

ATTACHMENT A

Work Order ____

This Work Order is subject to the terms and conditions of the Master Commissioning Services Agreement (as may be amended from time to time, (the “Agreement”) dated as of ____ between the Massachusetts School Building Authority and _____. Capitalized terms used and not otherwise defined in this Work Order shall have the meanings ascribed to such terms in the Agreement. In the event of any conflict between this Work Order and the Agreement, the Agreement shall govern.

Pursuant to the terms and conditions of the Agreement and this Work Order, the MSBA and Contractor agree as follows:

1. Location: Contractor shall provide the Commissioning Services for the following school construction project:

MSBA Cx I.D: _____

School District: _____

School Name: _____

School Address: _____

Construction Project Description: _____

2. Scope of Services and Deliverables: Contractor shall provide the commissioning services and deliverables set forth below and as more fully described in Attachment A-2, Standard Scope of Commissioning Services, for the School Construction Project identified in Section 1 of this Work Order (“Services”).

- a. Contractor shall conduct Full Building Commissioning on the following major building systems:

- i. Building Envelope
- ii. Roofing Systems
- iii. HVAC Systems
- iv. Plumbing Systems
- v. Electrical Power Systems
- vi. Voice, Data and Video Systems
- vii. Life Safety Systems
- viii. Building Automation and Control Systems

- b. Systems shall be commissioned at the following sampling rates:

Systems/Equipment to be Commissioned	Minimum Sample %	Comments
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<i>Building Envelope</i>		
Exterior walls	100	
Exterior windows	25	
Exterior doors	25	
Louvers and vents	25	
Grilles and sunscreens	25	

Infrared scan of envelope	100	
Roofing		
Roof systems, including parapet	100	
Roof openings, including skylights, pipe chases, ducts, etc.	100	
Infrared scan of roof	100	
HVAC Systems		
Boilers	100	
Chillers	100	
Domestic hot water heating coils	100	
Piping	25	
Heat exchangers	100	
Pumps and drives	50	
Air handler systems	100	
Rooftop units	100	
Heating and ventilating units	100	
Induction units	25	
Displacement terminal units	25	
Unit ventilators	25	
Cabinet unit heaters	25	
Fan coil units	25	
Unit heaters	25	
Radiant panels	25	
Finned tube radiation	25	
Convectors	25	
Chilled beams	25	
Exhaust fans	25	
Combustion air units	100	
Split system AC	100	
Make-up air units	100	
Fume hoods	100	
Heat recovery systems	100	
Thermal solar systems	100	
Testing, adjusting and balancing spot check	10	
Automated temperature controls and energy management systems	100	
Plumbing Systems		
Natural gas systems	25	
Compressed air systems	25	
Backflow preventers	100	
Pressure booster systems	100	
Water heaters	100	
Hot water storage	100	
Recirculation pumps	100	
Water closets and sinks	25	
Laboratory waste and acid neutralization systems	100	
Safety shower/eyewash stations	100	
Mixing valves	100	

Irrigation Systems	100	
Grey water systems	100	
Rain water reclamation systems	100	
Electrical Power Systems		
Electrical service and switchgear	100	
Transformers	100	
Motor control centers	100	
Electrical distribution systems	25	
Emergency and standby power systems including automatic transfer switching systems	100	
Lighting and lighting control systems	25	
Low voltage systems	25	
Grounding and bonding systems	25	
Photovoltaic systems	100	
Wind power systems	100	
Interfaces to automated temperature/building automation control systems	100	
Voice, Data, Video Systems		
Cabling	10	
Switches	10	
Servers	10	
Routers	10	
Interfaces	10	
Terminals	10	
Master clock system	100	
Public address systems	100	
Life Safety Systems		
Security systems	100	
Fire alarm systems	100	
Fire suppression systems	100	
Fire pump systems	100	
Egress lighting	100	
Egress pressurization systems	100	
Building Automation and Controls		
Interface of these systems with HVAC systems, fire alarm and security systems.	100	
Other Systems/Equipment Not Noted Above		

- c. Standard Scope of Commissioning Services, Exceptions: Contractor shall provide all of the services set forth in Section D of Attachment A-2, Standard Scope of Commissioning Services, except the following provisions of said Section D shall not be included as part

of the Services to be delivered pursuant to this Work Order (see also strikethrough version of Attachment A-2):

i. _____

3. Term of Work Order: This Work Order will become effective as of _____. Unless otherwise expressly agreed by the MSBA in writing, Contractor shall complete the Services commensurate with the overall Project schedule.

