High School*

Location: *490 Jefferson Avenue & Chester Street, New London, Connecticut*

Owner: *City of New London*

Architect of Record: *Antinozzi Associates*

Structural Engineer of Record: *e2 engineers*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

- Structural Mechanical/Electrical/Plumbing
 Architectural Other: _____

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities. **Special Inspections of Architectural Systems and Mechanical/Electrical/Plumbing systems is by others.**

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *Monthly* or per attached schedule.

Prepared by:

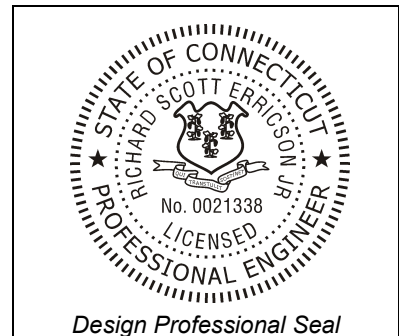
R. Scott Erricson, P.E.
(type or print name)



Signature

03-10-20

Date



Owner's Authorization:

Building Official's Acceptance:

Signature

Date

Signature

Date

Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- | | |
|---------------------------------------------------------------|-------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Soils and Foundations | <input checked="" type="checkbox"/> Spray Fire Resistant Material |
| <input checked="" type="checkbox"/> Cast-in-Place Concrete | <input type="checkbox"/> Wood Construction |
| <input type="checkbox"/> Precast Concrete | <input type="checkbox"/> Exterior Insulation and Finish System |
| <input checked="" type="checkbox"/> Masonry | <input type="checkbox"/> Mechanical & Electrical Systems |
| <input checked="" type="checkbox"/> Structural Steel | <input type="checkbox"/> Architectural Systems |
| <input checked="" type="checkbox"/> Cold-Formed Steel Framing | <input type="checkbox"/> Special Cases |

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. Special Inspection Coordinator	<i>e2 engineers</i>	488 Montauk Avenue New London, CT 06320 860-437-3259 scott.erricson@e2engineers.com geoff.sandberg@e2engineers.com andrew.podojil@e2engineers.com
2. Geotechnical Engineer	<i>Clarence Welti Associates, Inc.</i>	227 Williams Street East Glastonbury, CT 06033 860-633-4623 mcwelti@weltiassoc.com
3. Field Inspector	<i>To Be Hired by Owner</i>	
4. Testing Agency	<i>To Be Hired by Owner</i>	
5. Testing Agency		
6. Other		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

Quality Assurance Plan

Quality Assurance for Seismic Resistance

Seismic Design Category *B*
 Quality Assurance Plan Required (Y/N) *N*

Description of seismic force resisting system and designated seismic systems:

Ordinary Moment Frames, Flat Strap Bracing and Ordinary Reinforced Masonry Shearwalls

Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust) *145mph*
 Wind Exposure Category *C, B*
 Quality Assurance Plan Required (Y/N) *Y*

Description of wind force resisting system and designated wind resisting components:

Ordinary Moment Frames, Flat Strap Bracing and Ordinary Reinforced Masonry Shearwalls

Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility.

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
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International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Exterior Design Institute (EDI) Certification

EDI-EIFS	EIFS Third Party Inspector
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Other

Item	Agency # (Qualif.)	Scope	Inspection Frequency
1. Shallow Foundations	2 <i>(PE/GE)</i>	<i>Inspect prepared subgrade/undisturbed native soil at bottom of footings for consistency with presumptive bearing capacities and properties specified in geotechnical report. A minimum of 25% of prepared footing subgrade shall be inspected. Each elevator pit slab/footing subgrade shall be inspected. Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill</i>	C
2. Controlled Structural Fill	2,4 <i>(PE/GE)</i>	<i>Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material. Inspect placement, lift thickness and compaction of controlled fill. Test density of each lift of fill by nuclear methods (ASTM D2922) Verify extent and slope of fill placement.</i>	P
3. Deep Foundations	N/A		
4. Other: <i>Underpinning</i> <i>Flowable Fill</i>	<i>1,4 PE/SE</i> <i>1,4 PE/SE</i> <i>4 ACI-CCI ICC-RCSI</i>	<i>Verify approved underpinning sequence is being followed.</i> <i>Inspect conditions for conformance with Project Specifications prior to placement of concrete. Inspect placement of concrete. Inspect placement of concrete for each underpinning section, and flowable fill placement.</i> <i>Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.</i>	C

Inspection Frequency:

C: Continuous

P: Periodic Inspections. Inspection frequency shall be determined by the Geotechnical Engineer (GE.) During ongoing soil and foundation operations, daily (minimum) inspections shall be performed.

