

PROJECT MANUAL

Windows, Doors & Siding Replacement

Halifax Elementary School

464 Plymouth Street
Halifax, MA 02338

MSBA Accelerated Repair Program Project # 201601180005

Construction Documents December 13, 2017

Awarding Authority:

Town of Halifax
499 Plymouth Street
Halifax, MA 02338

Owner's Project Manager:

The Vertex Companies, Inc.
400 Libbey Parkway
Weymouth, MA 02189

Architect:

Habeeb & Associates Architects
150 Longwater Drive
Norwell, MA 02061
H&A JN 1614.03



Indicates Section was modified by Addendum # 1



Indicates Section was modified by Addendum # 2

NOTE: This Specification has been annotated to assist the reader in identifying specification sections that have been altered by addenda. The reader is cautioned that the addenda contains additional general information and responses to RFI's that have not been similarly annotated. Refer to the specification and complete addenda for contract requirements.

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SECTION 00 1116**INVITATION TO BID****THIS PROJECT IS BEING ELECTRONICALLY BID
HARD COPY BIDS WILL NOT BE ACCEPTED**

Please review the instructions in the bid documents on how to register as an electronic bidder.

The bids are to be prepared and submitted at www.biddocsonline.com.

Tutorials and instructions on how to complete the electronic bid documents are available online
(click on the "Tutorial" tab at the bottom footer).

The Town of Halifax, the Awarding Authority, invites sealed bids for the following project:

Windows, Doors & Siding Replacement
Halifax Elementary School
464 Plymouth Street, Halifax, MA 02338
MSBA Accelerated Repair Program, Project No 201601180005
H&A JN 1614.03

in accordance with the documents prepared by Habeeb & Associates Architects dated December 13, 2017.

Nature and scope of work: replacement of all existing windows, exterior doors and siding. The project has an estimated construction cost of \$2.6 million.

FILED SUB-BIDS: Filed sub-bidders must be DCAMM certified for the sub-trade category of **Painting** (*Specification Section 09 0009*) and bidders must include a current DCAMM Sub-Bidder Certificate of Eligibility and a signed DCAMM Sub-Bidder's Update Statement.

Filed Sub-bids will be received until **Friday, December 29, 2017 at 4pm** and publicly opened, forthwith online.

GENERAL BIDS: General Bidders must be certified by the Division of Capital Asset Management and Maintenance (DCAMM) as a prime contractor in the category of **Doors and Windows** and must submit a current DCAMM Certificate of Eligibility and signed DCAMM Prime Update Statement (Form CQ 3).

General Bids will be received until **Monday, January 8, 2018 at 4:00pm** and publicly opened, forthwith online. Late bids will be rejected.

All Bids should be submitted electronically online at www.biddocsonline.com and received no later than the date and time specified above.

BID SECURITY: General bids and Filed Sub-bids shall be accompanied by a bid deposit in the form of a bid bond, certified check, treasurer's check, or cashier's check issued by a responsible bank or trust company payable to the Town of Halifax in the amount of 5% of each General and Filed Sub-Bid amount.

DRAWINGS AND SPECIFICATIONS: Construction Bid Documents will be available for pickup at www.biddocsonline.com (may viewed electronically and a hard copy requested) or at Nashoba Blue, Inc. at 433 Main Street, Hudson, MA 01749 (978-568-1167); after **9:00 AM on Wednesday, December 13, 2017**. There is a plan deposit of \$50.00 per set (maximum of 2 sets) payable to BidDocs ONLINE Inc.

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Deposits may be electronically paid or must be a certified or cashier's check. This deposit will be refunded for up to two sets for general bidder and for one set for sub-bidders upon return of the sets in good condition within thirty days of receipt of general bids. Otherwise the deposit shall be the property of the Awarding Authority.

Additional sets may be purchased for \$50.00 per set.

Bidders requesting Contract Documents to be mailed to them shall include a separate check for \$40.00 per set for UPS Ground (or \$65.00 for UPS Overnight), payable to BidDocs ONLINE Inc. to cover mail handling costs.

The Contract Documents may be seen, but not removed at: Nashoba Blue Inc., 433 Main Street, Hudson, MA 01749, 978-568-1167.

General and Filed-Sub Bidders must agree to follow the *Municipalities General Guidelines set forth by the Commonwealth of Massachusetts, Executive Office for Administration and Finance, Supplier Diversity Office (SDO), dated January 20, 2012* under cover of the Project Manual: C – Conditions of the Contract, Section 00 8000 - Other Forms.

PRE-BID MEETING: An orientation, site inspection and pre-bid meeting will be held at the Halifax Elementary School, 464 Plymouth Street, Halifax, MA 02338 on **Tuesday, December 19, 2017 at 11:00 AM**. General bidders and sub-bidders are invited and encouraged to attend this meeting.

The Contractor shall direct all questions via e-mail concerning the drawings and project manuals to the Designer:

Scott Bancroft, AIA, Habeeb & Associates Architects, sbancroft@habeebarch.com

The Owner's Project Manager and the Owner shall be copied on all such questions:

Stephen Theran, The Vertex Companies, stheran@vertexeng.com

Charlie Seelig, Town of Halifax, cseelig@town.halifax.ma.us

Bidding procedures shall be in accordance with M.G.L. c. 149, §§44A-44J, as most recently amended, and all other applicable laws.

Bids are subject to M.G.L. c.149 §44A-J & to minimum wage rates as required by M.G.L. c.149 §§26 to 27H inclusive. Copies are bound in this Project Manual.

All bids shall remain in effect for sixty (60) days, Saturdays, Sundays and legal holidays not included, after the opening of General Bids.

The **Town of Halifax** reserves the right to reject any or all general bids if it is in the public interest to do so.

The **Town of Halifax** does not discriminate on the basis of sex, race, age, physical disability, religion or national origin.

The **Town of Halifax** reserves the right to evaluate responsiveness and responsibility of all contractors, including pre-qualified contractors, throughout the procurement and contracting process.

BONDS: The successful general bidder will be required to furnish a Performance Bond and Payment Bond each in the amount of one hundred percent (100%) of the contract sum. Bonds shall be obtained from a surety licensed to do business in the Commonwealth of Massachusetts.

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All General and Sub-Bidders are advised that all contractors and their employees working on this project, on premises, shall be required to submit to the Town of Halifax Inquiry About Criminal Record (CORI) system check. The CORI form can be found in Section 00 8000 of this Project Manual.

If applicable, bids shall be in accordance with M.G.L. Chapter 30B, Chapter 149 as amended, and Chapter 30, Sections 39A, 39B and 39F-R. All Employees to be employed on the project must have successfully completed a course in construction safety and health approved by OSHA and of at least 10 hours duration, pursuant to M.G.L. Chapter 30, Section 39S(a)(2).

END OF SECTION

SECTION 00 2113**INSTRUCTIONS TO BIDDERS****THIS PROJECT IS BEING ELECTRONICALLY BID
HARD COPY BIDS WILL NOT BE ACCEPTED**

Please review the instructions in the bid documents on how to register as an electronic bidder.

The bids are to be prepared and submitted at www.biddocsonline.com.

Tutorials and instructions on how to complete the electronic bid documents are available online
(click on the "Tutorial" tab at the bottom footer).

Article 1 - Bidder's Representation

- 1.1 Each General Bidder or Sub-bidder (hereinafter called the "**Bidder**") by making a bid or sub-bid (hereinafter called "**bid**") represents that:
1. The Bidder has read and understands the Contract Documents and the bid is made in accordance therewith.
 2. The Bidder has visited the site and is familiar with the local conditions under which the Work has to be performed.
- 1.2 The Work consists of the Halifax Elementary School Windows, Doors and Siding Replacement Project, 464 Plymouth Street, Halifax, MA 02338, as more specifically described in the attached Contract Documents.
- The Contractor shall provide all labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, and all other things necessary to do all Work required for the completion of each item of the Work and as herein specified.
- The Work to be done and paid for under any item shall not be limited to the exact extent mentioned or described but shall include all incidental work necessary or customarily done for the completion of that item.
- 1.3 Each bidder must familiarize himself fully with the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.
- 1.4 All information given in the Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of bidders and is not guaranteed.

It is agreed and understood that the Awarding Authority does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated in the Contract Documents.

It is further agreed and understood that no bidder or Contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in

any manner as a basis of or ground for any claim or demand against the Awarding Authority or the Architect, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

- 1.5** Prevailing Wage Rates as determined by the Commissioner of Department of Labor and Industries under the provision of the Massachusetts General Laws, Chapter 149, Section 26 to 27G, as amended, apply to this project. It is the responsibility of the Contractor and every subcontractor, before bid opening, to request if necessary, any additional information on Prevailing Wage Rates for those tradespeople who may be employed for the proposed work under this Contract. State Schedules of Prevailing Wage Rates are included in the Bidding and Contract Requirements.
- 1.6** Failure to so examine the Contract Documents and site will not relieve any Bidder from any obligation under the bid as submitted.

Article 2 - General Bidder's And Filed Sub-Bidder's Certification

2.1 General bids shall be submitted with the following:

1. A Certificate of Eligibility on the appropriate form prescribed and issued by the Division of Capital Asset Management and Maintenance (DCAMM), showing that the Bidder is eligible to bid on projects of this size in the specified category of work (create a pdf file of the Certificate and browse & attach at www.biddocsonline.com); and
2. A Contractor Update Statement, DCAMM Form CQ3 (create a pdf file of the Update Statement and browse & attach at www.biddocsonline.com or complete the Update Statement online at www.biddocsonline.com).
3. The Contractor Update Statement (CQ3) is not a public record as defined in DCAMM regulation 810 CMR 8.06 and will not be open to public inspection.

2.2 Filed sub-bids shall be submitted with the following:

1. A Sub-Bidder Certificate of Eligibility on the appropriate form prescribed and issued by DCAMM showing that the sub-bidder is eligible to bid on public projects in the specified category of work (create a pdf file of the Certificate and browse & attach at www.biddocsonline.com); and
2. A Sub-Bidder Update Statement on a form prescribed by DCAMM (create a pdf file of the Update Statement and browse & attach at www.biddocsonline.com or complete the Update Statement online at www.biddocsonline.com).
3. The Sub-Bidder Update Statement is not a public record as defined in DCAMM regulation 810 CMR 8.06 and will not be open to public inspection.

2.3 It is the Bidder's responsibility to obtain the necessary forms from DCAMM and make application in sufficient time for evaluation of the application and issuance of a Certificate of Eligibility prior to bid.

2.4 Be advised that a new Massachusetts law has been enacted that requires all employees who work on Massachusetts public works construction sites must have no less than 10 hours of OSHA- approved safety and health training. See Chapter 306 of the Acts of 2004, which will become effective July 1, 2006.

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1. This requirement will apply to any general bid or sub bid submitted on or after July 1, 2006 and to any contract awarded on or after July 1, 2006.
 2. This law directs the Massachusetts Attorney General to restrain the award of construction contracts to any contractor who is in violation to this requirement and to restrain the performance of these contracts by non-complying contractors.
 3. The Contractor, and all subcontractors on this project will be required to provide certification of compliance with this requirement in accordance with the provisions of Section 01100 of these Contract Documents. Non-compliance with this new Massachusetts Law will disqualify you from bidding on public contracts.
- 2.5** Each bidder is required to provide certifications on the document regarding Public Contract Debarment (under MGL, Chapter 29, Section 29F), a Certificate of Non-Collusion (MGL, Chapter 40, Section 4B1/2, or Chapter 30, as applicable), and the Attestation Statement Payment of Taxes (MGL, Chapter 62C, Section 49A) which must be signed and submitted with an original signature or the bid will be rejected. Each bidder is also required to provide a Conflict of Interest Certification and a Unit Price Form, These forms can be found in Section 00 4500 – Other Bidding Forms.

Finally, each bid must include a signed Vendor/Contractor Indemnification and Vendor/Contractor Certification required by the funding agent Massachusetts State Building Authority. The forms can be found in Sections 00 4134A and 00 4134B.

Article 3 - Requests for Interpretation

- 3.1 Bidders shall promptly notify the Designer of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents, the site, and local conditions.
- 3.2 Bidders requiring clarification or interpretation of the Contract Documents shall make a written request to the Designer.
 1. The Designer will answer such requests from Filed Sub-Bidders if received no later than **4pm on December 26, 2017**.
 2. The Designer will answer such requests from General Bidders if received no later than **4pm on January 3, 2018**.
 3. Requests for interpretation may be submitted via email only. No phone calls will be taken. Every request for such interpretation should be submitted in writing and addressed to Scott Bancroft, Stephen Theran, and Charlie Seelig. Send each request to Scott Bancroft at Habeeb & Associates Architects, (email) sbancroft@habeebarch.com, Stephen Theran, The Vertex Companies, (email) stheran@vertexeng.com and to Charlie Seelig, Town Administrator, Town of Halifax, (email) cseelig@town.halifax.ma.us. Email requests shall include a subject heading that clearly identifies this project and includes the phrase "Request for Clarification" or "Request for Interpretation."
- 3.3 Interpretation, correction, or change in the Contract Documents will be made by written Addendum which will become part of the Contract Documents. Neither the Town of Halifax nor the Designer will be held accountable for any oral interpretations, corrections, or changes.
- 3.4 Copies of addenda will be made available for inspection at the locations listed in the Advertisement where Contract Documents are on file or online at www.biddocsonline.com. **Hard copies of the addenda will not be forwarded to the plan holders. The bidder is solely responsible for reviewing all addenda posted on the project website.**

Article 4 - Preparation and Submission of Bids**4.1 Forms and Bid Preparation**

Bids shall be submitted electronically on the "**Form for General Bid**" or the "**Form for Sub-Bid**" at www.biddocsonline.com, as appropriate and available at no cost. The forms enclosed in the Project Manual shall not be extracted or used.

1. All bidders must complete and submit the electronic bidder registration form (**Electronic Bidder Signature Authorization Form** – hard copy) to BidDocs ONLINE Inc. The form must be received by BidDocs ONLINE Inc. at least three business days prior to the bidding opening for processing. The Town of Halifax, the Designer or BidDocs ONLINE Inc. will not be held accountable if the bidder fails to submit the electronic bidder registration form in a timely manner. Instructions to submit the form are in the Contract Documents and are available at www.biddocsonline.com (click on the "Tutorial" tab at the bottom footer).
2. All entries on the bid form shall be made online. Any documents that are attached to the bid must be in a pdf format.
3. Sums shall be expressed in both words and figures in the space indicated on the bid form. Where there is a discrepancy between the bid sum expressed in words and the bid sum expressed in figures, the words shall control. Note: **The electronic bid forms match the "word" amount to the numeric "figure" amount entered.**
4. If the requirement of Performance and Payment Bonds for filed sub-contractors is left blank by the General Bidder on the Form for General Bid, the Town of Halifax shall interpret this as a "yes". No increase in contract price will be allowed for providing these bonds. Note: **The system requires that the general bidder explicitly acknowledge yes or no.**
5. Costs for subcontractor's bond premiums shall be paid for by the General Contractor in accordance with M.G.L. c.149 §44F.

4.2 Bid Deposits shall be:

1. at least five percent (5%) of the greatest possible bid amount, considering all alternates;
2. made payable to the **Town of Halifax**;
3. conditioned upon faithful performance by the principal of the agreements contained in the bid, and
4. in the form of:
 - a. cash,
 - b. certified check, treasurer's or cashier's check issued by a responsible bank or trust company, or
 - c. bid bond issued by a surety company licensed to do business in the Commonwealth of Massachusetts.

Note: Both the "bid bond" or "check" bid deposits are to be scanned and uploaded to the system as a pdf file. **IMPORTANT NOTICE:** If the bidder elects to make a bid deposit in the form of "cash" or "check" the bidder must have the cash or check physically delivered to the Town of Halifax prior to the date and time of the bid opening.

5. retained until the execution and delivery of the Owner/Contractor Agreement if they represent the bid deposit of one of the three (3) lowest responsible and eligible General Bidders or one of the three (3) lowest Sub-bidders in a filed sub-bid trade, or a sub-bidder listed by one of the three (3) lowest General Bidders.

4.3 Electronic Submission of Filed Sub-Bids

Sub-bids, including the bid deposit, DCAMM Sub-Bidder Certificate of Eligibility, DCAMM Sub-Bidder Update Statement and required miscellaneous forms noted in the bid documents shall be submitted electronically online at www.biddocsonline.com. No hard copy bids will be accepted.

You will receive an email confirming submission of your bid. Click on the email link to review and print the submitted bid documents. Keep the email as a **receipt** that your bid was submitted.

Note: You may modify your bid at any time prior to the bid date and time advertised. You will receive a new email each time you re-submit your bid.

1. Date and time for receipt of bids is set forth in the Advertisement.
2. Timely submission of a bid online shall be the full responsibility of the Bidder. **Note:** The project countdown clock on the website is the official clock that will determine when the bids are due.

4.4 Electronic Submission of General Bids

General Bids, including the bid deposit, DCAMM Certificate of Eligibility, Prime /General Contractor, Update Statement (CQ3) and required miscellaneous forms noted in the bid documents shall be submitted electronically online at www.biddocsonline.com. No hard copy bids will be accepted.

You will receive an email confirming submission of your bid. Click on the email link to review and print the submitted bid documents. Keep the email as a **receipt** that your bid was submitted.

Note: You may modify your bid at any time prior to the bid date and time advertised. You will receive a new email each time you re-submit your bid.

1. Date and time for receipt of bids is set forth in the Advertisement.
2. Timely submission of a bid online shall be the full responsibility of the Bidder.
Note: The project countdown clock on the website is the official clock that will determine when the bids are due.

