

SECTION 014590  
STATEMENT OF SPECIAL INSPECTIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. A copy of the Statement of Special Inspections is bound into this Project Manual.

END OF SECTION

**Statement of Structural Tests and Special Inspections**  
For compliance with Chapter 17 of the International Building Code 2015  
with Massachusetts State Building Code, 9<sup>th</sup> Edition Amendments

Project: MSBA Crocker Elementary School

Location: 200 Bigelow Road, Fitchburg, MA 01420

Owner: City of Fitchburg Public Schools: Crocker Elementary

Owner's Address: 376 South Street, Fitchburg, MA 01420

Architect of Record: SAAM Architecture

Structural Engineer of Record: LeMessurier Consultants Inc.

This Statement of Structural Tests and Special Inspections is submitted as a condition for permit issuance in accordance with Chapter 17 of the International Building Code 2015 with Massachusetts State Building Code, 9<sup>th</sup> Edition Amendments.

The following firms, agencies, or individuals (hereinafter referred to collectively as agents) except for the Geotechnical Engineer, will perform the tests and inspections under the direction of the SER. (The Geotechnical Engineer is responsible for directing the testing and inspection of controlled structural fill and in-situ bearing stratum for footings.)

<u>Abbreviation</u>	<u>Agent</u>
SER	Structural Engineer of Record listed above
AR	Architect of Record listed above
OIAF	Owner's Inspection Agency - Field
OIAP	Owner's Inspection Agency - Plant
GE	Geotechnical Engineer
FQP	Fabricator's Quality Control Program
CQP	Contractor's Quality Control Program
NR	Not Required
NA	Not Applicable

The abbreviations will be used on the attached pages to identify which agent is performing the particular tests or inspections. Where more than one agent is listed, one or more of the listed agents will perform the tests or inspections at the discretion of the SER.

Inspections and tests defined by these documents relate to work of permanent construction only. Temporary work or construction procedures such as shoring, scaffolding, trench supports, safety rails and nets, etc., are not included.

The following structural systems, if checked, are included in the Statement of Structural Tests and Special Inspections for this project. The specific tests and inspections required for each system checked are listed in the schedules on the pages noted.

X		Page			Page
X	Steel Construction	3		Driven Deep Foundations	
X	Cast-in-Place Concrete Construction	5		Cast-in-place Deep Foundations	
	Precast Concrete Construction			Curtain Walls (Wall Panels & Veneers)	
	Masonry Construction			Light Gage Metal Framing	
	Wood Construction		X	Sprayed Fire-Resistant Materials	8
X	Soils	7	X	Mastic & Intumescent Fire-Resistant Coatings	9
			X	Penetration Firestops & Fire-Resistant Joint System	10

The following items of construction, if checked, are specified in the plans or specifications on a performance basis. Their structural design will be reviewed by the SER and their construction is included in the testing and inspection requirements on the attached sheets:

	Curtain Walls	X	Structural Steel Connections
	Precast Concrete Components		Pre-Engineered Metal Buildings
	Post-tensioning Steel		

The following items are excluded from this Statement of Structural Tests and Special Inspections, since they are designed by other structural engineers not under the control of the SER, and the SER was not retained to provide performance specifications for their design. Said other structural engineers must provide Statements of Structural Tests and Special Inspections, as required, for their respective designs.

X	Curtain Walls		
X	Light Gage Metal Framing		
	Support of Excavation		

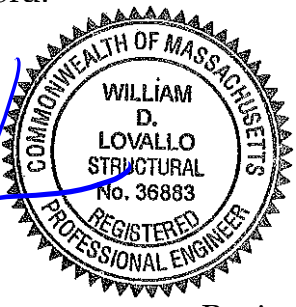
Prepared by the Structural Engineer of Record:

Name: William D. Lovallo, P.E.

Signature: 

Firm: LeMessurier Consultants, Inc.