Notes:

1. The Testing Agency (Agent #4) shall perform tests under Item 2 and provide results to the Geotechnical Engineer (GE – Agent #2) for review in addition to the parties listed on page 1. The Geotechnical Engineer (GE) shall report any non-conformance issues to the Architect, SER, General Contractor (GC,) and the Special Inspections Coordinator.

Item	Agency # (Qualif.)	Scope	Inspection Frequency
1. Mix Design	3,4 ACI-CCI ICC-RCSI	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.	C
2. Material Certification	3,4 ACI-CCI ICC-RCSI	Verify on site materials (reinforcing, forms, accessories, embed items) are in accordance with plans and approved submittals.	C
3. Reinforcement Installation	3,4 ACI-CCI ICC-RCSI	Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters Inspect placement of all dowels.	P2
4. Formwork Geometry	3,4 ACI-CCI ICC-RCSI	Observe formwork geometry for column footings, foundation walls, slabs-on-grade, elevated slabs, retaining walls and elevator pits.	C
5. Welding of Reinforcing	3,4 AWS-CWI	Visually inspect all reinforcing steel welds. Verify weldability of reinforcing steel. Inspect preheating of steel when required.	C
6. Anchor Rods	3,4 ACI-CCI ICC-RCSI	Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors. Frequency shall be at all brace frames, all concrete piers, and 25% of remaining columns. Inspect concrete placement and consolidation around anchors.	C
7. Concrete Placement	3,4 ACI-CCI ICC-RCSI	Inspect placement of concrete in column footings, foundation walls, retaining walls, piers, slabs-on-grade, elevated slabs, and elevator pits. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.	C
8. Sampling and Testing of Concrete	4 ACI-CFTT ACI-STT	Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).	P3

9. Curing and Protection	3 <i>ACI-CCI ICC-RCSI</i>	<i>Inspect curing, cold weather protection and hot weather protection procedures. Verify method of curing and protection of all concrete is in conformance with contract documents. Frequency of observation shall be one inspection each beginning, mid-point, and end of curing period per application. Notify Special Inspection Coordinator immediately of any deficiencies or deviations from approved curing and protection methods.</i>	<i>P4</i>
10. Other: <i>Concrete Strength</i>	<i>1 PE/SE</i>	<i>Verify C.M. has notified Steel Erector in writing that supporting concrete has achieved 75% minimum design 28-day strength.</i>	
11. Other <i>Anchor Rods</i>	<i>1 PE/SE</i>	<i>Verify C.M. has notified Steel Erector in writing of any repairs, replacements, and/or modifications to the anchor rods per OSHA.</i>	
12. Other <i>Shop Drawings</i>	<i>4</i>	<i>Verify approved shop drawings are on site and in use.</i>	

Inspection Frequency:

C: Continuous

P: Periodic Inspections.

P1: If all requirements are met, only one inspection is required.

P2: Inspect before concrete placement.

P3: Per Section 033000 "Cast-in-Place Concrete" specification.

P4: Daily when required by weather conditions (See *ACI305R, ACI 306R, ACI 306.1.*)

Notes:

Special Inspections not required for the following concrete elements:

1. Non-structural concrete slabs supported directly on ground.
2. Concrete patios, driveways of sidewalks on grade.

Item	Agency # (Qualif.)	Scope	Inspection Frequency
1. Material Certification	1,4 PE/EIT	Review material certifications for concrete masonry components to be used in load-bearing, exterior, and interior walls and partitions, and firewall construction.	C
2. Mixing of Mortar and Grout	1,4 PE/SE 4 EIT ICC-SMSI	Review proposed mix designs for mortar and grout for familiarity and for conformance with contract documents. Observe proportioning, mixing and retempering of mortar and grout for concrete masonry to be used in masonry walls. Inspect at least once per wall type per story and not less than once per 500 sq. feet of wall.	C
3. Installation of Masonry	4 EIT ICC-SMSI	Inspect size, layout, bonding and placement of masonry units. Inspect at least once per wall type per story and not less than once per 500 sq. feet of wall.	C
4. Mortar Joints	4 EIT ICC-SMSI	Inspect construction of mortar joints including tooling and filling of head joints.	C
5. Reinforcement Installation	4 EIT ICC-SMSI AWS-CWI	Inspect placement, positioning and lapping of reinforcing steel. Inspect at least once per wall type per story and not less than once per 500 sq. feet of wall. Inspect welding of reinforcing steel.	C
6. Grouting Operations	4 EIT ICC-SMSI	Inspect placement and consolidation of grout. Inspect at least once per wall type per story and not less than once per 500 sq. feet of wall. Inspect masonry clean-outs for high-lift grouting.	C
7. Weather Protection	4 EIT ICC-SMSI	Inspect cold weather protection and hot weather protection procedures. Verify that wall cavities are protected against precipitation.	C
8. Evaluation of Masonry Strength	4 EIT ICC-SMSI	Sample and test grout per ASTM C1019. Test compressive strength of mortar and grout cube samples (ASTM C780). Test compressive strength of masonry prisms (ASTM C1314). Frequency shall be at least one inspection per story.	C