4.5 Sub-Trade Solicitations

1. If the General Bidders are instructed to carry an amount for a given sub-trade listed under Item 2, General Bidders shall list the sub-trade, and amount provided by the Town of Halifax. The line under **bonds required** on the General Bid Form should be marked "no" in order for subparagraph 4.4.2.a. to be applicable.
2. Overhead and Profit for supervision of the sub-trade in question shall be included by all General Bidders in Item 1.
3. Additional overhead and profit is not allowed on the incremental difference as stated in M.G.L. c.149 §44F (4)(a)(2) nor on the costs for the additional bond premiums.

4.6 Addenda

1. All modifications to the bid documents will be issued via an addendum. All registered plan holders will be electronically notified when addenda are issued. Hard copies of the addenda will not be forwarded to the plan holders. The bidder is solely responsible for reviewing all addenda posted on the project website. The bidder must acknowledge all addenda have been reviewed by selecting "yes" or "no" as part of the e-bidding process. If the bidder selects "no", the bidder will automatically be directed to the Addenda icon on the project page.

Article 5 - Alternates

NOT USED

Article 6 - Withdrawal Of Bids**6.1 Before Opening of Bids**

1. Any bid may be withdrawn (retracted) prior to the time designated for receipt of bids upon clicking the tab to "Retract Bid". The bidder and Town of Halifax will receive an email confirming that the bidder retracted the bid.
2. Withdrawn bids may be modified and resubmitted up to the time designated for the receipt of bids.

6.2 After Opening of Bids

Bidders may withdraw a bid, without penalty, any time up to the time of Award as defined in paragraph 6.1, and upon demonstrating, to the satisfaction of the Town of Halifax, that a bona fide clerical error was made during the preparation of the bid. Failure to conclusively demonstrate a bona fide clerical error may result in forfeiture of the bid deposit.

- 6.3** In the event of a general bid withdrawal after opening of bids, the Town of Halifax shall consider the bid from next lowest eligible and responsible bidder.

6.4 Sub-bid Withdrawal/Substitution

1. **Selection:** Should a filed sub-bidder listed on the Form for General Bid of the selected General Contractor (per Article 7 of these instructions) withdraw its bid, be unable to provide performance and payment bonds as required by the selected General Contractor, or otherwise refuse to sign a subcontract with the selected General Contractor, the Awarding Authority and the selected General Contractor shall consider the other sub-bids to which the Awarding Authority and the selected General Contractor make no objection and substitute a new sub-bidder for such trade.
2. **Lack of Acceptable Sub-Bid for Sub-Trade:** Subject to G.L.c.149. §§ 44D-44F, if no sub-bid is filed for a sub-trade designated in Item 2 of the General Bid Form the Awarding Authority shall state, in an addendum to be issued with the list of sub-bidders, the allowed amount to be included for such sub-trade by a general bidder under Item 2 of the General Bid Form and new sub-bids for such a sub-trade shall be requested forthwith by written invitation to three or more qualified sub-bidders and shall be publicly opened and read by the Awarding Authority at a time and place to be specified in such invitation. The Contractor shall cause the work covered by such sub-trade to be done by the lowest responsible and eligible sub-bidder against whose standing and ability the Contractor makes no objection or, if there is no such sub-bidder, by such Sub-contractor against whose standing and ability the Contractor makes no objection and for such sum as the Contractor and the Awarding Authority may agree upon; and the general contract price shall be adjusted by the difference between the sub-contract sum and the allowed amount stated in the addendum. The General Bidder shall include under Item 1 of the general bid form all expenses and profits on account of such adjustments.
3. **Process:** If the selected General Contractor:
 - a. **required bonds (on the Form for General Bid) for the sub-bidder who withdrew** then the selected General Contractor's contract amount shall be adjusted to account for:
 - 1) the difference between the amount of the sub-bid listed on the Form for General Bid and the amount of the replacement sub-bid, and

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- 2) the incremental difference in the cost of the General Contractor bonds premiums, but
 - 3) there will be no compensation for additional subcontractor bond premiums
- b. did not require bonds (on the Form for General Bid) for the sub-bidder who withdrew** and now the selected General Contractor wants bonds from the replacement sub-bidder, then the selected General Contractor's contract amount shall be adjusted:
- 1) to account for the difference between the amount of the sub-bid listed on the Form for General Bid and the amount of the replacement sub-bid,
 - 2) the amount for the new sub-bidder's performance and payment bonds, and
 - 3) the incremental difference in the cost of the General Contractor bond premiums.
- 3.** There shall be no adjustment to the selected General Contractor's contract amount except as set forth in 6.4.3.a and 6.4.3.b. Additional overhead and profit is not allowed on the incremental difference in the sub-bids or on the costs for the additional bond premiums.

Article 7 - Contract Award

- 7.1** **Award** means both the determination and selection of the lowest, responsible and eligible bidder, by the Town of Halifax.
- 7.2** The Town of Halifax will award the contract to the lowest responsible and eligible bidder within thirty (30) days, Saturdays, Sundays, and legal holidays excluded after the opening of bids in accordance with M.G.L. c.149 §44A.
- 7.3** The Contract will be awarded to the lowest responsible and eligible Bidder, except in the event of substitution as provided under M.G.L. c.149 §§44E and 44F, in which cases the procedure as required by said sections shall govern the award of the Contract.
- 7.4** The award of this Contract is subject to the approval of the Town of Halifax. Contracts without approval shall not be considered valid.
- 7.5** The Town of Halifax reserves the right to waive any informalities in or to reject any or all Bids if it be in the public interest to do so.
- 7.6** The Awarding Authority also reserves the right to reject any sub-bid if it determines that such sub-bid does not represent the bid of a person competent to perform the work as specified, or if less than three sub-bids are received for a sub-trade, or if bid prices are not reasonable for acceptance without further competition.
- 7.7** As used herein, the term "lowest responsible and eligible bidder" shall mean the General Bidder whose bid is the lowest of those Bidders demonstrably possessing the skill, ability, and integrity necessary for the faithful performance of the work, and who meets the requirements for Bidders set forth in M.G.L. c.149 §44A-J and is not debarred from bidding under M.G.L. c.149 §44C; and who shall certify that they are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.
- 7.8** No award will be made to any bidder who cannot satisfy the Awarding Authority that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the work successfully within the time named. The Awarding Authority's decision or judgment on these matters will be final, conclusive, and binding.

The Awarding Authority may make such investigations as it deems necessary, and the bidder shall furnish to the Awarding Authority, under oath if so required, all such information and data for this purpose as the Awarding Authority may request.

- 7.9** Subject to, and except as otherwise may be provided by G.L.c.149. §§ 44B and 44E, the successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within fourteen (14) days (Saturdays, Sundays and legal holidays excluded) after he/she has received notice of the acceptance of his/her bid, shall forfeit to the Town of Halifax, as liquidated damages for such failure or refusal, a portion of security deposited with his/her bid, but the amount forfeited shall not exceed the difference between his/her bid price and the bid price of the next lowest responsible and eligible bidder.

Article 8 - Forms Required For Contract Approval

- 8.1** Upon Award, the General Bidder shall complete the following forms to ensure prompt contract validation. These forms will be provided to the selected General Bidder by the Town of Halifax. Submit (5) originals of each.

The bidder agrees to execute the standard contract as prepared by the Town of Halifax, a copy of which is included in the Bid Documents and is also on file with the Purchasing Agent and can be inspected during regular business hours. The successful bidder will receive five (5) copies of a contract and a bond, if applicable, at the earliest possible date. Said contract (all copies) should be signed, the bond, if applicable, properly executed, and returned to the Purchasing Agent. These documents will then be signed by the proper Town officials and one copy will be returned to the bidder.

- 8.2** **Owner/Contractor Agreement and Form of Corporate Vote.**

- 8.3** **Form of Contractor's /Sub-Contractor's Equal Employment Certification in accordance with the General Conditions.**

The Town of Halifax, MA is an affirmative action/equal opportunity owner/purchaser. The bidder's attention is directed to the minimum workforce percentage requirements for Minority Business Enterprise and Women's Business Enterprise participation stated in the *Municipalities General Guidelines set forth by the Commonwealth of Massachusetts, Executive Office for Administration and Finance, Supplier Diversity Office (SDO), dated January 20, 2012* under the cover of the Project Manual. Comply with all applicable State Laws, Town Bylaws, and rules and regulations regarding affirmative action/equal employment opportunity requirements. Failure of a bidder to comply with any such law, bylaw, rule or regulation shall constitute grounds for the Town to reject a bid or to otherwise reject or terminate the award of the contract pursuant to these contract documents.

The successful bidder shall be legally bound by the policies of the Town of Halifax with regard to:

1. Contract Compliance procedures dealing with Affirmative Action in employment and hiring regarding construction contracts and
2. Minority Enterprise Program that deals with procedures for the utilization of Minority Contractors and Professional Service Firms.

- 8.4 Form of Performance Bond and Form of Payment Bond** must be submitted by the General Contractor on the Town of Halifax's form, in accordance with the General Conditions. The dates on the bonds must coincide with the contract date, and a current Power-of-Attorney must be attached to each bond.

All bonds submitted to the Town of Halifax must be issued by an Insurance Company licensed to issue bonds in the Commonwealth of Massachusetts and approved by the U.S. Department of the Treasury. All bonds must be satisfactory in form to the Town Solicitor. The bonds shall remain in force for one year after final acceptance of the work by the Owner, unless the Owner, in writing, releases the Contractor from the obligation sooner.

- 8.5 Performance and Payment Bonds** must also be submitted for all filed subcontractors, if required by the General Bidder on its Form for General Bid, in the total amount of the subcontract payable to the General Contractor.

- 8.6 Insurance Certificates** for the General Contractor all **filed subcontractors** are required and must be submitted in accordance with the General Conditions. General Contractors must indicate on special perils insurance or installation floater if stored materials are covered.

The Contractor shall carry and continuously maintain until completion of the Contract, insurance as specified in the General Conditions of the Contract for Construction and in such form as shall protect him performing work covered by this Contract, or the Town of Halifax, MA and its employees, agents and officials, from all claims an liability for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this Contract. The Contractor covenants and agrees to hold the Town and its employees, agents and officials harmless from loss or damage due to claims for personal injury and/or property damage arising from, or in connection with operations under this Contract.

- 8.7 Form of Subcontract for all filed subcontractors** - executed and submitted on the statutory subcontract form.
- 8.8 Statement of Management on Internal Accounting Controls and a Statement prepared by a CPA** expressing an opinion to the state of Management Controls, as required by M.G.L. c.30 §39R. This applies to the General Contractor only.

Article 9 - Contract Validation

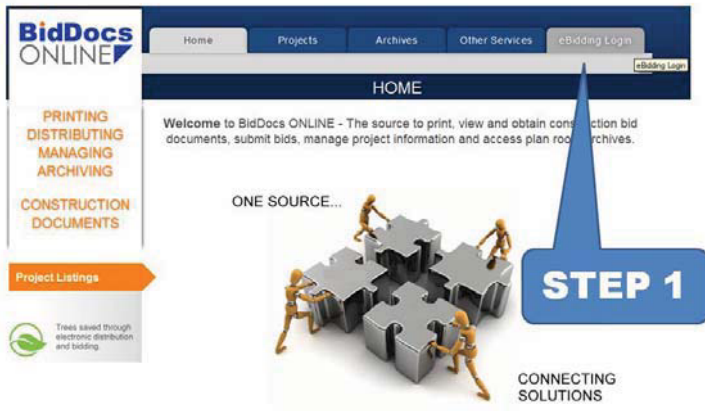
- 9.1** The Owner-Contractor Agreement shall not be valid until signed by Town of Halifax.
- 9.2** The Notice to Proceed for construction shall not be issued until the Owner/Contractor Agreement has been validated by the Town of Halifax.
- 9.3** Incomplete or unacceptable submissions of forms required by paragraphs 8.2 - 8.7 will delay the validation of the Owner/Contractor Agreement by the Town of Halifax.
- 9.4** The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances or Bylaws, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full. Attention is directed to Section 00 8000: Excerpts from Applicable State Law and to other applicable sections of this specification.
- 9.5** The bidder must agree to commence work within ten (10) calendar days of the date of the Notice to Proceed or, in the absence of such a notice, of the date of execution of a contract with the Town and to fully complete the project within the time limit stated in Specification Section 01 1000 – Summary.

Halifax Elementary School
Halifax, MA 02338

December 13, 2017

- 9.6** All General Bidders are advised that all contractors and their employees working on this project, on premises, shall be required to submit to the Town of Halifax Inquiry About Criminal Record (CORI) system check. Forms are located under Section 00 8000 - Other Forms of the Project Manual.

END OF SECTION



Tutorial #1 eBidding REGISTRATION INSTRUCTIONS

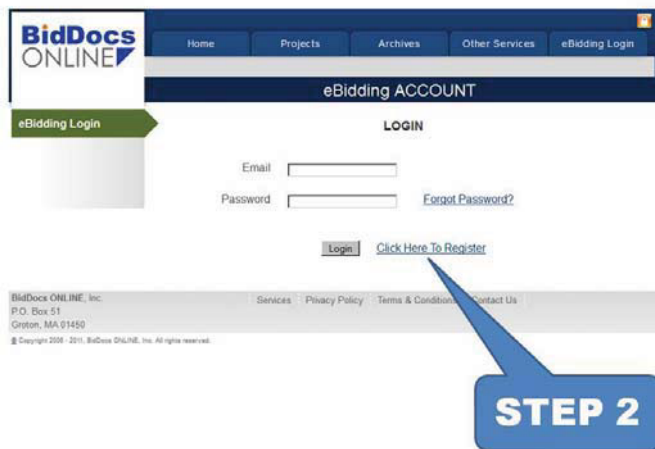
Below are the step by step instructions on how to register to use BidDocs ONLINE eBidding. There is no cost to register. Start by going to

www.biddocsonline.com

eBidding Registration Instructions

1

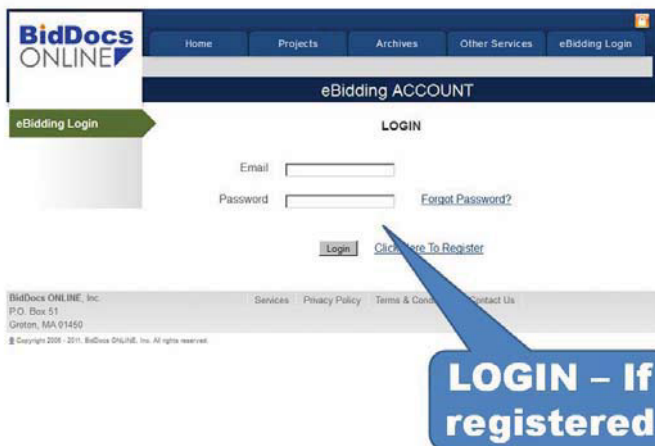
STEP 1: Click on the “eBidding Login” tab at the top of the page.



STEP 2: If your company has not previously registered, click on the text “[Click Here To Register](#)”.

eBidding Registration Instructions

2



STEP 3: If your company has previously registered, login by entering the registered email address and password and then click the “Login” button.

Note: Your company will have only one registration and must use the same password.

eBidding Registration Instructions

3

eBidding ACCOUNT

REGISTRATION

All fields must be completed to continue to your Electronic Bidder Account. Please remember to print, sign and forward your registration form and forward to BidDocs ONLINE, Inc. at least 3 days prior to submitting a bid.

User Name: Title:

Person authorized to sign bids: ☐ Yes ☐ No

Company Name:

Type of Entity: ☐ Corporation ☐ SBO Certification ☐ DBE ☐ WBE ☐ DBE

☒ Check if same as street address

Street Address:

City/Town: State: Zip Code:

Phone: Fax:

Federal ID: or Social Security Number:

Email: User ID:

Password: (8 characters and/or numbers)

Verify Password:

Your company must register as an Electronic Bidder in order to submit a bid on projects designated for Electronic Bidding on BidDocs ONLINE. The Electronic Bidder designation is separate and different from the Electronic Plan holder designation.

IMPORTANT: The original copy of the registration form must be forwarded to BidDocs ONLINE, Inc. It must be received three (3) business days prior to the bid date. The form must be sent via a delivery method that can trace the delivery to BidDocs ONLINE. An electronic bid may not be submitted unless the original form received by BidDocs ONLINE and authorization is confirmed.

Once your company is registered as an Electronic Bidder, your company may modify and update information at any time. The ELECTRONIC BIDDING SIGNATURE AUTHORIZATION FORM must be resubmitted if your company name or the person authorized to submit your bids changes. In such a case, an updated ELECTRONIC BIDDING SIGNATURE AUTHORIZATION FORM must be received by BidDocs ONLINE, Inc. no later than three (3) days prior to the bid date.

☐ I have read and agree to all terms and conditions

STEP 3: All fields must be completed in the registration form.

STEP 4: After completing the registration form, you must read and acknowledge the Terms and Conditions. Click the "Submit" button.

BidDocs ONLINE

Home Projects Archives Other Services eBidding Login

eBidding ACCOUNT

LOGIN

Email:

Password: [Forgot Password?](#)

[Click Here To Register](#)

BidDocs ONLINE, Inc.
P.O. Box 51
Groton, MA 01459

Services Privacy Policy Terms & Conditions Contact Us

© Copyright 2008 - 2011 BidDocs ONLINE, Inc. All rights reserved.

STEP 5: Enter the email and password previously created during the registration process and click "Login".

BidDocs ONLINE

Home Projects Archives Other Services eBidding

ELECTRONIC BIDDING

ACCOUNT AUTHORIZATION

IMPORTANT: The original copy of the registration form must be forwarded to BidDocs ONLINE, Inc. no later than three (3) business days prior to the bid date. The form must be sent via a delivery method that can trace the delivery to BidDocs ONLINE. An electronic bid may not be submitted unless the original form is received by BidDocs ONLINE and authorization is confirmed.

Note: If your company name or authorized person submitting bids changes, you must complete a new authorization form and submit it to BidDocs ONLINE, Inc. at least 3 days prior to submitting a bid.