4. Payments /Services and Deliverable Schedule/Invoices:

a. Invoices shall be submitted monthly for payment and shall be based on Contractor's good faith estimate of percentage of services actually complete at the time of the billing up to the following maximum amounts for each phase of the Project, plus any completed additional services and reimbursable expenses previously approved by the MSBA. Payments shall be made in accordance with the provisions outlined in the Agreement and with the following payment schedule.

<u>Project Phase</u>	<u>Fee</u>	<u>Estimated No. Meetings</u>
Design Development and Construction Documents Phases	\$0.00	
Bidding Phase	\$0.00	
Construction Phase	\$0.00	
Acceptance Phase	\$0.00	
Project Closeout	\$0.00	
Post Commissioning	\$0.00	
TOTAL	\$0.00	

b. Travel expenses, including meal expenses, incurred by Contractor as may be required to fulfill the tasks required by this Work Order or Attachment A-2, Standard Scope of Commissioning Services, shall be included in the fees set forth in Section 4(a) above and shall not be reimbursable. All costs associated with providing copies of the deliverables required by this Work Order or Attachment A-2, Standard Scope of Commissioning Services, shall be included in the fees set forth in Section 4(a) above and shall not be reimbursable.

c. In the event that the MSBA requests additional or reimbursable Services from the Contractor under this Work Order, Contractor shall be paid for any such additional and reimbursable Services and Deliverables based on the hourly rate(s) set forth below, plus reasonable out-of-pocket expenses related to such additional or reimbursable services at cost, with no mark-up to the MSBA. Invoicing for additional and reimbursable services shall be based on the following rate schedule:

i) Services performed by principals of the Contractor or of firms engaged as by Contractor as consultants shall be billed at a rate of \$175.00 per hour.

- ii) Services performed by senior engineers, senior architects, project managers, registered professional engineers and architects of the Contractor or of firms engaged by Contractor as consultants shall be billed at a rate of \$150.00 per hour.
 - iii) Services performed by commissioning agents, designers (non-registered design professionals), drafters, technicians, and construction specialists of the Contractor or of firms engaged by Contractor as consultants shall be billed at a rate of \$125.00 per hour.
 - iv) Services performed by technical support and administrative personnel of the Contractor or of firms engaged by Contractor as consultants shall be billed at a rate of \$85.00 per hour.
 - v) Travel shall be a rate of \$0.55 per mile. Normal travel expenses incurred by Contractor or firms engaged by Contractor as consultants as may be required to fulfill the tasks required by this Work Order or Attachment A-2, Standard Scope of Commissioning Services, shall not be reimbursable.)
 - vi) Printing at cost. (Copies of deliverables as required by this Work Order or Attachment A-2, Standard Scope of Commissioning Services, shall not be reimbursable.)
- d. The MSBA shall only pay for Services and Deliverables rendered that have been properly documented and invoiced and are to the satisfaction of the MSBA. The fee amount in Section 4(a) shall be the sole and complete compensation for Services performed by Contractor pursuant to this Work Order, including contingencies and direct and indirect expenses, except as specifically provided for in Section 4(c). The fee amount stated in Section 4(a) is a maximum amount, and the total fee amount due pursuant to this Work Order may be an amount less than that amount.
- e. Contractor shall invoice the MSBA monthly. Invoices must be submitted in a format and with such detail as required by the MSBA. Payments hereunder will be made by the MSBA within forty-five (45) days following receipt of reasonably detailed invoices from Contractor, according to the banking information submitted by Contractor to the MSBA on the attached form (*Attachment A-1*), and subject to the fee limitations set forth in Section 4(a) of this Work Order. Contractor's monthly invoices shall be in a format consistent with the Services and Deliverables set forth in Section 2 of this Work Order and in Attachment A-2, and the Services and Deliverables Schedule set forth in Section 4 of this Work Order. All invoices submitted for payment shall provide reasonable documentation to provide evidence of costs incurred. For services provided on an hourly basis, such documentation shall include for each individual, the name, title, hours worked per task, and description or work performed.

5. Project Personnel:

For Contractor:

For MSBA: Mary Pichetti, Director of Capital Planning
 Joseph Buckley, P.E., Chief Engineer
 _____, MSBA Project Manager

6. Contractor hereby represents and warrants that, as of the date of this Work Order, all of the representations, warranties and certifications of Contractor set forth in the Agreement are true and correct and Contractor is in compliance with all of Contractor's obligations under the Agreement and each other Work Order between the MSBA and Contractor.

Massachusetts School Building Authority

By: _____

By: _____

Name: John K. McCarthy

Name: _____

Title: Executive Director

Title: _____

Date: _____

Date: _____