9. Anchors and Ties	ICC-SMSI	<i>Verify type, size, location, spacing and embedment of dowels, anchors (incl. adhesive anchors) and ties, including details of masonry anchorage to structural members, frames or other construction, for conformance with the contract documents. Perform at least one inspection per 500 sq. ft. of wall.</i>	C
10. Other: Mortar Strength Anchor Rods	(1) PE/SE (1) PE/SE	<i>Verify C.M. has notified Steel Erector in writing that supporting masonry mortar and grout has achieved 75% minimum of design 28-day strength. Verify C.M. has notified Steel Erector in writing of any repairs, replacements and/or modifications to the anchor rods per OSHA.</i>	

Inspection Frequency:

C: Continuous

P: Periodic Inspections.

Item	Agency # (Qualif.)	Scope	Inspection Frequency
1. Fabricator Certification/ Quality Control Procedures <input type="checkbox"/> Fabricator Exempt	1 PE/SE 4 AWS/AISC- SSI ICC-SWSI	Verify PRIME Fabricator and all sub-contracted fabricators hold AISC Certification prior to start of fabrication when required by Project Specification. Review shop fabrication and quality control procedures for all shops NOT AISC Certified.	P1
2. Material Certification	(1) PE/SE (4) AWS/AISC- SSI ICC-SWSI	Review certified mill test reports (1) and identification markings on wide-flange shapes, high-strength bolts, nuts and welding electrodes (4). Frequency shall be sufficient to satisfy testing agent and Special Inspection Coordinator.	P2
3. Open Web Steel Joists	(See Notes 2,3)	Inspect installation of open-web steel joists. Verify end connections and bridging.	P2
4. Bolting	4 AWS/AISC- SSI ICC-SWSI (See Notes 2,3)	Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections; 25% minimum of bolts in other connections. Verify bolt size and grade. Inspect installation and tightening of high strength bolts. Provide continuous inspection of bolts in slip-critical connections. Inspect per Section 9 of the RSCC "Specification for Structural Joints Using A325 or A490 Bolts."	C
5. Welding	3,4 AWS-CWI ASNT	Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds. Ultrasonic testing of all full-penetration welds. Provide continuous inspection of all complete and partial penetration groove welds, all multi-pass fillet welds and all single pass fillet welds > 5/16" (see Note 3 and 4 for additional requirements)	P3
6. Shear Connectors	3,4 AWS/AISC- SSI ICC-SWSI	Inspect size, number, positioning and welding of shear connectors. Inspect studs for full 360 degree flash. Ring test all shear connectors with a 3 lb hammer. Bend test all questionable studs to 15 degrees.	C

7. Structural Details	3 PE/SE	Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.	P2
8. Metal Deck	4 AWS-CWI	Inspect welding and side-lap fastening of metal roof and floor deck. Prior to installation, inspect one unit per bundle for depth, gage and profile conforming to project specifications. Visually inspect all installed metal roof and floor deck for conformance with project specification and SDI. Visually inspect welding and side-lap fastening of metal roof and floor deck. Report broken welds or excessive burn through.	P2
9. Other:			
Concrete Strength	(1) PE/SE	Verify C.M. has notified Steel Erector in writing that supporting concrete has achieved 75% minimum of design 28-day strength.	C
Masonry Strength	(1) PE/SE	Verify C.M. has notified Steel Erector in writing that supporting masonry mortar and grout has achieved 75% minimum of design 28-day strength.	C
Anchor Rods	(1) PE/SE	Verify C.M. has notified Steel Erector in writing of any repairs, replacements and/or modifications to the anchor rods per OSHA	C
Shop Drawings	(4)	Verify approved shop drawings are on site and in use.	C

Inspection Frequency:

C: Continuous

P: Periodic Inspections.

Add'l Requirements as follows:

P1: If all requirements are met, only one inspection is required.

P2: While steel erection operations are ongoing, daily inspections shall be performed, unless otherwise noted. This inspection frequency may be increased or decreased at the Special Inspections Coordinator's discretion.