BidDocs ONLINE Inc.
P.O. Box 51
61 Skyfields Drive
Groton, MA 01450
Attn: eBid Signature Authorization Form

STEP 6: After logging in, the account authorization screen will appear. You must click "Print Form" to proceed to Step 7.

STEP 7

STEP 7: Print and notarize the form (sign in blue ink). Return the original “Electronic Bidder Signature Authorization Form” to BidDocs ONLINE Inc.

The mailing address is:
BidDocs ONLINE Inc.
P.O. Box 51
61 Skyfields Drive (for overnight)
Groton, MA 01450

Your company is responsible for ensuring that BidDocs ONLINE receives the signed Electronic Bidder Signature Authorization Form a minimum of three (3) business days prior to the bid date. BidDocs ONLINE will notify you by email that your form has been received and processed. A unique bar code will identify your bid paperwork.

Note: The registration form will remain “active” until such time that your company requests a change in the person signing the form, the company address or other pertinent company information. Your company is responsible for printing and resubmitting an updated form as required.

STEP 8

STEP 8: While the Electronic Bidder Signature Authorization Form is being processed, you may commence completing the common forms (DCAM Eligibility and Sections 1-4 of the DCAM Update Statement) that are required for MGL c. 149 bids. (See Tutorial #2 - eBidding Common Forms Instructions)

Please note that you are responsible for completing the associated forms for each sub-trade and/or general bid as applicable.

Summary: THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED BY THE AWARDING AUTHORITY. You must submit your bid electronically at www.biddocsonline.com. At any time during the bidding process, you may print the various bid documents for your company's records. Additional instructions to complete the other bid forms are accessible on the BidDocs ONLINE website (click on the “Tutorial” tab at the bottom footer).

SECTION 00 3126

EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 – GENERAL

1.01 DESCRIPTION

- A. *Report for Asbestos Containing Materials (Exterior)*
By Universal Environmental Consultants, Dated December 9, 2016
- B. *Report for Asbestos Containing Materials (Interior)*
By Universal Environmental Consultants, Dated November 20, 2017

END OF SECTION

December 9, 2016

Mr. Charles Flagg
HABEEB & ASSOCIATES ARCHITECTS
150 Longwater Drive
Norwell MA 02061

Reference: Report for Asbestos Containing Materials Inspection Services at the Halifax Elementary School [Building Exterior](#)

Dear Mr. Flagg:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

UEC was contracted to perform testing for asbestos in roofing and caulking material at the Halifax Elementary School. Testing was performed on Thursday, December 8, 2016.

Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with Environmental Protection Agency (EPA) standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. George Bezreh and analyzed by a Massachusetts licensed laboratory EMSL, Woburn, MA. Bulk sample is determined to contain asbestos if the sample was found to contain more than 1-% asbestos.

Samples results are attached.

Twenty two (22) bulk samples were collected and analyzed for asbestos from various materials suspected to contain asbestos.

Samples results indicated that asbestos was found in the following samples.

1. Roof curb tar/gravel flashing (6% Asbestos)
2. Roof curb tar/gravel flashing (6% Asbestos)
6. Old roof flashing mastic (4% Asbestos)
11. Old roof tar paper flashing (2% Asbestos)
20. Wood cornice caulking (5% Asbestos)
21. Roof chimney caulking (2% Asbestos)

Mr. Charles Flagg
December 9, 2016
Page 2

All ACM that might be disturbed must be removed and properly disposed by a Massachusetts licensed asbestos abatement contractor. The contractor must comply with Department of Environmental Protection (DEP) regulations 310 CMR 7.15 regarding removing of roofing material including the submission of an abatement plan.

Please do not hesitate to call me at (508) 628-5486 if you have questions about our services.

Very truly yours,

Universal Environmental Consultants



Ammar M. Dieb
President

UEC:\2165 453.00\Report.DOC

Enclosure

131605901

CHAIN OF CUSTODY

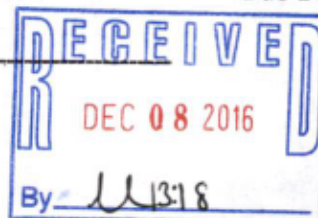
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adie@uec-env.com

Town/City: Halifax, MA Building Name: Halifax Elementary School

Sample	Result	Description of Material	Sample Location
1		curb tar + gravel flashing	Roof
2		curb tar + gravel flashing	roof
3		caulking	Roof stack pipe
4		felt paper flashing	roof mech. Room
5		felt paper flashing	roof mech. room
6		mastic	roof flashing old roof
7		roofing material	roof (old)
8		roofing material	roof (old) by expansion joint
9		shingle + paper	roof (old)
10		caulking	roof at eave
11		tar paper flashing	roof (old)
12		caulking flashing	roof
13		vapor barrier	1992 roof
14		mastic at coping	roof wall coping
15		shingle + paper	roof (old)
16		roofing material	roof (old)
17		shingle + paper	1992 roof
18		curb flashing	roof
19		shingle + paper	Gym roof
20		caulking	wood cornice

Reported By: George Beret Date: 12/8/16 Due Date: 24 hr

Received By: _____ Date: _____ PM

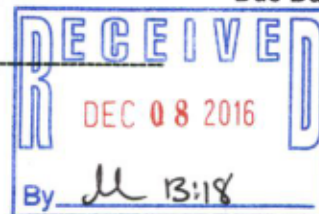


Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
<u>adieb@uec-env.com</u>

Town/City: Halifax, MA Building Name Halifax Elementary School

[illegible]

Reported By: George Beresh Date: 12/8/16 Due Date: 24 HR
Received By: _____ Date: _____ **RECEIVED** D/M





EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com / bostonlab@emsl.com>

EMSL Order: 131605901

Customer ID: UEC63

Customer PO:

Project ID:

Attention: Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Phone: (617) 984-9772

Fax: (508) 628-5488

Received Date: 12/08/2016 1:18 PM

Analysis Date: 12/09/2016

Collected Date:

Project: Halifax Elementary School - Halifax, MA

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1 131605901-0001	Roof - Curb Tar & Gravel Flashing	Black Fibrous Homogeneous	3% Cellulose	91% Non-fibrous (Other)	6% Chrysotile
2 131605901-0002	Roof - Curb Tar & Gravel Flashing	Black Fibrous Homogeneous	5% Cellulose	89% Non-fibrous (Other)	6% Chrysotile
3 131605901-0003	Roof Stack Pipe - Caulking	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4 131605901-0004	Roof Mech. Room - Felt Paper Flashing	Black Fibrous Homogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
5 131605901-0005	Roof Mech. Room - Felt Paper Flashing	Black Fibrous Homogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
6 131605901-0006	Roof Flashing Old Roof - Mastic	Black Fibrous Homogeneous	10% Cellulose	86% Non-fibrous (Other)	4% Chrysotile
7 131605901-0007	Roof (Old) - Roofing Material	Black Fibrous Homogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
8 131605901-0008	Roof (Old) by Expansion Joint - Roofing Material	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
9 131605901-0009	Roof (Old) - Shingle & Paper	Black Fibrous Homogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
10 131605901-0010	Roof at Eave - Caulking	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
11 131605901-0011	Roof (Old) - Tar Paper Flashing	Black Fibrous Homogeneous	5% Cellulose	93% Non-fibrous (Other)	2% Chrysotile
12 131605901-0012	Roof - Caulking Flashing	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
13 131605901-0013	1992 Roof - Vapor Barrier	Brown/Black Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (Other)	None Detected
14 131605901-0014	Roof Wall Coping - Mastic at Coping	Black Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
15 131605901-0015	Roof (Old) - Shingle & Paper	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
16 131605901-0016	Roof (Old) - Roofing Material	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected

Initial report from: 12/09/2016 13:57:04



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com / bostonlab@emsl.com>

EMSL Order: 131605901

Customer ID: UEC63

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
17 131605901-0017	1992 Roof - Shingle & Paper	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
18 131605901-0018	Roof - Curb Flashing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
19 131605901-0019	Gym Roof - Shingle & Paper	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
20 131605901-0020	Wood Cornice - Caulking	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
21 131605901-0021	Roof Chimney - Caulking	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
22 131605901-0022	Roof Base - Stucco	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Michael Mink (22)

Steve Grise, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3, VT AL998919, Maine Bulk Asbestos BA039

Initial report from: 12/09/2016 13:57:04

November 20, 2017

Mr. Scott Bancroft
HABEEB & ASSOCIATES ARCHITECTS
150 Longwater Drive
Norwell MA 02061

Reference: Report for Asbestos Containing Materials Inspection Services at the Halifax Elementary School – Window Replacement Project [Building Interior](#)

Dear Mr. Bancroft:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

UEC was contracted to perform testing for asbestos in window and door caulking material at the Halifax Elementary School (Old Wing). Testing was performed on Friday, September 22, 2017 and Tuesday, October 10, 2017.

Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with Environmental Protection Agency (EPA) standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. George Bezreh and analyzed by a Massachusetts licensed laboratory AmeriSci, New York, NY and Weymouth, MA. Bulk sample is determined to contain asbestos if the sample was found to contain more than 1-% asbestos.

Samples results are attached.

Friday, September 22, 2017:

Fifteen (15) bulk samples were collected and analyzed for asbestos from various exterior caulking materials suspected to contain asbestos. Samples results indicated that no asbestos was found in any of the samples collected.

Tuesday, October 10, 2017:

Ten (10) bulk samples were collected and analyzed for asbestos from various interior caulking materials suspected to contain asbestos. Samples results indicated that asbestos was found in the interior window caulking.

All ACM that might be disturbed must be removed and properly disposed by a Massachusetts licensed asbestos abatement contractor under the supervision of Massachusetts licensed asbestos project monitor as required per AHERA regulations.

Mr. Scott Bancroft
November 20, 2017
Page 2

Please do not hesitate to call me at (508) 628-5486 if you have questions about our services.

Very truly yours,

Universal Environmental Consultants

A handwritten signature in blue ink, appearing to read "Ammar M. Dieb", is written over a horizontal line.

Ammar M. Dieb
President

UEC:\217 394.00\Revised Report.DOC

Enclosure



Please Reply To:

AmeriSci New York

117 EAST 30TH ST.

NEW YORK, NY 10016

TEL: (212) 679-8600 • FAX: (212) 679-3114

FACSIMILE TELECOPY TRANSMISSION

To: Ammar Dieb
Universal Engineering Corporation
Fax #: (508) 628-5488

Email: adieb@ucc-env.com

From: Bella J. Chernis
AmeriSci Job #: 217093888
Subject: PLM rush Results
Client Project: Halifax Elementary School;
Halifax, MA

Date: Tuesday, September 26, 2017

Time: 13:25:05

Comments:

Number of Pages:

5
(including cover sheet)

CONFIDENTIALITY NOTICE: Unless otherwise indicated, the information contained in this communication is confidential information intended for use of the individual named above. If the reader of this communication is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is prohibited. If you have received this communication in error, please immediately notify the sender by telephone and return the original message to the above address via the US Postal Service at our expense. Samples are disposed of in 60 days or unless otherwise instructed by the protocol or special instructions in writing. Thank you.

Certified Analysis

Service 24 Hours A Day • 7 Days A Week

Competitive Prices

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**AmeriSci New York**

117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

Universal Engineering Corporation
Attn: Ammar Dieb
12 Brewster Road

Framingham, MA 01702

Date Received 09/26/17 **AmeriSci Job #** 217093888
Date Examined 09/26/17 **P.O. #**
Page 1 **of** 3
RE: Halifax Elementary School; Halifax, MA

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1 Location: Exterior Window, Old Bldg. - Caulking (Glazing) Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100 %	217093888-01	No	NAD (by CVES) by Bella J. Chernis on 09/26/17
2 Location: Ext. Window By Dumpster - Caulking (Framing) Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100 %	217093888-02	No	NAD (by CVES) by Bella J. Chernis on 09/26/17
3 Location: Ext. Window, By Dumpster / Eff. Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100 %	217093888-03	No	NAD (by CVES) by Bella J. Chernis on 09/26/17
4 Location: Ext. Window, Old, Bldg. Front - Caulking (Framing) Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100 %	217093888-04	No	NAD (by CVES) by Bella J. Chernis on 09/26/17
5 Location: Ext. Door Framing, Front - Caulking Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100 %	217093888-05	No	NAD (by CVES) by Bella J. Chernis on 09/26/17

Client Name: Universal Engineering Corporation

PLM Bulk Asbestos Report

Halifax Elementary School; Halifax, MA

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
6	217093888-06	No	NAD
Location: Ext. Window, Old Bldg. Side - Caulking (Glazing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
7	217093888-07	No	NAD
Location: Ext. Window, Old Bldg. Side - Caulking (Framing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
8	217093888-08	No	NAD
Location: Ext. Window, Old Bldg. Front - Caulking (Framing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
9	217093888-09	No	NAD
Location: Ext. Window, Old Bldg. Front - Caulking (Glazing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
10	217093888-10	No	NAD
Location: Ext. Window, Left Of Dumpster - Caulking (Glazing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
11	217093888-11	No	NAD
Location: Ext. Window, Front - Caulking (Glazing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

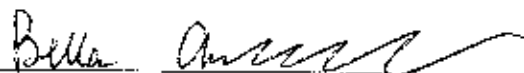
PLM Bulk Asbestos Report

Halifax Elementary School; Halifax, MA

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
12	217093888-12	No	NAD
Location: Ext. Window, Front - Caulking (Glazing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
13	217093888-13	No	NAD
Location: Ext. Window, Front - Caulking (Framing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
14	217093888-14	No	NAD
Location: Ext. Window, Side - Caulking (Glazing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
15	217093888-15	No	NAD
Location: Ext. Window, Side - Caulking (Glazing)			(by CVES) by Bella J. Chernis on 09/26/17
Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

Reporting Notes:

Analyzed by: Bella J. Chernis



*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis by EPA 800/M4-82-020 per 40 CFR 763 (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite or 198.6 for NOB samples or EPA 400 pt ct by EPA 600/M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab. This PLM report relates ONLY to the items tested. AIHA-LAP, LLC Lab ID 102843, RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054.

Reviewed By: _____ _END OF REPORT_____



AMERISCI

Please Reply To:

AmeriSci Boston

8 SCHOOL ST.

WEYMOUTH, MA 02189

TEL: (781) 337-9334 • FAX: (781) 337-7642

FACSIMILE TELECOPY TRANSMISSION

To: Ammar Dieb
Universal Environmental Consultant

Fax #:

Email: adieb@ucc-env.com

From: Bryan H. Clark
AmeriSci Job #: 517101018
Subject: PLM 24 hour Results
Client Project: Halifax Elementary School;
Halifax, MA

Date: Tuesday, October 10, 2017

Time: 14:33:28

Comments:

Number of Pages:

4
(including cover sheet)

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PLM Bulk Asbestos Report

Universal Environmental Consultant

Attn: Ammar Dieb

12 Brewster Road

Framingham, MA 01702

Date Received 10/10/17**Date Examined** 10/10/17**AmeriSci Job #** 517101018**P.O. #****Page** 1 **of** 2**RE:** Halifax Elementary School; Halifax, MA

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1	517101018-01	No	NAD
Location: Caulking-All Purpose Room Interior Window			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 5 %, Non-fibrous 95 %			
2	517101018-02	No	NAD
Location: Caulking-Kitchen Interior Window			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
3	517101018-03	Yes	Trace (<1 %)
Location: Caulking-Interior Cafeteria Window			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100 %			
4	517101018-04	No	NAD
Location: Caulking-Interior Cafeteria Window			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 5 %, Non-fibrous 95 %			
5	517101018-05	Yes	10 %
Location: Caulking-Interior Window 130			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types: Chrysotile 10.0 %			
Other Material: Non-fibrous 90 %			

Client Name: Universal Environmental Consultant

PLM Bulk Asbestos Report

Halifax Elementary School; Halifax, MA

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
6	517101018-06	No	NAD
Location: Caulking-NW Exterior Glass Glazing Gym			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
7	517101018-07	No	NAD
Location: Caulking-NE Exterior Glass Glazing Gym			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
8	517101018-08	No	NAD
Location: Caulking-Exterior Glass Glazing All Purpose			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
9	517101018-09	No	NAD
Location: Caulking-Int Glass Glazing Gym			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
10	517101018-10	No	NAD
Location: Caulking-Int Glass Glazing Cafe			(by CVES) by Bryan H. Clark on 10/10/17
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

Reporting Notes:Analyzed by: Bryan H. Clark *Bryan H. Clark* Date Analyzed: 10/10/17

NAD = no asbestos detected; CVES = Calibrated Visual Estimate; NA = not analyzed; N/A/PS = not analyzed / positive stop; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #102079-0). Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: _____

517,01018

Town/City: Wellesley Building Name: Wellesley Elementary School

Reported By: George Beech Date: 10/10/17 Due Date: 24 HR
Received By: Antony Date: 10/10/17 10:00 PM

FORM FOR GENERAL BID

TO THE AWARDING AUTHORITY

A. The undersigned proposes to furnish all labor and materials required for _____ for the

PROJECT

in _____, Massachusetts,

in accordance with the accompanying plans and specifications prepared by

Name of Engineer/Architect

For the contract price specified below, subject to additions and deductions according to the terms of the specifications.

B. This bid includes addenda numbered: _____

C. The proposed contract price is:

Dollars \$

Bid Amount in Words		Bid Amount in Numbers	
For Alternate	No. _____	Add \$	Subtract \$
	No. _____	\$	\$
	No. _____	\$	\$
	No. _____	\$	\$
	No. _____	\$	\$
	No. _____	\$	\$

Each Alternate shall be listed separately

D. The subdivision of the proposed contract price is as follows:

ITEM 1. The work of the general contractor, being all work other than that covered by ITEM 2.

TOTAL OF ITEM 1\$ _____

ITEM 2. Sub-bids as follows:

Sub-trade	Name of Filed Sub-bidder	Sub-bid Amount	Bond Required	
			Yes	No
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

TOTAL OF ITEM 2\$ _____

The undersigned agrees that each of the above named sub-bidders will be used for the work indicated at the amount stated, unless a substitution is made. The undersigned further agrees to pay the premiums for the performance and payment bonds furnished by sub-bidders as requested herein and that all of the cost of all such premiums is included in the amount set forth in Item I of this bid.