Date: October 20, 2022



Registration Seal

## Schedule of Tests and Special Inspections

<b>Steel Construction IBC 1705.2 (with Exceptions)</b>				
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>	<b>Ref.</b>
1. Fabricator Certification/ Quality Control Procedures	SER OIAP	Review each Fabricator's quality control procedures, qualifications, and certifications.		IBC 1705.2
2. Fabricator Inspection	FQP OIAP SER	Inspect in-plant fabrication. Review FQP methods.	Periodic	IBC 1705.2
3. Material Certification	OIAP FQP SER	Review for conformance with the Construction Documents, ASTM, AISC, and AWS Standards. Verify identification markings, certified test reports, and certificates of compliance as applicable.	Periodic	AISC 360 A3, M5  AWS A5
4. Bolting - Shop	OIAP FQP	Test and inspect bolted connections. Verify bolt size and grade. Test sample HS bolts.	Periodic	IBC 2204.2
----- Bolting - Field	OIAF CQP	Test and inspect bolted connections. Verify bolt size and grade. Test sample HS bolts.	Periodic	AISC 360 A3 N5.6
----- Bolting - Shop & Field	OIAP FQP OIAF CQP	Pretensioned and slip-critical joints using turn-of-the-nut without match marking or calibrated wrench methods of installation.	Continuous	AISC 360 A3 N5.6
5. Welding - Shop	OIAP FQP	Check welder qualifications. Inspect fillet welds and test full and partial penetration welds.	Continuous	IBC 1705.2 2204.1
----- Welding - Field	OIAF CQP	Check welder qualifications. Inspect fillet welds and test full and partial penetration welds	Continuous	AWS D1.1, AISC 360 A3, N5.4
6. Shear Connectors	OIAF CQP	Inspect for size, quantity, and placement. Hammer-test. Visually inspect weld.	Continuous	AISC 360 A3, N6
7. Structural framing, details and assemblies	OIAP FQP OIAF	Inspect for size, grade of steel, camber, installation, location, and connection details.	Periodic	IBC 1705.2 AISC 360 N5.1-3
8. Open Web Steel Joists	OIAF CQP	Inspect for size, placement, bridging, bearing and connection to structure. Visually inspect all welds of a minimum of 5% of the joists, randomly selected.	Periodic	

## Schedule of Tests and Special Inspections

<b>Steel Construction IBC 1705.2 (with Exceptions)</b>				
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>	<b>Ref.</b>
9. Metal Decking	OIAF CQP	Verify gage, width, and type. Inspect placement, laps, welds, side lap attachment and screws or other mechanical fasteners. Check welder qualifications.	Periodic	IBC 1705.2.2 AWS D1.3
10. Corrosion Protection	OIAF FQP OIAF CQP	Check galvanizing certificates. Inspect galvanized surfaces. Inspect surface preparation and paint thickness. Inspect paint for damage.	Periodic	
11. Anchor Bolts	OIAF CQP	Inspect size, type, geometry, projection, washers, nuts, nut engagement, and tightness.	Periodic	IBC 2204.3
12. Wind Requirements	OIAF CQP	Inspect roof diaphragm connections and welds. Inspect wall cladding system and wall connections to roof and floor diaphragms and framing. Inspect braced frame connection and details, including connections to the foundations.	Continuous	IBC 1705.11.3
	OIAF CQP	Inspect roof and floor diaphragm systems, including collectors, drag struts, and boundary elements.	Continuous	
13. Seismic Requirement	OIAF	Steel elements in the seismic force resisting system of structures in Seismic Design Category B, C, D, E or F. See 1705.12 and 1705.12.1.1 for exceptions.	Periodic	IBC 1705.12.1 AISC 341
		Additional steel elements in the seismic force resisting system of structures in Seismic Design Category B, C, D, E or F. See 1705.12 and 1705.12.1.2 for exceptions.		

## Schedule of Tests and Special Inspections

<b>Cast-in-Place Concrete Construction IBC 1705.3 (with Exceptions 1-4)</b>				
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>	<b>Ref.</b>
1. Mix Designs	SER	Review mix designs.		IBC Chapter 19 ACI 318 Section 26.4
2. Materials Certification	SER	Review materials, admixtures, curing methods.		IBC Chapter 19
3. Batching Plant	OIAF	Review Plant quality control procedures and batching and mixing methods.		IBC Chapter 19
4. Reinforcement Installation	SER OIAF CQP	Inspect reinforcing for grade size, quantity, location, condition, cover, supports. Inspect mechanical splices and grouted dowels.	Periodic	IBC Chap. 1908.4 ACI 318 Ch 20, 25.2, 25.3, 26.5.1-3
5. Embedded Items	SER OIAF CQP	Inspect bolts, anchors, and other embedded items to be installed in concrete prior to and during concrete placement.	Continuous	ACI 318 17.8.2
	OIAF CQP	Inspect mechanical bolts, anchors, and other embedded items <b>after</b> concrete has cured.	Periodic	ACI 318 17.8.2
	OIAF CQP	Inspect adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	Continuous	ACI 318 17.8.2, 17.8.2.4
6. Formwork Geometry	OIAF CQP	Inspect formwork for shape, locations, dimensions, and tightness.	Periodic	ACI 318 26.10.1(b)
7. Mix Designations	OIAF	Review and verify use of required design mixes, time of batching, water added in field.	Continuous	IBC 1904.2.2, 1913.2, 1913.3 ACI 318 Ch. 4, 5.2- 5.4
8. Concrete	OIAF	Observe concrete placement, consolidation, finishing. Verify cold-weather and hot-weather procedures. Perform slump, density and air-content tests at point of discharge. Record the temperature of the concrete. Prepare strength test cylinders.	Continuous	IBC 1908.6-8  ACI 318 26.4.5