P3: Refer to Section 051000 Structural Steel

Notes:

1. Special Inspections Coordinator shall continuously monitor structural steel tests and inspections to assure conformance with the Construction Documents; notify SER of any discrepancies immediately.
2. Inspector shall have a minimum of 5 years experience in the inspection of steel structures.
3. Review material identification and manufacturer certificates for conformance of weld filler material with AWS Standards and AISC Manual of Steel Construction, ASD, 14th Edition.
4. Base metal exceeding 1.5 inches in thick and adjacent to the welds after joint welding.
5. Special Inspections of Fabricator is not required if fabricator complies with "Fabricator's Certificate of Compliance."

Item	Agency # (Qualif.)	Scope	Inspection Frequency
1. Member Sizes	(4) AWS- AISC SSI	Verify flange width, flange return lip and web depth conforms to contract documents and approved shop drawings for load bearing studs, joists and special assemblies. Sample a minimum of one unit per bundle.	P
2. Material Thickness	(4) AWS- AISC SSI	Verify the material gage conforms to contract documents and approved shop drawings for load bearing studs, joists and special assemblies. Sample a minimum of one unit per bundle.	P2
3. Material Properties	(4) AWS- AISC SSI	Review material certifications to verify yield stress and shop coating of load-bearing studs, joists and trusses conforms to the requirements of the contract documents. Review shipping tickets and/or component markings to verify materials on-site conform to approved shop drawings and material certificates.	P1
4. Mechanical Connections	(4) AWS- AISC SSI	Visually inspect mechanical field connections for conformance with contract documents, approved shop drawings and approved manufacturer's written instructions.	C
5. Welding	N/A		N/A
6. Framing Details	(4) AWS- AISC SSI	Visually inspect all cold-formed steel construction for conformance with approved shop drawings and the design intent of the contract documents. Verify installation of flat strap bracing and connections.	P2
7. Trusses	N/A		N/A
8. Permanent Truss Bracing	N/A		N/A
9. Other: Shop Drawings	(4) AWS- AISC SSI	Verify approved shop drawings are on-site and in use. Verify design calculations are on file with SER for all load bearing members.	N/A

Inspection Frequency:

C: Continuous
P: Periodic Inspections.

Add'l Requirements as follows:

P1: If all requirements are met, only one inspection is required.
P2: While cold-form metal framing operations are ongoing, daily inspections shall be performed, unless otherwise noted. This inspection frequency may be increased or decreased at the Special Inspections Coordinator's discretion.

Item	Agency # (Qualif.)	Scope	Inspection Frequency
1. Material Specifications	(1, 3) PE/SE (4) ICC-SFSI	Review contract documents and approved manufacturer's written instructions for application of sprayed fire-resistant material. Provide Special Inspection Coordinator with written confirmation of familiarization when requested.	P
2. Laboratory Tested Fire Resistance Design	(4) ICC-SFSI	Verify the material gage conforms to contract documents and approved shop drawings for load bearing studs, joists and special assemblies. Sample a minimum of one unit per bundle.	P
3. Schedule of Thickness	(4) ICC-SFSI	Review design thickness requirements and/or approved thickness schedule for sprayed fire-resistant material indicated in contract documents. Provide Special Inspection Coordinator with written confirmation of familiarization when requested.	P
4. Surface Preparation	(4) ICC-SFSI	Inspect surface preparation of steel for conformance with UL and approved manufacturer's written instructions for surface preparation requirements prior to application of fireproofing. Frequency shall be 25% minimum of structural members.	P
5. Application	(4) ICC-SFSI	At time of application of sprayed fire-resistant material, measure ambient temperature of substrate, verify area is ventilated, and confirm both are in accordance with approved manufacturer's written instructions.	P
6. Curing & Ambient Condition	(4) ICC-SFSI	Verify ambient air temperature and ventilation is suitable for curing of fireproofing, in accordance with approved manufacturer's written instructions.	P
7. Thickness	(4) ICC-SFSI	Test thickness of fireproofing in accordance with IBC §1704.11.3 and ASTM E 605. Perform thickness measurements for not less than 25% of rated beams and columns.	P
8. Density	(4) ICC-SFSI	Test the density of fireproofing material in accordance with IBC §1704.11.4 and ASTM E 605.	P
9. Bond Strength	(4) ICC-SFSI	Test the cohesive/adhesive bond strength of fireproofing material in accordance with IBC §1704.11.5 and ASTM E 736.	P
10. Fire-resistant Joint Systems	(4) ICC-SFSI	Inspect and test fire-resistant joint systems for conformance to ASTM E2393.	P
11. Penetration Firestops	(4) ICC-SFSI	Inspect and test penetration firestops for conformance to ASTM E2174.	P

Inspection Frequency:

C: Continuous

P: Periodic Inspections.