The undersigned agrees that if selected as general contractor, he will promptly confer with the awarding authority on the question of sub-bidders; and that the awarding authority may substitute for any sub-bid listed above a sub-bid filed with the awarding authority by another sub-bidder for the sub-trade against whose standing and ability the undersigned makes no objection; and that the undersigned will use all such finally selected sub-bidders at the amounts named in their respective sub-bids and be in every way as responsible for them and their work as if they had been originally named in this general bid, the total contract price being adjusted to conform thereto.

- E. The undersigned agrees that, if he is selected as general contractor, he will within five days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof by the awarding authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price; provided, however, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable.

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards made subject to section 44A.

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated there under.

NAME OF BIDDER

SIGNATURE AND TITLE OF PERSON SIGNING BID

Date:

BUSINESS ADDRESS

FORM FOR SUB-BID

TO ALL GENERAL BIDDERS EXCEPT THOSE EXCLUDED:

A. The undersigned proposes to furnish all labor and materials required for completing, in accordance with the hereinafter described plans, specifications and addenda, all the work specified in Section No _____ of the specifications and in any plans specified in such section

prepared by _____ for _____

for the _____ in, _____ Massachusetts,

for the contract sum of :

		Dollars \$	
		Bid Amount in Words	Bid Amount in Numbers
For Alternate	No. _____	Add \$ _____	Subtract \$ _____
	No. _____	\$ _____	\$ _____
	No. _____	\$ _____	\$ _____
	No. _____	\$ _____	\$ _____

Each Alternate shall be listed separately.

B. This Sub-bid includes addenda numbered _____

C. This Sub-bid

☐

May be used by any General Bidder Except:

☐

May only be used by the following General Bidders:

To exclude general bidders, insert "X" in one box only and fill in blank following that box.

Do not answer C if no general bidders are excluded

D. The undersigned agrees that, if selected as a sub-bidder, he will, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the general bidder selected as the general contractor, execute with such general bidder a subcontract in accordance with the terms of this sub-bid, and contingent upon the execution of the general contract, and, if requested to do so in the general bid by such general bidder, who shall pay the premiums therefor, or if prequalification is required pursuant to Section 44D 3/4, furnish a performance and payment bond of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority, in the full sum of the subcontract price.

E. The names of all persons, firms and corporations furnishing to the undersigned labor or labor and materials for the class or classes or part thereof of work for which the provisions of the section of the specifications for this sub-trade require a listing in this paragraph, including the undersigned if customarily furnished by persons on his own payroll and in the absence of a contrary provision in the specifications, the name of each such class of work or part thereto and the bid price for such class of work or part thereof are:

NAME	CLASS OF WORK	BID PRICE
_____	_____	_____
_____	_____	_____

(Do not give bid price for any class or part thereof furnished by the undersigned).

- F. The undersigned agrees that the above list of bids of the undersigned represents bona fide bids based on hereinbefore described plans, specifications and addenda, and that, if the undersigned is awarded the contract, they will be used for the work indicated at the amounts stated, if satisfactory to the awarding authority.
- G. The undersigned further agrees to be bound to the general contractor by the terms of the hereinbefore described plans, specifications, including all general conditions stated therein, and addenda, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the owner.
- H. The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all the requirements of the plans and specifications:

1. Have been in business under present business name for _____ years
2. Ever failed to complete any work awarded? _____
3. List one or more recent buildings with names of general contractor and architect on which you served as subcontractor for work of similar character as required for the above-named building

Building Type	Architect	General Contractor	Contract Amount
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____

4. Bank Reference: _____

- I. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards of subcontracts subject to section 44F. ***The safety training requirement in this paragraph is effective July 1, 2006.***

The undersigned further certifies under penalty of perjury that this sub-bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

NAME OF SUB-BIDDER

SIGNATURE & TITLE OF PERSON SIGNING BID

BUSINESS ADDRESS

SECTION 00 4125**SUBCONTRACT**

THIS AGREEMENT made this _____ day of _____, 20____

by and between _____

☐ a corporation organized and existing under the laws of _____☐ a partnership consisting of _____☐ an individual doing business as _____

hereinafter called the "Contractor", and _____

☐ a corporation organized and existing under the laws of _____☐ a partnership consisting of _____☐ an individual doing business as _____

hereinafter called the "Subcontractor",

1. The Subcontractor agrees to furnish all labor and materials required for the completion of all work specified in Section No(s) _____ of the Specifications for _____ and the Drawings referred to

(Name of Subtrade)

therein and Addenda No. _____, _____, _____, _____, _____, _____, for construction of:

_____ as
prepared by the Architect, HABEEB & ASSOCIATES ARCHITECTS, 150 Longwater Drive, Suite
201, Norwell, MA 02061 for the sum of _____

_____ Dollars (\$ _____)

and the Contractor agrees to pay the Subcontractor said sum for said work.

Halifax Elementary School
Halifax, MA 02338

December 13, 2017

- a) The Subcontractor agrees to be bound to the Contractor by the terms of the hereinbefore described Drawings, Specifications (including all General Conditions stated therein) and Addenda and to assume to the Contractor all the obligations and responsibilities that the Contractor by those documents assumes to the Town of Halifax, Massachusetts hereinafter called the "Awarding Authority", except to the extent that provisions contained therein are by their terms or by law applicable only to the Contractor.
 - b) The Contractor agrees to be bound to the Subcontractor by the terms of the hereinbefore described documents and to assume to the Subcontractor all the obligations and responsibilities that the Awarding Authority by the terms of the hereinbefore described-documents assumes to the Contractor, except to the extent that provisions contained therein are by their terms or by law applicable only to the Awarding Authority.
2. Contractor agrees to begin, prosecute, and complete the entire Work specified by the Awarding Authority in an orderly manner so that the Subcontractor will be able to begin, prosecute, and complete the work described in this Subcontract; and, in consideration thereof, upon notice from the Contractor, either oral or in writing, the Subcontractor agrees to begin, prosecute, and complete the work described in this Subcontract in an orderly manner and with due consideration to the date or time specified by the Awarding Authority for the completion of the entire Work.
3. The Subcontractor agrees to furnish to the Contractor within a reasonable time after the execution of this Subcontract, evidence of Workmen's Compensation Insurance as required by law, and evidence of Public Liability and Property Damage Insurance of the type and in limits required to be furnished to the Awarding Authority by the Contractor.
4. The Contractor agrees that no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten (10) days of the calendar month following that in which the claim originated.
5. This Agreement is contingent upon the execution of a General Contract between the Contractor and the Awarding Authority for the complete Work.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above- written.

SEAL

ATTEST _____

(Name of Subcontractor)

By: _____
(Name and Title of Person Signing Subcontract)

Halifax Elementary School
Halifax, MA 02338

December 13, 2017

SEAL

ATTEST _____

(Name of Subcontractor)

By: _____
(Name and Title of Person Signing Subcontract)

END OF SECTION

SECTION 00 4300

BID BOND

The "Bid Bond", AIA Document A310, 2010 Edition, will be the form of Bid Bond. A draft copy is bound in this section of the Project Manual for reference.

END OF SECTION

DRAFT AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

« »« »
« »

SURETY:

(Name, legal status and principal place of business)

« »« »
« »

OWNER:

(Name, legal status and address)

« »« »
« »

BOND AMOUNT: \$ « »

PROJECT:

(Name, location or address, and Project number, if any)

«Draft»
« »
« »

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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Signed and sealed this « » day of « », « »

(Witness)

(Witness)

« »

(Contractor as Principal)

(Seal)

« »

(Title)

« »

(Surety)

(Seal)

« »

(Title)

SECTION 00 4314A**VENDOR/CONTRACTOR INDEMNIFICATION****Vendor/Contractor Indemnification of the Massachusetts School Building Authority**

To the fullest extent permitted by law, _____
(Company Name)

and its subcontractors/vendors/suppliers hereby agree to indemnify, defend and hold harmless the Massachusetts School Building Authority (MSBA) and its officers and employees from and against all claims, damages, liabilities, injuries, costs, fees, expenses, or losses, including, without limitation, reasonable attorney's fees and costs of investigation and litigation, whatsoever which may be incurred by the MSBA arising out of or resulting from the performance or non-performance of the work performed by this vendor or its subcontractors, provided that such claims, damages, liabilities, injuries, costs, fees, expenses, or losses are alleged to be caused in whole, or in part, by an act or omission of the Vendor, subcontractors/vendors/suppliers, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. This indemnification is in accordance with Article 15 of the Project Funding Agreement executed between the Town of Halifax and the Massachusetts School Building Authority.

This Certification is true, complete and accurate, to the best of my knowledge and belief.

By: _____

Name: _____

Title: _____

Date: _____

This form will be filed with the Massachusetts School Building Authority (MSBA) pursuant to Section 3.1.17 of the Project Funding Agreement.

END OF SECTION

SECTION 00 4314B**VENDOR/CONTRACTOR CERTIFICATION**

I hereby certify that _____
(Company Name)

is in compliance with all the applicable requirements of M.G.L. c. 268A, § 1 *et seq* in the procurement of the applicable Contract with the Town of Halifax for the Project.

This Certification is true, complete and accurate, to the best of my knowledge and belief.

By: _____

Name: _____

Title: _____

Date: _____

This form will be filed with the Massachusetts School Building Authority (MSBA) pursuant to Section 3.1.2 of the Project Funding Agreement.

END OF SECTION

Halifax Elementary School
Halifax, MA 02338

December 13, 2017

SECTION 00 4500

OTHER BIDDING FORMS

The following forms are bound in this section of the Project Manual and are required to be submitted with each bid:

- Unit Price Form
- Declaration Form: Non-Collusion, Debarment & Tax Attestation
- Conflict of Interest Certificate

Halifax Elementary School
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UNIT PRICES FORM

Unit Prices as follows: The amounts shown are net changes to the Contract for additional work and include the Contractor's amount for bonds, overhead, profit, labor, materials and equipment costs and all other incidental work, including disposal of materials. For deleted work, the net credit to the Contract shall be the same.

All work is to be accomplished in accordance with applicable sections of the specifications as a complete installation.

Item No.	Section	Item	Quantity to be carried in Base Bid	Unit Measure	Unit Price dollars/cents	Total Amount dollars/cents
1.	06 1000	Remove and replace damaged wall sheathing with $\frac{3}{4}$ " exterior plywood sheathing	500	SF	\$ _____	\$ _____
2.	06 1000	Remove and replace 100 damaged / stained acoustical panels ceiling tiles (2' x 2').	100	Per Tile	\$ _____	\$ _____
					TOTAL	\$ _____

END OF SECTION

Halifax Elementary School
Halifax, MA 02338

December 13, 2017

DECLARATION FORM

Note: The Certificate of Non-Collusion, MGL Chapter 40, Section 4B1/2 or Chapter 30, as applicable, must be signed with an original signature and submitted with the bid or the bid will be rejected.

Certificate of Non-Collusion
MGL Chapter 40, Section 4B1/2 or Chapter 30, as applicable

Any person submitting a proposal for the sale, lease, or provision of equipment, supplies, or material or services to any government unit as defined in Section 4A shall on such proposal, certify as follows: The undersigned certifies, under penalties of perjury, that this bid is in all respects bona fide, fair, and made without collusion or fraud with any other person. As used in this section, the word 'person' shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

Date _____

Typed or Printed Name of Person, Company, or Corporation

Authorized Official's Signature

Each statement below shall be submitted with each bid and shall be duly signed with an original signature.

Public Contracts - Debarment
MGL Chapter 29 Section 29F

The undersigned certifies under penalties of perjury that the said undersigned is not presently debarred from participating in public contracts in the Commonwealth of Massachusetts under the provisions of Chapter 29 Section 29F of the Massachusetts General Laws, or any other applicable debarment provision of any other Chapter of the General Laws, or any Rule or Regulation promulgated thereunder.

Date _____

Name of Bidder _____

Signature _____

Name of Company _____

Address _____

City, State, Zip _____

Attestation Statement - Payment of State Taxes
MGL, Chapter 62C Section 49A.

Pursuant to MGL Chapter 62C, Section 49A, I certify under the penalties of perjury that I, to the best of my knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

State taxes paid to the Commonwealth of Massachusetts, or the State of _____ using Federal ID _____, or SSN _____.

Date _____

Typed or Printed Name of Person, Company, or Corporation

Authorized Official's Signature

END OF FORM

Halifax Elementary School
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CONFLICT OF INTEREST CERTIFICATION

I hereby certify under the pains and penalties of perjury that I am not a municipal employee of the Town of Halifax, nor are any members of my immediate family or partners municipal employees of the Town of Halifax, so as to cause a violation of Massachusetts General Laws, Chapter 268A, Section 19 or Section 20.

Singed under pains and penalties of perjury

Signature of Authorized Official

Typed or Printed Name and Title of Signator

Date: _____

END OF FORM

SECTION 00 5200**STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR**

The "Standard Form of Agreement Between Owner and Contractor", AIA Document A101, 2007 Edition, will be the form of contract agreement between parties. A draft copy is bound in this section of the Project Manual for reference.

Section 00 5400 – Supplement To Form of Agreement which follows this section provides pertinent information that will be incorporated into the "Standard Form of Agreement Between Owner and Contractor", AIA Document A101, 2007 Edition for this project.

DRAFT AIA® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

« »
« »
« »
« »

and the Contractor:
(Name, legal status, address and other information)

« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

«Sample Document»
« »
« »

The Architect:
(Name, legal status, address and other information)

« »
« »
« »
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
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7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS
10	INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

« »

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

« »

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than « » (« ») days from the date of commencement, or as follows:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

« »

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

« »

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

« »

§ 4.3 Unit prices, if any:

(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item

Units and Limitations

Price Per Unit (\$0.00)

§ 4.4 Allowances included in the Contract Sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price.)

Item

Price

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than « » (« ») days after the Architect receives the Application for Payment. *(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of « » percent (« » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of « » percent (« » %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

« »

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

<< >>
<< >>
<< >>
<< >>

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2007

☐ Litigation in a court of competent jurisdiction

☐ Other *(Specify)*

<< >>

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

<< >> % << >>

§ 8.3 The Owner's representative:
(Name, address and other information)

<< >>
<< >>
<< >>
<< >>
<< >>
<< >>

§ 8.4 The Contractor's representative:
(Name, address and other information)

<< >>
<< >>
<< >>
<< >>

<< >>
<< >>

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

<< >>

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

<< >>

Section	Title	Date	Pages

§ 9.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

<< >>

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- 1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

<< >>

- 2 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract)

Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

« »

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond

Limit of liability or bond amount (\$0.00)

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

« »« »

(Printed name and title)

CONTRACTOR (Signature)

« »« »

(Printed name and title)

SECTION 00 5400**SUPPLEMENT TO FORM OF AGREEMENT**

The "Standard Form of Agreement Between Owner and Contractor", AIA Document A101, 2007 Edition, bound herein will be the Agreement and when completed will include the following:

Page 1

The Form of Agreement's basis of payment will be the Stipulated Sum provided in the Contractor's Form for General Bid.

The Owner is The Town of Halifax, Massachusetts.

The Contractor will be the person, firm or corporation contracting to perform the complete Work covered by this Contract, or the legal representation of said party.

The Architect is Habeeb & Associates Architects, 150 Longwater Drive, Suite 201, Norwell, MA 02061.

Page 2ARTICLE 2 – THE WORK OF THIS CONTRACT

The Contractor shall perform all the Work required by the Contract Documents for providing Window, Door, & Siding Replacement for the Halifax Elementary School and all Associated Work, including all labor, materials, equipment and services necessary for and reasonably incidental to the completion of all Work.

ARTICLE 3 – DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1- Add "The Work to be performed under this Contract shall commence on June 20, 2018,"

3.3- Replace first sentence with "The Contractor shall achieve Substantial Completion of the entire Work on or before August 20, 2018. The contractor is responsible for the costs associated with overtime and working off hours (2nd shift) to maintain the Substantial Completion date. Work remaining after the Substantial Completion date shall be done during off hours (2nd shift) due to occupancy of building by staff and students."

3.3- Add "Liquidated Damages": The General Contractor agrees to pay the Owner for any delay in the Work that is not warranted, the sum of one thousand dollars (\$1,000.00) per day for every calendar day beyond the above established date of completion, said amounts to be deemed payment for liquidated and ascertained damages for such delay."

Page 3ARTICLE 5 –PAYMENTS**5.1 PROGRESS PAYMENTS**

5.1.1- Add sentence. "Progress payments will be made monthly in accordance with Chapter 30 as amended, of the General Laws of the Commonwealth of Massachusetts."

5.1.3- Insert "first (1st)" to fill in the blank on line 1; insert "fifteenth (15th) day of the following" to fill in the blanks on line 2; and insert "forty-five (45)" to fill in the blank on line 4."

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December 13, 2017

5.1.6.1- Insert "five percent (5%)" to fill in the blanks on line 3.

5.1.6.2- Insert "five percent (5%)" to fill in the blanks on line 4.

Page 4

5.2 FINAL PAYMENT

5.2.2- Delete "30 days" and insert "sixty-five (65) days" in sentence.

Page 5

ARTICLE 6 -DISPUTE RESOLUTION

6.2 BINDING DISPUTE RESOLUTION

Choose "Litigation in a court of competent jurisdiction"

Page 6

ARTICLE 9 –ENUMERATION OF CONTRACT DOCUMENTS

9.1.4- See Section 00 0030 – Table Of Contents of the Project Manual for complete list of specifications for this project that will be part of this agreement.

9.1.5- See Section 00 8600 – Drawing List of the Project Manual for complete list of drawings for this project that will be part of this agreement.