## Schedule of Tests and Special Inspections

<b>Cast-in-Place Concrete Construction IBC 1705.3 (with Exceptions 1-4)</b>				
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>	<b>Ref.</b>
9. Evaluation of Concrete Strength	OIAF	Perform strength verification testing of concrete cylinders as specified and directed.	Continuous	IBC Chap 1908.10 ASTM C172, C31 ACI 318 26.4.5, 26.12
10. Curing and Protection	OIAF CQP	Observe methods of moisture retention and form removal. Inspect for maintenance of specified curing temperature and techniques.	Periodic	IBC 1908.9 ACI 318 26.4.7-9

## Schedule of Tests and Special Inspections

<b>Soils IBC 1704.7</b>			
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>
1. Bearing strata	GE	Inspect strata for conformance with the Contract Documents and/or geotechnical report.	Periodic
2. Bearing surfaces	GE	Inspect bearing surfaces for conformance with the required soil bearing capacity. Inspect water control, and surface protection methods.	Periodic
3. Fill Material	OIAF GE	Test material for conformance with the Contract Documents and/or geotechnical report. Perform laboratory compaction tests in accordance with the specifications to determine optimum water content and maximum dry density.	Periodic
4. Preparation	OIAF GE	Prior to placement, observe subgrade and verify that the site has been prepared in accordance with the Contract Documents and/or geotechnical report.	Periodic
5. Installation of controlled structural fill	OIAF GE	Verify conformance with Contract Documents and/or geotechnical report for use of proper materials, densities, and lift thicknesses during placement and compaction.	Continuous
6. Density of fill	OIAF GE	Perform field density tests of the in-place fill in accordance with the Contract Documents and/or geotechnical report.	Continuous



## Schedule of Tests and Special Inspections

<b>Sprayed Fire-Resistant Materials IBC 1704.12</b>				
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>	<b>Ref.</b>
1. Quality Control Procedures	AR	Review Quality Control Procedures.	Periodic	
2. National Certification	AR	Review for conformance with the Contract Documents.	Periodic	
3. Materials	CQP	Review material certifications for conformance with the Contract Documents.	Periodic	
4. Surface Preparation	CQP OIAF	Verify surface is prepared in accordance with the approved Fire Resistance design.	Continuous	IBC 1705.14.2
5. Application	CQP OIAF	Verify minimum ambient temperature before and after application in accordance with approved Fire Resistance design.	Continuous	IBC 1705.14.3
6. Thickness	CQP OIAF	Verify minimum thickness in accordance with the approved Fire Resistance design.	Continuous	IBC 1705.14.4 ASTM E605
7. Density	CQP OIAF	Verify density in accordance with the approved Fire Resistance design.	Continuous	IBC 1705.14.5 ASTM E605
8. Bond Strength	CQP OIAF	Verify bond strength in accordance with the approved Fire Resistance design.	Continuous	IBC 1705.14.6 ASTM E736

Schedule of Tests and Special Inspections

<b>Mastic and Intumescent Fire-Resistant Coatings IBC 1704.13</b>				
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>	<b>Ref.</b>
1. Quality control Procedures	AR	Review Quality Control Procedures	Periodic	
2. National Certification	AR	Review for conformance to the Contract Documents.	Periodic	
3. Physical and Visual Tests	OIAP FQP OIAF CQP	Review for conformance to the Contract Documents. Verify preparation, application, and thickness in accordance with the approved Fire Resistance design.	Continuous	AWCI 12-B

## Schedule of Tests and Special Inspections

<b>Penetration Firestops and Fire-Resistant Joint Systems IBC 1705.17</b>				
<b>Item</b>	<b>Agent</b>	<b>Scope</b>	<b>Frequency</b>	<b>Ref.</b>
1. Quality Control Procedures	AR	Review Quality Control Procedures	Periodic	
2. National Certification	AR	Review for conformance to the Contract Documents.	Periodic	
3. Physical and Visual Tests	OIAP FQP	Witness installation of 10% of each type of firestop system/ 5% total LF of each type of fire resistive joint system, or post installation inspection with destructive testing of 2% of each type of firestop system/ 1 sample of each type of the fire resistive joint system per 500 LF.	Continuous	IBC 1705.17.1; 1705.17.2  ASTM E2174 ASTM E2393

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