END OF SECTION

SECTION 00 6113.13**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: That we _____
(Name of Contractor)

a _____ hereinafter called "Principal" and
(Corporation, Partnership, Joint Venture or Individual)

_____ of _____, State of _____
(Surety) (City)

_____ hereinafter called the "Surety" and licensed by the State Division of Insurance to do business under the laws of the Commonwealth of Massachusetts, are held and firmly bound to the Town of Halifax, Massachusetts, hereinafter called "Owner", in the penal sum of _____ Dollars

(\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal has entered into a certain contract with the Owner (the "Construction Contract"), dated the _____ day of _____, 20____, for the construction described as follows:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of the Construction Contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under the Construction Contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise, this obligation shall remain in full force and effect.

PROVIDED, FURTHER, that the Surety's obligation under this Bond shall arise after (1) the Owner has declared the Principal in default of the Construction Contract or any provision thereof, or (2) has declared that the Principal has failed, or is otherwise unable or unwilling, to execute the work consistent with, and in conformance to, the Construction Contract (collectively referred to as a "Contractor Default"). The determination of a Contractor Default shall be made solely by the Owner. The Owner need not terminate the Construction Contract to declare a Contractor Default or to invoke its rights under this Bond.

When the Surety's obligation under this Bond arises, the Surety, at its sole expense and at the consent and election of the Owner, shall immediately take one of following steps: (1) arrange for the Principal to perform and complete the work of the Construction Contract; (2) arrange for a contractor other than the Principal to perform and complete the work of the Construction Contract; (3) reimburse the Owner, in a manner and at such time as the Owner shall decide, for all costs and expenses incurred by the Owner in performing and completing the work of the Construction Contract. Surety will keep Owner reasonably informed of the progress, status and results of its investigation of any claim of the Owner.

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If the Surety does not proceed as provided in this Bond with due diligence and all deliberate speed, the Surety shall be deemed to be in default of this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner.

After the Surety's obligation under this Bond arises, the Surety is obligated, to the limit of the amounts of this Bond, for (1) the correction of defective work and completion of the Construction Contract; (2) additional design, professional services, and legal costs, including attorney's fees, resulting from the Contractor Default or from the default of the Surety under this Bond; (3) any additional work beyond the Construction Contract made necessary by the Contractor Default or default of the Surety under this Bond; and (4) liquidated damages as provided in the Construction Contract, or if none are so specified, actual damages and consequential damages resulting from the Contractor Default or any default of the Surety under this Bond.

Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction in the Commonwealth of Massachusetts.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Construction Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Construction Contract or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument is executed in _____ () counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

ATTEST:

Principal

(Principal Secretary)

By _____

(Address-Zip Code)

(SEAL)
Witness as to Principal

(Address-Zip Code)

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December 13, 2017

ATTEST:

Surety

By _____
(Attorney-in-Fact)

(Address-Zip Code)

_____ (SEAL)
Witness as to Surety

(Address-Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.

END OF SECTION

SECTION 006113.16**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: That we _____

_____ a _____
(Name of Contractor) (Corporation, Partnership, Joint Venture or Individual)

hereinafter called "Principal" and _____ of _____,
(Surety)

State of _____ hereinafter called the "Surety" and licensed by the State
(City and State)

Division of Insurance to do business under the laws of the Commonwealth of Massachusetts, are held
and firmly bound to the Town of Halifax, Massachusetts, hereinafter called "Owner", in the penal sum of

_____ Dollars (\$ _____) in lawful
money of the United States, for the payment of which sum well and truly to be made, we bind ourselves,
our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a
certain contract with the Owner, dated the _____ day of _____, 20_____,
a copy of which is hereto attached and made a part hereof for the construction described as follows:

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms,
subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the
work provided for in such contract, and any authorized extension or modification thereof, including all
amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and
tools, consumed or used in connection with the construction of such work, and all insurance premiums on
said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this
obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that
no change, extension of time, alteration or addition to the terms of the contract or to the work to be
performed thereunder or the specifications accompanying the same shall in any way affect its obligation
on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition
to the terms of this contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall
abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

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IN WITNESS WHEREOF, this instrument is executed in ____ () counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

Surety

By _____
(Attorney-in-Fact)

(Address-Zip Code)

Witness as to Surety

(Address-Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.

END OF SECTION

SECTION 00 7200**GENERAL CONDITIONS OF THE CONTRACT**

The "General Conditions of the Contract for Construction", AIA Document A201, 2007 Edition, is part of the contract agreement between parties. A draft copy is bound in this section of the Project Manual for reference.

This section provides pertinent information that will be incorporated into the "Standard Form of Agreement Between Owner and Contractor", AIA Document A101, 2007 Edition for this project.

END OF SECTION

DRAFT AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

<>

< >

THE OWNER:

(Name, legal status and address)

< >< >

< >

THE ARCHITECT:

(Name, legal status and address)

< >< >

< >

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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(Topics and numbers in bold are section headings.)

Acceptance of Nonconforming Work

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner’s approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term “Owner” means the Owner or the Owner’s authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct,

but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled

to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce

other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the

Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term “Sub-subcontractor” is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be

furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the

Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's

risk “all-risk” or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an “all-risk” or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect’s and Contractor’s services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner’s option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner’s property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner’s property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The

party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

SECTION 00 7300**SUPPLEMENTARY GENERAL CONDITIONS****I. The General Conditions**

The "General Conditions of the Contract for Construction", AIA Document A201 - (2007) Articles 1 through 15 inclusive, is a part of this contract.

II. The Supplementary General Conditions

The following supplements modify, delete and/or add to the General Conditions. Where any Article, Paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any Article, Paragraph, or subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

III. Modifications to Various Articles of the AIA Document A201 - (2007) General Conditions**ARTICLE 1: GENERAL PROVISIONS****§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**

Delete Article 1.2.1 in its entirety and replace with the following:

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. All work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others. Should the Drawings or Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work unless otherwise directed by written addendum to the Contract.

ARTICLE 3: CONTRACTOR**§ 3.9 SUPERINTENDENT**

Delete Article 3.9.2 in its entirety and replace with the following:

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection. The proposed superintendent shall possess a valid, current, and unrestricted MA construction Supervisors License.

ARTICLE 7: CHANGES IN THE WORK**§ 7.2 CHANGE ORDERS**

Delete Articles 7.2.1 through 7.3.10 in their entirety and replace with the following:

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.3 Upon request of the Owner or the Architect, the Contractor shall without cost to the Owner submit to the Architect, in such form as the Architect may require, an accurate written estimate of the cost of any proposed extra Work or change. The estimate shall indicate the quantity and unit cost of each item of material and the number of hours of work and hourly rate for each class of labor, as well as a description and the amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of material shall be shown if required by the Architect. The Contractor shall promptly revise and resubmit each estimate if the Architect determines that it is not in compliance with the requirements of this Article, or that it contains errors of facts or mathematical errors. If required by the Architect, in order to establish the exact cost of new Work added or of previously required Work omitted, the Contractor shall obtain and furnish to the Architect bona fide proposals from recognized suppliers for furnishings any material included in such Work. Such estimates shall be furnished promptly so as to occasion no delay in the Work, and shall be furnished at the Contractor's expense. The Contractor shall state in the estimate any extension of time required for the completion of the Work if the change or extra work is ordered.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, and if the Contract Documents include a unit price for the work that is the subject of such directive, such unit price shall be the basis if the adjustment to the Contract Sum, unless the Owner, in its sole discretion, chooses another method. If, however, the Contract Documents do not include a unit price for such work, the adjustment shall be based on one of the following methods as selected by the Owner.

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 By Cost and Percentages as estimated by the Contractor as provided in Section 7.3.7 and accepted by the Owner; the Contractor's estimate shall become a fixed price which shall not be changes by any variation in the actual cost of executing the Work covered by the change.
- .5 By actual Cost determined after the Work covered by the change completed, plus Percentage as provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that, in the opinion of the Architect, application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and within five (5) calendar days from receipt of the Construction Change Directive, advise the Architect by written notice of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time. Failure to do so advise the Architect within such 5-day period (1) shall be interpreted as Contractor's agreement with the proposed method of adjustment; (2) shall constitute an irrevocable waiver of any right of the Contractor to submit a claim on account of the method of adjustments; an (3) shall cause the Construction Change Directive to be deemed and constitute a Change Order.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be deemed and constitute recorded as a Change Order.

§ 7.3.7 If the proposed method of adjustment in the Contract Sum is based on unit prices that are stated in the Contract Documents, such unit prices shall be the basis of any adjustment to the Contract Sum, unless the Owner has chosen another method pursuant to subparagraph 7.3.3. If the proposed method of adjustment is not based on such unit prices and the Contractor objects to the proposed method of adjustment, the Contractor must notify the Architect of such objection in writing within five (5) calendar days from the Contractor's receipt of the Construction Change Directive. Failure to so object will irrevocably waive any such objections and claims on account of such method of adjustment, and the Construction Change Directive shall be deemed and shall constitute a Change Order. If the Contractor does so object, the adjustment to the Contract Sum shall be determined by the Architect on the basis of reasonable expenditures and savings if those performing the Work attributable to the change, including, in case of an increase or decrease in the Contract Sum, a Percentage for overhead and profit. In such case, and also under Sections 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bond and insurance, and permit fees, and
- .5 A Percentage for overhead and profit.

As used in the paragraph, "Cost" shall mean the estimated or actual net increase or decrease in cost to the Contract, Subcontractor, or Sub-subcontractor for performing the work covered by the change, including actual payments for materials, equipment rentals, expendable items, wages and associated benefits to workmen and to supervisors employed full time at the site, insurance, bonds and other provable direct costs, but not including any administrative, accounting or expediting costs, or other indirect or overhead costs, or any wages or benefits or supervisory personnel not assigned full time to the site, or any amount for profit or fee to the Contract, Subcontractor or Sub-subcontractor. No additional mark-up for on-site Superintendent and or Project Manager is allowed. Such percentages are already included in the established mark ups. The labor burden on book rates shall be limited to: Workers Compensation Insurance, FICA insurance, Federal unemployment insurance, and state unemployment insurance.



"Percentage" shall mean an allowance to be added to or subtracted from the cost in lieu of overhead and profit and of any other expense which is not included in the Cost of the Work covered by the change, as defined above. Percentage for a Subcontractor shall be 10% of any net increase or decrease of Cost of any Work performed by the Subcontractor's own forces plus 5% of any aggregate net increase or decrease in Cost of any Work performed for the Subcontractor by other contractors. The Percentage for the General Contractor shall be 10% of any net increase or decrease of Cost of any Work performed by the General Contractor's own forces plus 5% of any net increase or decrease in the cost for all other Work performed by Subcontractors.

When in the reasonable judgment of the Architect a series of Construction Change Directives or Change Orders effect a single change, Percentage shall be calculated on the cumulative net increase or decrease in cost, if any. Maximum amount of percentage is 20% with no more than three tiers.

§ 7.3.8 If the Owner elects to determine the Cost of the Work as provided in method 7.3.3.2 using unit prices stated in the Contract Documents or subsequently agreed upon, the unit prices shall be subject to subparagraph 7.3.7. Notwithstanding the inclusion of unit prices in the Contract Documents, it shall be the Owner's option to require the Cost of any given change to be determined by of the other methods stated in 7.3.7. If the Owner elects to determine the cost of the change by unit prices and the nature of the work is such that its extent cannot readily be measured after the completion of such work or any subsequent work, the Contractor shall keep daily records, available at all times to the Architect for inspection, of the actual quantities of such work put in place, and delivery receipts or other adequate evidence, acceptable to the Architect, indicating the quantities of materials delivered for use in work included in the base Contract Sum. If so required by the Architect, materials for use in unit price work shall be stored apart from all other materials on the Project.

§ 7.3.9 If the Owner elects to determine the Cost of the Work as provided in methods .4 or .5 of subparagraph 7.3. or if the method of determining the cost has not been established before the work is begun, the Contractor shall keep detailed daily records of labor and materials costs applicable to the work.

§ 7.3.10 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase or decrease, if any, with respect to that change.

§ 7.3.11 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts for such changes in the Work shall not be included in Applications for Payment. Such amounts shall only be included in an Application for Payment after the adjustment for the Construction Change Directive has been included in a Change Order signed by the Owner and the Contractor.

§ 7.3.12 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

ARTICLE 8: TIME

§ 8.3 DELAYS AND EXTENSIONS OF TIME

Delete Article 8.3.1 through 8.3.3 and replace with the following:

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; fire (except as caused by Contractor), unusual delay in deliveries, unavoidable casualties or other causes (except weather) beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes such that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine, and this shall be the Contractor's sole remedy for such delay. Under no circumstances will the Contractor be entitled to an increase in the Contract Sum, or any other damages, on account of or in connection with any delay, regardless of the cause of delay, and Contractor agrees not to make any claim for such damages, including but not limited to claims for damages on account of having to perform out-of-sequence work, claims for damages on account of loss of production, and claims for damages on account of hindrances or interference with the work.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 No claim for delay shall be allowed on account of failure of the Architect to furnish Drawings, Specifications or instructions or to return Shop Drawings or Samples until 15 days after receipt by the Architect by registered or certified mail of written demand for such instructions, Drawings, or Samples, and not then unless such claim be reasonable.

§ 8.3.4 No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or condition resulting therefrom.

§ 8.3.5 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on account of any delay in the commencement of the Work and/or any hindrance, delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise except as and to the extent expressly provided in G.L. c. 30. 39N. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

ARTICLE 11: INSURANCE AND BONDS**§ 11.1 CONTRACTOR'S LIABILITY INSURANCE**

Delete Articles 11.1.1 through 11.3.10 in their entirety and replace with the following:

§ 11.1.1 The Contractor shall purchase from and maintain with a licensed carrier rated A VIII or better and to which the Owner has no reasonable objection, and with Owner named as additionally insured in a company or companies lawfully authorized to business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

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- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle.
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

The insurance required by Section 11.1.1 shall include all major divisions of coverage, and shall be on a comprehensive general basis including Premises and Operations (including X-C-U), Owner's and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned, and Hired Motor Vehicles. Such insurance shall be written for not less than any limits of liability required by law or those set forth in the Contract Documents, whichever is greater.

All insurance shall be written on an occurrence basis, unless the Owner approves in writing coverage on a claims-made basis. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and any further period during which coverage is required to be maintained after final payment by the Contract Documents. The Owner shall be named an Additional Insured on all policies.

Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner and authorized to do business in Massachusetts. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. In the event of a policy cancellation, the Insurer must notify the town within (3) three business days. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness. These certificates shall set forth evidence of all coverage required by Sections 11.1.1 and 11.1.2. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending limits of coverage.

§ 11.1.3.1 The Contractor shall be responsible for having acceptable insurance coverage provided by or on behalf of all Subcontractors, with such insurance to be similar to that required of the Contractor under the Agreement and these General Conditions. The Contractor shall not allow any Subcontractor to commence Work on the Project prior to the Contractor's receipt of certificates of insurance that are acceptable in form and limits to the Owner; the Owner shall have no obligation to pay the Contractor for any Work performed by a Subcontractor who has not supplied acceptable insurance certificates prior to starting its Work. The Owner shall be named an additional insured on all such certificates.

§ 11.1.3.2 All insurance policies shall contain provisions or endorsements necessary to assure coverage of claims by one insured against another. All required insurance policies are to be endorsed to state that the Contractor's policies shall be primary to all other insurance available to the Owner and other specified additional insureds for liability arising out of or resulting from the Contractor's operations under the Contract, whether such operations be by the Contractor or by a Subcontractor

or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Owner's Project Manager, the Architect and the Architect's consultants as additional insureds for claims cause in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 In no case shall the limits of liability be less than the following:

.1 General Liability:

\$1,000,000 Bodily Injury and Property Damage Liability, Combined Single Limit

\$3,000,000 Annual Aggregate Limit.

.2 Automobile Liability:

\$1,000,000 Bodily Injury and Property Damage per accident.

.3 Workers' Compensation Insurance as required by law.

.4 Property Coverage for materials and supplies being transported by the contractor, as the Town's Property Contract provides coverage for personal property within 1000 feet of the premises.

.5 Umbrella Liability:

\$5,000,000 minimum per occurrence

\$5,000,000 minimum aggregate.

§ 11.1.6 Owner and Architect shall be listed as additional insureds on all certificates of insurance with respect to liability coverages, including umbrella liability coverage.

§ 11.1.7 Products and completed operations shall be maintained for three (3) years after Final Payment and Completion of Project.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Contractor shall procure and pay for an Owner's policy of Owner's protective liability insurance insuring the Owner and its officers, employees and agents against claims which may arise from operations under the Contract or relating thereto.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 The Owner shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. Coverage for such insurance shall be provided by a company or companies reasonably acceptable to the Owner. Owner shall furnish to Contractor written confirmation as to the insurance carrier's most current financial ratings prior to commencing work. Such insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the work and shall insure against the perils of fire and extended coverage and shall include "all risks" insurance for physical loss or damage including without duplication, theft, vandalism and malicious mischief. This insurance shall also cover portions of the Work stored off the site or in transit. If this insurance is written with stipulated amounts deductible, the Owner shall not be responsible for any difference between the payments made by the insurance carrier and the claim.

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The policy shall contain a provision that coverages afforded under policies will not be canceled or allowed to expire until at least 30 days' written notice has been given to the Owner. The Contractor shall be an additional insured within the policy.

§ 11.3.2 The Owner shall have the power to adjust and settle with its insurers any loss for which it has obtained insurance.

§ 11.3.2.1 Upon the occurrence of an insured loss, the Owner and the Contractor shall cooperate with each other and with each other's insurer in the submission of claims and related information and the distribution of any insurance proceeds. If after such a loss no other special agreement is made, replacement is made, replacement of damage work shall be covered by an appropriate change order.

END OF SECTION

SECTION 00 8000**OTHER FORMS AND REFERENCE MATERIALS**

The following are bound in this section of the Project Manual for use by the General Contractor:

- Clerk's Certificate – To be submitted to the Awarding Authority with the contract
- W-9 Tax ID Form – To be submitted to the Awarding Authority with the contract
- Massachusetts - Supplier Diversity Office - Municipalities General Guidelines
- Massachusetts Prevailing Wage Rates, dated November 10, 2017
- Weekly Payroll Records Report & Statement of Compliance
- Weekly Payroll Report Form
- Excerpts from Applicable State Laws
- AIA Document G702 - Application and Certificate for Payment
- AIA Document G703 - Continuation Sheet
- Town of Halifax Inquiry About Criminal Record (CORI) Forms

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CLERK'S CERTIFICATE

(Please Type or Print Where Indicated)

At a duly authorized meeting of the Board of Directors of _____
held on _____ at which all voted that _____,
_____ of this Company, be and he hereby is authorized to execute
contracts and bonds in the name and behalf of said Company, and affix its Corporate
Seal thereto, and such execution of any contract of obligation in this Company's name on
its behalf by such under seal of the Company, shall be valid and binding upon this
Company.

A true copy,

Attest:

Clerk's Signature

Place of Business _____

Business Telephone: _____

Business Fax: _____

Date of this Contract: _____

I hereby certify that I am the Clerk of _____ and
that _____ is the dully elected _____ of said
Company, and that the above vote has not been amended or rescinded and remains in full force and
effect as of the date of this contract.

Clerk's Signature

Corporate Seal

END OF FORM

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.	
2 Business name/disregarded entity name, if different from above	
3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶ _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i>
5 Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
6 City, state, and ZIP code	
7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number									
				-				-	
or									
Employer identification number									
				-					

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶	Date ▶
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor ²
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
5. Sole proprietorship or disregarded entity owned by an individual	The owner ³
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor ⁴
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity ⁴
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

***Note.** Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.



OPERATIONAL SERVICES DIVISION

SUPPLIER DIVERSITY OFFICE

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Executive Director

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Gary J. Lambert
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Operational Services

SUPPLIER DIVERSITY OFFICE CONSTRUCTION REFORM PROGRAM MUNICIPALITIES GENERAL GUIDELINES

The Supplier Diversity Office (SDO) issues the Construction Reform Program guidelines on the Municipality Guidelines webpage in accordance with the statutory standards set forth in Chapter 193 of the Acts of 2004, which includes a municipal affirmative marketing program for currently certified firms in the Commonwealth of Massachusetts.

THE BIDDING AND CONTRACT INSTRUCTIONS ON THE MUNICIPALITY GUIDELINES WEBPAGE MUST BE INCORPORATED INTO CONTRACT DOCUMENTS, AS REQUIRED BY CHAPTER 193 OF THE ACTS OF 2004.

Municipalities must incorporate Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) goals into both their design and construction procurement for municipal contracts for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building by any city or town that includes funding provided by the Commonwealth such as legislative appropriations, grant awards, reimbursements and municipal commitments to use state funds.

Only firms which are currently MBE or WBE certified by the Supplier Diversity Office (SDO) at the date of contract award will be counted for Construction Reform program purposes. The firm's current SDO state certification letter **shall serve as the sole and exclusive proof of state certification.**

Certification as a Disadvantaged Business Enterprise (DBE), certification as an MBE/WBE by any agency other than SDO, or submission of an application to SDO for certification as an MBE/WBE **shall not confer** MBE or WBE status on a firm for purposes of construction reform program participation credit.

Affirmative Marketing Participation Goals:

The combined goals below were established by the Division of Capital Asset Management and Maintenance (DCAMM) and the Supplier Diversity Office (SDO) and require a reasonable representation of both MBE and WBE firms:

Design Participation: Combined MBE/WBE goal of (17.9%)

Construction Participation: Combined MBE/WBE goal of (10.4%)

Documentation submitted with your signature means that you swear under the pains and penalties of perjury that you have read and understand it. Any false claims for MBE/WBE credit are subject to the Massachusetts False Claims Act and any applicable civil or criminal penalties as determined by the Massachusetts Attorney General's office.¹

Questions and Contact Information:

Separate and individual PDF files are attached for your reference. All questions concerning the Construction Reform Act and the implementation of the new law may be directed to the SDO Director of Construction Reform at **617-502-8851** or by e-mail at John.B.Fitzpatrick@state.ma.us

¹ See generally, MG.L. c.12, §§5A-5O, inclusive.

ATTACHMENT B

PROCEDURES FOR PRE-BID REDUCTION/WAIVER OF MBE/WBE PARTICIPATION GOALS

A. Affirmative Marketing Participation Goals:

The combined goals below were established by the Division of Capital Asset Management and Maintenance (DCAMM) and the Supplier Diversity Office (SDO) and require a reasonable representation of both MBE and WBE firms.

Design Participation: Combined MBE/WBE goal of (17.9%)

Construction Participation: Combined MBE/WBE goal of (10.4%)

All documentation submitted in connection with MBE/WBE credit must be true, accurate and correct to the best of your knowledge. Your signature on any MBE/WBE goal-related document means that you have read and understand it. Any false claims for MBE/WBE credit are subject to the Massachusetts False Claims Act and any applicable civil or criminal penalties as determined by the Massachusetts Attorney General's office.¹

B. Criteria for Adjustment of Goals:²

Potential Bidders may request a written adjustment before bids are submitted. An awarding authority cannot grant an adjustment of goals. Only the SDO has the authority to do this. Written requests must demonstrate that there is no feasible way to meet established contract goals and that a **"Diligent Good Faith Effort"** was made to comply. The request for reduction/waiver will ultimately be decided by the SDO. Factors that may be considered include any or all of the following:

- Actual availability of certified Minority- and/or Women-Owned Business Enterprises (MBE/WBEs);
- The geographic location of the project;
- The scope of work of the project including the opportunities for sub-contracting and subdividing the work;
- Documentation that shows the Bidder attempted in a diligent good faith effort to fulfill contract goals and was unable to do so; and
- Other relevant factors;

Although the SDO is not obligated to do so, the SDO may agree to assist either an awarding authority or any potential bidder with its MBE/WBE outreach. **We strongly encourage you to use this service.**

C. Required Supporting Documentation from Potential Construction Bidders:

- Using the SDO Reduction/Waiver Request form, the Bidder must prove that notices were sent to certified firms.
- They must break down larger scopes of work into its smallest component parts so that the widest available pool of ready, willing and able certified MBE/WBE firms may participate;
- In the event that an individual scope of work was not made available to ready, willing and able certified firms in certain trade categories,³ a bidder must explain why in writing. Follow up documentation such as phone logs, or e-mail may be required to determine with certainty whether the firms were interested in performing the work.
- Additional documentation of reasonable efforts on the part of the Bidder to assist a potential MBE/WBE firm may include items such as, but not limited to: (a) bonding, insurance, lines of credit or any other type of assistance; or (b) evidence that the Bidder placed advertisements in appropriate media and trade association publications.
- The Bidder shall also submit any other information reasonably requested by the Awarding Authority.

D. Process for Requesting Waiver/Reduction of Construction Goals:

Requests from prospective general Bidders to reduce or waive the MBE/WBE participation goals must be written. An awarding authority must receive such requests no later than **ten (10) working days** before the general bids are due. Requests submitted beyond this deadline will not be considered.

¹ See generally, M.G.L. c.12, §§5A-5O, inclusive.

² Applies to waivers and reductions.

³ Other than work performed by filed Sub-Bidders.

certification letter for each MBE/WBE listed in the Schedule of MBE/WBE Participation showing that the MBE/WBE is certified in the area of work for which it is listed on the Letter of Intent.

12. Each Letter of Intent shall describe the work to be performed by the MBE/WBE (the "MBE/WBE Work") with enough specificity to allow an awarding authority to determine which specific items count for MBE/WBE participation credit. The Awarding Authority reserves the right to reject any Letter of Intent if the price to be paid for the MBE/WBE Work does not bear a reasonable relationship to the value of such work under the Contract.
13. Within five (5) working days after receipt of the Schedule for MBE/WBE Participation, Letters of Intent, and most recent SDO certification letter, the Awarding Authority shall review and either approve or disapprove the apparent low Bidder's submissions. If the apparent low Bidder has not submitted an appropriate Schedule for MBE/WBE Participation and appropriate Letters of Intent and SDO most recent certification letter establishing that the MBE/WBE participation goal for the project will be met, the apparent low Bidder will be considered ineligible for Award of the Contract and the Awarding Authority will Award the Contract to the second lowest eligible and responsible Bidder, subject to said Bidder's compliance with these conditions. If funds are insufficient to award to the second lowest Bidder, the project may have to be re-bid.
14. General Conditions of the Contract require the Contractor to submit, within thirty (30) days of the Contract Date, copies of current certification letters for all subcontractors, signed subcontracts with all subcontractors or a purchase order or invoice from each material supplier and/or manufacturer listed on the Schedule for MBE/WBE Participation.
15. A filed sub-Bidder is not required to submit a Schedule of MBE/WBE Participation with its Bid. It may submit a Letter of Intent with its Bid if it is a SDO certified MBE/ WBE. If a filed sub-Bidder intends to sub-subcontract work to a SDO certified MBE/WBE, and the awarding authority permits limited sub-sub-contracting for purposes of MBE/WBE participation, and the filed sub-Bidder wishes that sub-subcontract to be credited toward the participation goals for this Contract, the filed sub-Bidder should submit a Letter of Intent from that MBE/WBE with its Bid.

5. The Contractor and each MBE/WBE subcontractor shall provide the Awarding Authority with all information and documentation necessary to ascertain whether or not an MBE/WBE has performed its own MBE/WBE Work with its own personnel, tools and equipment.
6. Failure to submit documentation to the Awarding Authority shall establish conclusively for the purpose of giving MBE/WBE participation credit under this Contract that such MBE/WBE did not perform such work.

E. Notification of Changes in MBE/WBE Work:

If during the performance of a contract, a contractor determines or has reason to believe that:

1. A scheduled MBE/WBE is unable or unwilling to perform its MBE/WBE Work;
2. There has been or will be a change in any MBE/WBE Work; or
3. That the Contractor will be unable to meet the MBE/WBE participation goal(s) for the Contract for any reason.

Then he/she shall immediately notify the Awarding Authority in writing. Any notice of a change in MBE/WBE Work shall include a revised Schedule of MBE/WBE Participation, and additional or amended Letters of Intent and related subcontracts, as needed.

F. Good Faith Efforts Needed to Support Changes/Reduction of MBE/WBE Participation Goals:

If there is a change or reduction in any MBE/WBE Work which will result in the Contractor failing to meet the MBE/WBE participation goal(s), then he/she shall undertake a diligent, good faith effort to make up the shortfall as follows:

1. The Contractor shall identify all items of the Work remaining to be performed under the Contract that they made available for subcontracting to MBE/WBEs along with that which wasn't along with reasons why.
2. The Contractor shall send written notices to all MBE/WBEs ready, willing and able to perform such work. The contractor will provide the Awarding Authority with documentation identifying: (i) each MBE/WBE solicited, and (ii) each MBE/WBE listed in the SDO directory under the applicable trade category that was not solicited and the reasons why. The Contractor shall also advise the Awarding Authority of the dates that notices were sent and provide a copy of the written notice(s) sent.
3. The Contractor shall make reasonable efforts to follow up on the written notices, including telephone calls or personal visits in order to determine with certainty whether the MBE/WBEs were interested in performing the work. Phone logs or other documentation must be submitted to the Awarding Authority upon request.
4. The Contractor shall make documented reasonable efforts to assist MBE/WBEs that need assistance in obtaining insurance, bonds, or lines of credit in order to perform work under the Contract. Supporting documentation will be provided to the Awarding Authority upon request.
5. The Contractor shall provide the Awarding Authority with a statement of the response received from each MBE/WBE solicited, including the reason for rejecting any MBE/WBE who submitted a proposal.
6. The Contractor shall take any additional measures including, without limitation, placing advertisements in appropriate media and trade association publications announcing the Contractor's interest in obtaining proposals from MBE/WBEs, and/or sending written notification to MBE/WBE economic development assistance agencies, trade groups and other organizations notifying them of the project and of the work available to be subcontracted by the Contractor to MBE/WBEs.

If the Contractor is unable to meet the MBE/WBE participation goals for this Contract after complying fully with each of the above requirements and is otherwise in full compliance with the terms of this provision, the Awarding Authority may reduce the MBE/WBE participation goals for this Contract to the extent that such goals cannot be achieved.

G. Suspension of Payment and/or Performance for Noncompliance:

If a reduction of MBE/WBE goals was given but sufficient good faith efforts (see above) were not documented, then after proper written notice, the Awarding Authority has the discretion to:

1. Suspend payment to the Contractor of an amount equal to the value of the work which was to have been performed by an MBE/WBE pursuant to the Contractor's Schedule of MBE/WBE Participation but which was not so performed, in order to ensure that sufficient Contract funds will be available if liquidated damages are assessed;
2. Suspend the Contractor's performance of this Contract in whole or in part.

EXHIBIT A**SCHEDULE FOR PARTICIPATION
BY MINORITY/WOMEN BUSINESS ENTERPRISES**

Project Number _____

Project Location _____

Project Name _____

- A. Filed Sub-bidders utilizing MBE/WBE firms, and MBE/WBE Sub-bidders attach to Filed Sub-bid.
B. General Contractor must submit to the Awarding Authority within five (5) working days of the opening of General Bids.

BIDDER CERTIFICATION:

The Bidder agrees that if awarded the contract it will expend at least the amount of the contract set forth below for MBE/WBE participation. For purposes of this commitment, the MBE and WBE designation means that a business has been certified by SDO as either a MBE, WBE or MBE/WBE. The Bidder must indicate the MBE/WBE firms it intends to utilize on the project as follows (attach additional sheets if necessary):

Company Name & Address	MBE or WBE	Describe MBE/WBE Scopes of Work (clarify "Labor Only", "Material Only" or "Labor and Material")	If Supplier, Indicate Total Value of Supplies (60% of Total Counts toward Participation)	Total Dollar Value of Participation
1.				
2.				
3.				
4.				
5.				

MBE Goal: \$ _____

Total Dollar Value of MBE Commitment: \$ _____

WBE Goal: \$ _____

Total Dollar Value of WBE Commitment: \$ _____

The undersigned hereby certifies that he/she has read the terms and conditions of the contract with regard to MBE/WBE participation and is authorized to bind the Bidder to the commitment set forth above.

Name of Firm _____

Business Address _____

Print Name _____

Authorized Signature _____

Title _____

Telephone No. _____

Fax No. _____

Date _____

EXHIBIT C**CONTRACTOR PROGRESS PAYMENT REPORT
MINORITY/WOMEN BUSINESS ENTERPRISES PARTICIPATION****Project Number:** _____**Project Name:** _____**Project Location:** _____**Date:** _____**Periodical Payment No.:** _____**General Contractor:** _____**MBE and/or WBE:** _____

One copy of this report is to be submitted for each Minority Business Enterprise (MBE) and/or Women Business Enterprise (WBE) at the time of submitting a request for payment. Copies of the report must be sent to the Minority Business Enterprise (MBE) and/or Women Business Enterprise (WBE) named above and to the municipalities Affirmative Marketing Construction Officer (AMCO). The AMCO will forward a copy of each Contractor Progress Payment Report to SDO on a quarterly basis.

1. The total price to be paid to the above-named Minority Business Enterprise _____ and/or Women Business Enterprise _____:
\$ _____
2. The amount remitted to the Minority Business Enterprise and/or Women Business Enterprise as of the above date for work performed under this project: \$ _____
3. Balance due the Minority Business Enterprise and/or Women Business Enterprise as of the above date for work performed under the above-named project: \$ _____
4. Comments or explanation of amounts indicated under items 1 and 2 above: _____

5. We hereby certify that the information supplied herein (including pages attached) is correct and complete.

General Contractor:**Minority and/or Women Business Enterprise**_____
(Signed)_____
(Signed)_____
(Title)_____
(Title)_____
(Date)_____
(Date)



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

**As determined by the Director under the provisions of the
Massachusetts General Laws, Chapter 149, Sections 26 to 27H**

ROSALIN ACOSTA
Secretary
WILLIAM D MCKINNEY
Director

Awarding Authority: Town of Halifax
Contract Number: 2018-SchoolRepair **City/Town:** HALIFAX
Description of Work: Replacement of the doors, windows, and siding at the Halifax Elementary School
Job Location: 464 Plymouth Street, Halifax, MA 02338

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule from the Department of Labor Standards ("DLS") if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- All apprentices working on the project are required to be registered with the Massachusetts Department of Labor Standards, Division of Apprentice Standards (DLS/DAS). Apprentice must keep his/her apprentice identification card on his/her person during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DLS/DAS regardless of whether or not they are registered with any other federal, state, local, or private agency must be paid the journeyworker's rate for the trade.**
- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F "rental of equipment" contracts.
- Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.15	\$10.91	\$10.89	\$0.00	\$53.95
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.22	\$10.91	\$10.89	\$0.00	\$54.02
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.34	\$10.91	\$10.89	\$0.00	\$54.14
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.29	\$9.80	\$19.23	\$0.00	\$117.32
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2017	\$33.15	\$7.60	\$13.50	\$0.00	\$54.25
	12/01/2017	\$33.78	\$7.60	\$13.50	\$0.00	\$54.88
	06/01/2018	\$34.62	\$7.60	\$13.50	\$0.00	\$55.72
	12/01/2018	\$35.46	\$7.60	\$13.50	\$0.00	\$56.56
	06/01/2019	\$36.33	\$7.60	\$13.50	\$0.00	\$57.43
	12/01/2019	\$37.19	\$7.60	\$13.50	\$0.00	\$58.29
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	06/01/2017	\$34.90	\$11.50	\$7.10	\$0.00	\$53.50
	12/01/2017	\$35.90	\$11.50	\$7.10	\$0.00	\$54.50
	06/01/2018	\$36.90	\$11.50	\$7.10	\$0.00	\$55.50
	12/01/2018	\$37.90	\$11.50	\$7.10	\$0.00	\$56.50
	06/01/2019	\$38.90	\$11.50	\$7.10	\$0.00	\$57.50
	12/01/2019	\$39.90	\$11.50	\$7.10	\$0.00	\$58.50
	06/01/2020	\$40.90	\$11.50	\$7.10	\$0.00	\$59.50
	12/01/2020	\$41.90	\$11.50	\$7.10	\$0.00	\$60.50
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	06/01/2017	\$33.15	\$7.60	\$13.50	\$0.00	\$54.25
	12/01/2017	\$33.78	\$7.60	\$13.50	\$0.00	\$54.88
	06/01/2018	\$34.62	\$7.60	\$13.50	\$0.00	\$55.72
	12/01/2018	\$35.46	\$7.60	\$13.50	\$0.00	\$56.56
	06/01/2019	\$36.33	\$7.60	\$13.50	\$0.00	\$57.43
	12/01/2019	\$37.19	\$7.60	\$13.50	\$0.00	\$58.29
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2017	\$42.92	\$6.97	\$16.21	\$0.00	\$66.10

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
2	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
3	70	\$30.04	\$6.97	\$11.35	\$0.00	\$48.36
4	75	\$32.19	\$6.97	\$12.16	\$0.00	\$51.32
5	80	\$34.34	\$6.97	\$12.97	\$0.00	\$54.28
6	85	\$36.48	\$6.97	\$13.78	\$0.00	\$57.23
7	90	\$38.63	\$6.97	\$14.59	\$0.00	\$60.19
8	95	\$40.77	\$6.97	\$15.40	\$0.00	\$63.14

Notes:

Apprentice to Journeyworker Ratio:1:5

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (QUINCY)</i>	08/01/2017	\$52.06	\$10.75	\$19.35	\$0.00	\$82.16
	02/01/2018	\$52.74	\$10.75	\$19.35	\$0.00	\$82.84
	08/01/2018	\$54.09	\$10.75	\$19.48	\$0.00	\$84.32
	02/01/2019	\$54.73	\$10.75	\$19.48	\$0.00	\$84.96
	08/01/2019	\$56.08	\$10.75	\$19.62	\$0.00	\$86.45
	02/01/2020	\$56.72	\$10.75	\$19.62	\$0.00	\$87.09
	08/01/2020	\$58.07	\$10.75	\$19.77	\$0.00	\$88.59
	02/01/2021	\$58.71	\$10.75	\$19.77	\$0.00	\$89.23
	08/01/2021	\$60.11	\$10.75	\$19.93	\$0.00	\$90.79
	02/01/2022	\$60.70	\$10.75	\$19.93	\$0.00	\$91.38

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Quincy

Effective Date - 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.03	\$10.75	\$19.35	\$0.00	\$56.13
2	60	\$31.24	\$10.75	\$19.35	\$0.00	\$61.34
3	70	\$36.44	\$10.75	\$19.35	\$0.00	\$66.54
4	80	\$41.65	\$10.75	\$19.35	\$0.00	\$71.75
5	90	\$46.85	\$10.75	\$19.35	\$0.00	\$76.95

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.37	\$10.75	\$19.35	\$0.00	\$56.47
2	60	\$31.64	\$10.75	\$19.35	\$0.00	\$61.74
3	70	\$36.92	\$10.75	\$19.35	\$0.00	\$67.02
4	80	\$42.19	\$10.75	\$19.35	\$0.00	\$72.29
5	90	\$47.47	\$10.75	\$19.35	\$0.00	\$77.57

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
OPERATING ENGINEERS LOCAL 4	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN	12/01/2016	\$37.45	\$7.60	\$14.35	\$0.00	\$59.40
LABORERS - FOUNDATION AND MARINE						
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER	12/01/2016	\$36.30	\$7.60	\$14.35	\$0.00	\$58.25
LABORERS - FOUNDATION AND MARINE						
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN	12/01/2016	\$36.30	\$7.60	\$14.35	\$0.00	\$58.25
LABORERS - FOUNDATION AND MARINE						
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
LABORERS - ZONE 2	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
CARPENTER	09/01/2017	\$39.28	\$9.90	\$17.50	\$0.00	\$66.68
CARPENTERS -ZONE 2 (Eastern Massachusetts)	03/01/2018	\$40.28	\$9.90	\$17.50	\$0.00	\$67.68
	09/01/2018	\$41.32	\$9.90	\$17.50	\$0.00	\$68.72
	03/01/2019	\$42.35	\$9.90	\$17.50	\$0.00	\$69.75

Apprentice - CARPENTER - Zone 2 Eastern MA**Effective Date - 09/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.64	\$9.90	\$1.73	\$0.00	\$31.27
2	60	\$23.57	\$9.90	\$1.73	\$0.00	\$35.20
3	70	\$27.50	\$9.90	\$12.31	\$0.00	\$49.71
4	75	\$29.46	\$9.90	\$12.31	\$0.00	\$51.67
5	80	\$31.42	\$9.90	\$14.04	\$0.00	\$55.36
6	80	\$31.42	\$9.90	\$14.04	\$0.00	\$55.36
7	90	\$35.35	\$9.90	\$15.77	\$0.00	\$61.02
8	90	\$35.35	\$9.90	\$15.77	\$0.00	\$61.02

Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.14	\$9.90	\$1.73	\$0.00	\$31.77
2	60	\$24.17	\$9.90	\$1.73	\$0.00	\$35.80
3	70	\$28.20	\$9.90	\$12.31	\$0.00	\$50.41
4	75	\$30.21	\$9.90	\$12.31	\$0.00	\$52.42
5	80	\$32.22	\$9.90	\$14.04	\$0.00	\$56.16
6	80	\$32.22	\$9.90	\$14.04	\$0.00	\$56.16
7	90	\$36.25	\$9.90	\$15.77	\$0.00	\$61.92
8	90	\$36.25	\$9.90	\$15.77	\$0.00	\$61.92

Notes:**Apprentice to Journeyworker Ratio:1:5**CEMENT MASONRY/PLASTERING
BRICKLAYERS LOCAL 3 (QUINCY)

07/01/2017	\$47.40	\$12.20	\$19.41	\$1.30	\$80.31
01/01/2018	\$48.17	\$12.20	\$19.41	\$1.30	\$81.08
07/01/2018	\$49.56	\$12.20	\$19.41	\$1.30	\$82.47
01/01/2019	\$50.30	\$12.20	\$19.41	\$1.30	\$83.21
07/01/2019	\$51.69	\$12.20	\$19.41	\$1.30	\$84.60
01/01/2020	\$52.44	\$12.20	\$19.41	\$1.30	\$85.35

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Quincy)
Effective Date - 07/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.70	\$12.20	\$12.41	\$0.00	\$48.31
2	60	\$28.44	\$12.20	\$14.41	\$1.30	\$56.35
3	65	\$30.81	\$12.20	\$15.41	\$1.30	\$59.72
4	70	\$33.18	\$12.20	\$16.41	\$1.30	\$63.09
5	75	\$35.55	\$12.20	\$17.41	\$1.30	\$66.46
6	80	\$37.92	\$12.20	\$18.41	\$1.30	\$69.83
7	90	\$42.66	\$12.20	\$19.41	\$1.30	\$75.57

Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.09	\$12.20	\$12.41	\$0.00	\$48.70
2	60	\$28.90	\$12.20	\$14.41	\$1.30	\$56.81
3	65	\$31.31	\$12.20	\$15.41	\$1.30	\$60.22
4	70	\$33.72	\$12.20	\$16.41	\$1.30	\$63.63
5	75	\$36.13	\$12.20	\$17.41	\$1.30	\$67.04
6	80	\$38.54	\$12.20	\$18.41	\$1.30	\$70.45
7	90	\$43.35	\$12.20	\$19.41	\$1.30	\$76.26

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
LABORERS - ZONE 2	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	06/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
OPERATING ENGINEERS LOCAL 4	12/01/2017	\$48.38	\$10.00	\$15.25	\$0.00	\$73.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR	06/01/2017	\$31.86	\$10.00	\$15.25	\$0.00	\$57.11
OPERATING ENGINEERS LOCAL 4	12/01/2017	\$32.55	\$10.00	\$15.25	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE)	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36
PAINTERS LOCAL 35 - ZONE 2						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.71	\$7.85	\$0.00	\$0.00	\$33.56
2	55	\$28.28	\$7.85	\$3.66	\$0.00	\$39.79
3	60	\$30.85	\$7.85	\$3.99	\$0.00	\$42.69
4	65	\$33.42	\$7.85	\$4.32	\$0.00	\$45.59
5	70	\$35.99	\$7.85	\$14.11	\$0.00	\$57.95
6	75	\$38.56	\$7.85	\$14.44	\$0.00	\$60.85
7	80	\$41.13	\$7.85	\$14.77	\$0.00	\$63.75
8	90	\$46.27	\$7.85	\$15.44	\$0.00	\$69.56

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN LABORERS - ZONE 2	06/01/2017	\$37.00	\$7.60	\$14.65	\$0.00	\$59.25
	12/01/2017	\$37.85	\$7.60	\$14.65	\$0.00	\$60.10
	06/01/2018	\$38.80	\$7.60	\$14.65	\$0.00	\$61.05
	12/01/2018	\$39.75	\$7.60	\$14.65	\$0.00	\$62.00
	06/01/2019	\$40.75	\$7.60	\$14.65	\$0.00	\$63.00
	12/01/2019	\$41.75	\$7.60	\$14.65	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	06/01/2017	\$38.00	\$7.60	\$14.65	\$0.00	\$60.25
	12/01/2017	\$38.85	\$7.60	\$14.65	\$0.00	\$61.10
	06/01/2018	\$39.80	\$7.60	\$14.65	\$0.00	\$62.05
	12/01/2018	\$40.75	\$7.60	\$14.65	\$0.00	\$63.00
	06/01/2019	\$41.75	\$7.60	\$14.65	\$0.00	\$64.00
	12/01/2019	\$42.75	\$7.60	\$14.65	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS LABORERS - ZONE 2	06/01/2017	\$37.75	\$7.60	\$14.65	\$0.00	\$60.00
	12/01/2017	\$38.60	\$7.60	\$14.65	\$0.00	\$60.85
	06/01/2018	\$39.55	\$7.60	\$14.65	\$0.00	\$61.80
	12/01/2018	\$40.50	\$7.60	\$14.65	\$0.00	\$62.75
	06/01/2019	\$41.50	\$7.60	\$14.65	\$0.00	\$63.75
	12/01/2019	\$42.50	\$7.60	\$14.65	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	06/01/2017	\$38.00	\$7.60	\$14.65	\$0.00	\$60.25
	12/01/2017	\$38.85	\$7.60	\$14.65	\$0.00	\$61.10
	06/01/2018	\$39.80	\$7.60	\$14.65	\$0.00	\$62.05
	12/01/2018	\$40.75	\$7.60	\$14.65	\$0.00	\$63.00
	06/01/2019	\$41.75	\$7.60	\$14.65	\$0.00	\$64.00
	12/01/2019	\$42.75	\$7.60	\$14.65	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2017	\$37.75	\$7.60	\$14.65	\$0.00	\$60.00
	12/01/2017	\$38.60	\$7.60	\$14.65	\$0.00	\$60.85
	06/01/2018	\$39.55	\$7.60	\$14.65	\$0.00	\$61.80
	12/01/2018	\$40.50	\$7.60	\$14.65	\$0.00	\$62.75
	06/01/2019	\$41.50	\$7.60	\$14.65	\$0.00	\$63.75
	12/01/2019	\$42.50	\$7.60	\$14.65	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	06/01/2017	\$37.00	\$7.60	\$14.65	\$0.00	\$59.25
	12/01/2017	\$37.85	\$7.60	\$14.65	\$0.00	\$60.10
	06/01/2018	\$38.80	\$7.60	\$14.65	\$0.00	\$61.05
	12/01/2018	\$39.75	\$7.60	\$14.65	\$0.00	\$62.00
	06/01/2019	\$40.75	\$7.60	\$14.65	\$0.00	\$63.00
	12/01/2019	\$41.75	\$7.60	\$14.65	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$58.86	\$9.80	\$19.23	\$0.00	\$87.89
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$63.06	\$9.80	\$19.23	\$0.00	\$92.09
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.23	\$9.80	\$19.23	\$0.00	\$117.26
For apprentice rates see "Apprentice- PILE DRIVER"						
ELECTRICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2017	\$39.81	\$9.15	\$11.89	\$0.00	\$60.85
	03/01/2018	\$40.42	\$9.40	\$12.34	\$0.00	\$62.16
	09/01/2018	\$41.03	\$9.65	\$12.74	\$0.00	\$63.42
	03/01/2019	\$41.64	\$9.90	\$13.15	\$0.00	\$64.69
	09/01/2019	\$42.26	\$10.15	\$13.54	\$0.00	\$65.95
	03/01/2020	\$42.87	\$10.40	\$13.94	\$0.00	\$67.21

Classification

**Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate**

Apprentice - *ELECTRICIAN - Local 223*

Effective Date - 09/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.92	\$0.00	\$0.48	\$0.00	\$16.40
2	42	\$16.72	\$0.00	\$0.50	\$0.00	\$17.22
3	45	\$17.91	\$9.15	\$0.54	\$0.00	\$27.60
4	48	\$19.11	\$9.15	\$3.74	\$0.00	\$32.00
5	50	\$19.91	\$9.15	\$3.87	\$0.00	\$32.93
6	55	\$21.90	\$9.15	\$4.16	\$0.00	\$35.21
7	60	\$23.89	\$9.15	\$4.45	\$0.00	\$37.49
8	65	\$25.88	\$9.15	\$4.74	\$0.00	\$39.77
9	70	\$27.87	\$9.15	\$5.03	\$0.00	\$42.05
10	75	\$29.86	\$9.15	\$5.30	\$0.00	\$44.31

Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.17	\$0.00	\$0.49	\$0.00	\$16.66
2	42	\$16.98	\$0.00	\$0.51	\$0.00	\$17.49
3	45	\$18.19	\$9.40	\$0.55	\$0.00	\$28.14
4	48	\$19.40	\$9.40	\$4.00	\$0.00	\$32.80
5	50	\$20.21	\$9.40	\$4.30	\$0.00	\$33.91
6	55	\$22.23	\$9.40	\$4.45	\$0.00	\$36.08
7	60	\$24.25	\$9.40	\$4.74	\$0.00	\$38.39
8	65	\$26.27	\$9.40	\$5.04	\$0.00	\$40.71
9	70	\$28.29	\$9.40	\$5.33	\$0.00	\$43.02
10	75	\$30.32	\$9.40	\$5.62	\$0.00	\$45.34

Notes:

Steps are 750 hours

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR	01/01/2017	\$55.86	\$15.28	\$15.71	\$0.00	\$86.85
ELEVATOR CONSTRUCTORS LOCAL 4						

Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.93	\$15.28	\$0.00	\$0.00	\$43.21
2	55	\$30.72	\$15.28	\$15.71	\$0.00	\$61.71
3	65	\$36.31	\$15.28	\$15.71	\$0.00	\$67.30
4	70	\$39.10	\$15.28	\$15.71	\$0.00	\$70.09
5	80	\$44.69	\$15.28	\$15.71	\$0.00	\$75.68

Notes:

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2017	\$39.10	\$15.28	\$15.71	\$0.00	\$70.09
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"						
FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2017	\$42.88	\$10.00	\$15.25	\$0.00	\$68.13
	05/01/2018	\$43.59	\$10.00	\$15.25	\$0.00	\$68.84
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2017	\$44.34	\$10.00	\$15.25	\$0.00	\$69.59
	05/01/2018	\$45.06	\$10.00	\$15.25	\$0.00	\$70.31
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2017	\$22.83	\$10.00	\$15.25	\$0.00	\$48.08
	05/01/2018	\$23.26	\$10.00	\$15.25	\$0.00	\$48.51
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 223</i>	09/01/2017	\$39.81	\$9.15	\$11.89	\$0.00	\$60.85
	03/01/2018	\$40.42	\$9.40	\$12.34	\$0.00	\$62.16
	09/01/2018	\$41.03	\$9.65	\$12.74	\$0.00	\$63.42
	03/01/2019	\$41.64	\$9.90	\$13.15	\$0.00	\$64.69
	09/01/2019	\$42.26	\$10.15	\$13.54	\$0.00	\$65.95
	03/01/2020	\$42.87	\$10.40	\$13.94	\$0.00	\$67.21
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS LOCAL 223</i>	09/01/2017	\$33.78	\$9.15	\$10.12	\$0.00	\$53.05
	03/01/2018	\$34.27	\$9.40	\$10.46	\$0.00	\$54.13
	09/01/2018	\$34.76	\$9.65	\$10.81	\$0.00	\$55.22
	03/01/2019	\$35.25	\$9.90	\$11.14	\$0.00	\$56.29
	09/01/2019	\$35.78	\$10.15	\$11.45	\$0.00	\$57.38
	03/01/2020	\$36.27	\$10.40	\$11.78	\$0.00	\$58.45
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$38.49	\$10.00	\$15.25	\$0.00	\$63.74
	12/01/2017	\$39.32	\$10.00	\$15.25	\$0.00	\$64.57
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 2</i>	06/01/2017	\$20.50	\$7.60	\$13.50	\$0.00	\$41.60
	12/01/2017	\$21.50	\$7.60	\$13.50	\$0.00	\$42.60
	06/01/2018	\$21.50	\$7.60	\$13.50	\$0.00	\$42.60
	12/01/2018	\$22.50	\$7.60	\$13.50	\$0.00	\$43.60
	06/01/2019	\$22.50	\$7.60	\$13.50	\$0.00	\$43.60
	12/01/2019	\$23.50	\$7.60	\$13.50	\$0.00	\$44.60
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE I</i>	03/01/2016	\$42.13	\$9.80	\$17.62	\$0.00	\$69.55

Apprentice - FLOORCOVERER - Local 2168 Zone I

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.07	\$9.80	\$1.79	\$0.00	\$32.66
2	55	\$23.17	\$9.80	\$1.79	\$0.00	\$34.76
3	60	\$25.28	\$9.80	\$12.25	\$0.00	\$47.33
4	65	\$27.38	\$9.80	\$12.25	\$0.00	\$49.43
5	70	\$29.49	\$9.80	\$14.04	\$0.00	\$53.33
6	75	\$31.60	\$9.80	\$14.04	\$0.00	\$55.44
7	80	\$33.70	\$9.80	\$15.83	\$0.00	\$59.33
8	85	\$35.81	\$9.80	\$15.83	\$0.00	\$61.44

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$31.86	\$10.00	\$15.25	\$0.00	\$57.11
	12/01/2017	\$32.55	\$10.00	\$15.25	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.46	\$7.85	\$0.00	\$0.00	\$28.31
2	55	\$22.50	\$7.85	\$3.66	\$0.00	\$34.01
3	60	\$24.55	\$7.85	\$3.99	\$0.00	\$36.39
4	65	\$26.59	\$7.85	\$4.32	\$0.00	\$38.76
5	70	\$28.64	\$7.85	\$14.11	\$0.00	\$50.60
6	75	\$30.68	\$7.85	\$14.44	\$0.00	\$52.97
7	80	\$32.73	\$7.85	\$14.77	\$0.00	\$55.35
8	90	\$36.82	\$7.85	\$15.44	\$0.00	\$60.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
OPERATING ENGINEERS LOCAL 4	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 06/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$25.51	\$10.00	\$0.00	\$0.00	\$35.51
2	60	\$27.83	\$10.00	\$15.25	\$0.00	\$53.08
3	65	\$30.15	\$10.00	\$15.25	\$0.00	\$55.40
4	70	\$32.47	\$10.00	\$15.25	\$0.00	\$57.72
5	75	\$34.79	\$10.00	\$15.25	\$0.00	\$60.04
6	80	\$37.10	\$10.00	\$15.25	\$0.00	\$62.35
7	85	\$39.42	\$10.00	\$15.25	\$0.00	\$64.67
8	90	\$41.74	\$10.00	\$15.25	\$0.00	\$66.99

Effective Date - 12/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$26.06	\$10.00	\$0.00	\$0.00	\$36.06
2	60	\$28.43	\$10.00	\$15.25	\$0.00	\$53.68
3	65	\$30.80	\$10.00	\$15.25	\$0.00	\$56.05
4	70	\$33.17	\$10.00	\$15.25	\$0.00	\$58.42
5	75	\$35.54	\$10.00	\$15.25	\$0.00	\$60.79
6	80	\$37.90	\$10.00	\$15.25	\$0.00	\$63.15
7	85	\$40.27	\$10.00	\$15.25	\$0.00	\$65.52
8	90	\$42.64	\$10.00	\$15.25	\$0.00	\$67.89

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2017	\$43.83	\$11.45	\$24.03	\$2.38	\$81.69
	02/01/2018	\$44.98	\$11.45	\$24.03	\$2.38	\$82.84
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 223</i>	09/01/2017	\$39.81	\$9.15	\$11.89	\$0.00	\$60.85
	03/01/2018	\$40.42	\$9.40	\$12.34	\$0.00	\$62.16
	09/01/2018	\$41.03	\$9.65	\$12.74	\$0.00	\$63.42
	03/01/2019	\$41.64	\$9.90	\$13.15	\$0.00	\$64.69
	09/01/2019	\$42.26	\$10.15	\$13.54	\$0.00	\$65.95
	03/01/2020	\$42.87	\$10.40	\$13.94	\$0.00	\$67.21
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2017	\$43.83	\$11.45	\$24.03	\$2.38	\$81.69
	02/01/2018	\$44.98	\$11.45	\$24.03	\$2.38	\$82.84
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	09/01/2017	\$40.69	\$10.00	\$17.60	\$0.00	\$68.29
	09/01/2018	\$42.69	\$10.00	\$17.60	\$0.00	\$70.29
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	09/01/2017	\$40.69	\$10.00	\$17.60	\$0.00	\$68.29
	09/01/2018	\$42.69	\$10.00	\$17.60	\$0.00	\$70.29
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	06/01/2017	\$33.15	\$7.60	\$13.50	\$0.00	\$54.25
	12/01/2017	\$33.78	\$7.60	\$13.50	\$0.00	\$54.88
	06/01/2018	\$34.62	\$7.60	\$13.50	\$0.00	\$55.72
	12/01/2018	\$35.46	\$7.60	\$13.50	\$0.00	\$56.56
	06/01/2019	\$36.33	\$7.60	\$13.50	\$0.00	\$57.43
	12/01/2019	\$37.19	\$7.60	\$13.50	\$0.00	\$58.29
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2017	\$47.09	\$11.75	\$14.20	\$0.00	\$73.04
	09/01/2018	\$49.34	\$11.75	\$14.20	\$0.00	\$75.29
	09/01/2019	\$51.84	\$11.75	\$14.20	\$0.00	\$77.79

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

Effective Date - 09/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.55	\$11.75	\$10.45	\$0.00	\$45.75
2	60	\$28.25	\$11.75	\$11.20	\$0.00	\$51.20
3	70	\$32.96	\$11.75	\$11.95	\$0.00	\$56.66
4	80	\$37.67	\$11.75	\$12.70	\$0.00	\$62.12

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.67	\$11.75	\$10.45	\$0.00	\$46.87
2	60	\$29.60	\$11.75	\$11.20	\$0.00	\$52.55
3	70	\$34.54	\$11.75	\$11.95	\$0.00	\$58.24
4	80	\$39.47	\$11.75	\$12.70	\$0.00	\$63.92

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	03/16/2017	\$44.65	\$7.80	\$20.85	\$0.00	\$73.30
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Classification

**Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate**

Apprentice - IRONWORKER - Local 7 Boston

Effective Date - 03/16/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$26.79	\$7.80	\$20.85	\$0.00	\$55.44
2	70	\$31.26	\$7.80	\$20.85	\$0.00	\$59.91
3	75	\$33.49	\$7.80	\$20.85	\$0.00	\$62.14
4	80	\$35.72	\$7.80	\$20.85	\$0.00	\$64.37
5	85	\$37.95	\$7.80	\$20.85	\$0.00	\$66.60
6	90	\$40.19	\$7.80	\$20.85	\$0.00	\$68.84

Notes:

** Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:**

JACKHAMMER & PAVING BREAKER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
LABORER <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.40	\$7.60	\$13.50	\$0.00	\$53.50
	12/01/2017	\$33.03	\$7.60	\$13.50	\$0.00	\$54.13
	06/01/2018	\$33.87	\$7.60	\$13.50	\$0.00	\$54.97
	12/01/2018	\$34.71	\$7.60	\$13.50	\$0.00	\$55.81
	06/01/2019	\$35.58	\$7.60	\$13.50	\$0.00	\$56.68
	12/01/2019	\$36.44	\$7.60	\$13.50	\$0.00	\$57.54

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - LABORER - Zone 2

Effective Date - 06/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.44	\$7.60	\$13.50	\$0.00	\$40.54
2	70	\$22.68	\$7.60	\$13.50	\$0.00	\$43.78
3	80	\$25.92	\$7.60	\$13.50	\$0.00	\$47.02
4	90	\$29.16	\$7.60	\$13.50	\$0.00	\$50.26

Effective Date - 12/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.82	\$7.60	\$13.50	\$0.00	\$40.92
2	70	\$23.12	\$7.60	\$13.50	\$0.00	\$44.22
3	80	\$26.42	\$7.60	\$13.50	\$0.00	\$47.52
4	90	\$29.73	\$7.60	\$13.50	\$0.00	\$50.83

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER	06/01/2017	\$32.40	\$7.60	\$13.50	\$0.00	\$53.50
LABORERS - ZONE 2	12/01/2017	\$33.03	\$7.60	\$13.50	\$0.00	\$54.13
	06/01/2018	\$33.87	\$7.60	\$13.50	\$0.00	\$54.97
	12/01/2018	\$34.71	\$7.60	\$13.50	\$0.00	\$55.81
	06/01/2019	\$35.58	\$7.60	\$13.50	\$0.00	\$56.68
	12/01/2019	\$36.44	\$7.60	\$13.50	\$0.00	\$57.54

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER	06/01/2017	\$32.40	\$7.60	\$13.50	\$0.00	\$53.50
LABORERS - ZONE 2	12/01/2017	\$33.03	\$7.60	\$13.50	\$0.00	\$54.13
	06/01/2018	\$33.87	\$7.60	\$13.50	\$0.00	\$54.97
	12/01/2018	\$34.71	\$7.60	\$13.50	\$0.00	\$55.81
	06/01/2019	\$35.58	\$7.60	\$13.50	\$0.00	\$56.68
	12/01/2019	\$36.44	\$7.60	\$13.50	\$0.00	\$57.54

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER	06/01/2017	\$32.60	\$7.60	\$13.45	\$0.00	\$53.65
LABORERS - ZONE 2	12/01/2017	\$33.23	\$7.60	\$13.45	\$0.00	\$54.28
	06/01/2018	\$34.07	\$7.60	\$13.45	\$0.00	\$55.12
	12/01/2018	\$34.91	\$7.60	\$13.45	\$0.00	\$55.96
	06/01/2019	\$35.78	\$7.60	\$13.45	\$0.00	\$56.83
	12/01/2019	\$36.64	\$7.60	\$13.45	\$0.00	\$57.69

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
	For apprentice rates see "Apprentice- LABORER"					
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.40	\$7.60	\$13.50	\$0.00	\$53.50
	12/01/2017	\$33.03	\$7.60	\$13.50	\$0.00	\$54.13
	06/01/2018	\$33.87	\$7.60	\$13.50	\$0.00	\$54.97
	12/01/2018	\$34.71	\$7.60	\$13.50	\$0.00	\$55.81
	06/01/2019	\$35.58	\$7.60	\$13.50	\$0.00	\$56.68
	12/01/2019	\$36.44	\$7.60	\$13.50	\$0.00	\$57.54
	For apprentice rates see "Apprentice- LABORER"					
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.40	\$7.60	\$13.50	\$0.00	\$53.50
	12/01/2017	\$33.03	\$7.60	\$13.50	\$0.00	\$54.13
	06/01/2018	\$33.87	\$7.60	\$13.50	\$0.00	\$54.97
	12/01/2018	\$34.71	\$7.60	\$13.50	\$0.00	\$55.81
	06/01/2019	\$35.58	\$7.60	\$13.50	\$0.00	\$56.68
	12/01/2019	\$36.44	\$7.60	\$13.50	\$0.00	\$57.54
	This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"					
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
	For apprentice rates see "Apprentice- LABORER"					
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2017	\$39.82	\$10.75	\$17.80	\$0.00	\$68.37
	02/01/2018	\$40.36	\$10.75	\$17.80	\$0.00	\$68.91
	08/01/2018	\$41.44	\$10.75	\$17.93	\$0.00	\$70.12
	02/01/2019	\$41.95	\$10.75	\$17.93	\$0.00	\$70.63
	08/01/2019	\$43.03	\$10.75	\$18.07	\$0.00	\$71.85
	02/01/2020	\$43.54	\$10.75	\$18.07	\$0.00	\$72.36
	08/01/2020	\$44.62	\$10.75	\$18.22	\$0.00	\$73.59
	02/01/2021	\$45.13	\$10.75	\$18.22	\$0.00	\$74.10
	08/01/2021	\$46.25	\$10.75	\$18.38	\$0.00	\$75.38
	02/01/2022	\$46.72	\$10.75	\$18.38	\$0.00	\$75.85

Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile**Effective Date -** 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.91	\$10.75	\$17.80	\$0.00	\$48.46
2	60	\$23.89	\$10.75	\$17.80	\$0.00	\$52.44
3	70	\$27.87	\$10.75	\$17.80	\$0.00	\$56.42
4	80	\$31.86	\$10.75	\$17.80	\$0.00	\$60.41
5	90	\$35.84	\$10.75	\$17.80	\$0.00	\$64.39

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.18	\$10.75	\$17.80	\$0.00	\$48.73
2	60	\$24.22	\$10.75	\$17.80	\$0.00	\$52.77
3	70	\$28.25	\$10.75	\$17.80	\$0.00	\$56.80
4	80	\$32.29	\$10.75	\$17.80	\$0.00	\$60.84
5	90	\$36.32	\$10.75	\$17.80	\$0.00	\$64.87

Notes:**Apprentice to Journeyworker Ratio:1:3**

MARBLE MASONS, TILELAYERS & TERRAZZO MECH

BRICKLAYERS LOCAL 3 - MARBLE & TILE

08/01/2017	\$52.10	\$10.75	\$19.35	\$0.00	\$82.20
02/01/2018	\$52.78	\$10.75	\$19.35	\$0.00	\$82.88
08/01/2018	\$54.13	\$10.75	\$19.48	\$0.00	\$84.36
02/01/2019	\$54.75	\$10.75	\$19.48	\$0.00	\$84.98
08/01/2019	\$56.10	\$10.75	\$19.62	\$0.00	\$86.47
02/01/2020	\$56.73	\$10.75	\$19.62	\$0.00	\$87.10
08/01/2020	\$58.08	\$10.75	\$19.77	\$0.00	\$88.60
02/01/2021	\$58.72	\$10.75	\$19.77	\$0.00	\$89.24
08/01/2021	\$60.12	\$10.75	\$19.93	\$0.00	\$90.80
02/01/2022	\$60.69	\$10.75	\$19.93	\$0.00	\$91.37

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile
Effective Date - 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.05	\$10.75	\$19.35	\$0.00	\$56.15
2	60	\$31.26	\$10.75	\$19.35	\$0.00	\$61.36
3	70	\$36.47	\$10.75	\$19.35	\$0.00	\$66.57
4	80	\$41.68	\$10.75	\$19.35	\$0.00	\$71.78
5	90	\$46.89	\$10.75	\$19.35	\$0.00	\$76.99

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.39	\$10.75	\$19.35	\$0.00	\$56.49
2	60	\$31.67	\$10.75	\$19.35	\$0.00	\$61.77
3	70	\$36.95	\$10.75	\$19.35	\$0.00	\$67.05
4	80	\$42.22	\$10.75	\$19.35	\$0.00	\$72.32
5	90	\$47.50	\$10.75	\$19.35	\$0.00	\$77.60

Notes:
Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES)	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
OPERATING ENGINEERS LOCAL 4	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANICS MAINTENANCE	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
OPERATING ENGINEERS LOCAL 4	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 2)	10/01/2017	\$36.32	\$9.90	\$18.50	\$0.00	\$64.72
MILLWRIGHTS LOCAL 1121 - Zone 2	04/01/2018	\$37.17	\$9.90	\$18.50	\$0.00	\$65.57
	10/01/2018	\$38.02	\$9.90	\$18.50	\$0.00	\$66.42
	04/01/2019	\$38.87	\$9.90	\$18.50	\$0.00	\$67.27

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MILLWRIGHT - Local 1121 Zone 2

Effective Date - 10/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	\$0.00	\$9.90	\$5.31	\$21.74	\$36.95
2	0	\$0.00	\$9.90	\$15.13	\$25.69	\$50.72
3	0	\$0.00	\$9.90	\$16.10	\$29.64	\$55.64
4	0	\$0.00	\$9.90	\$17.06	\$33.59	\$60.55

Effective Date - 04/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	\$0.00	\$9.90	\$5.31	\$22.23	\$37.44
2	0	\$0.00	\$9.90	\$15.13	\$26.27	\$51.30
3	0	\$0.00	\$9.90	\$16.10	\$30.32	\$56.32
4	0	\$0.00	\$9.90	\$17.06	\$34.36	\$61.32

Notes: Apprentice Wages same as set in Zone 1
Base Wage shown in "Supplemental Unemployment" column
Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER LABORERS - ZONE 2	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2017	\$23.47	\$10.00	\$15.25	\$0.00	\$48.72
	12/01/2017	\$23.99	\$10.00	\$15.25	\$0.00	\$49.24
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2017	\$27.54	\$10.00	\$15.25	\$0.00	\$52.79
	12/01/2017	\$28.15	\$10.00	\$15.25	\$0.00	\$53.40
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 - ZONE 2	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Apprentice - PAINTER Local 35 - BRIDGES/TANKS**Effective Date -** 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.71	\$7.85	\$0.00	\$0.00	\$33.56
2	55	\$28.28	\$7.85	\$3.66	\$0.00	\$39.79
3	60	\$30.85	\$7.85	\$3.99	\$0.00	\$42.69
4	65	\$33.42	\$7.85	\$4.32	\$0.00	\$45.59
5	70	\$35.99	\$7.85	\$14.11	\$0.00	\$57.95
6	75	\$38.56	\$7.85	\$14.44	\$0.00	\$60.85
7	80	\$41.13	\$7.85	\$14.77	\$0.00	\$63.75
8	90	\$46.27	\$7.85	\$15.44	\$0.00	\$69.56

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *

01/01/2017

\$42.31

\$7.85

\$16.10

\$0.00

\$66.26

* If 30% or more of surfaces to be painted are new construction,

NEW paint rate shall be used. *PAINTERS LOCAL 35 - ZONE 2***Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New****Effective Date -** 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.16	\$7.85	\$0.00	\$0.00	\$29.01
2	55	\$23.27	\$7.85	\$3.66	\$0.00	\$34.78
3	60	\$25.39	\$7.85	\$3.99	\$0.00	\$37.23
4	65	\$27.50	\$7.85	\$4.32	\$0.00	\$39.67
5	70	\$29.62	\$7.85	\$14.11	\$0.00	\$51.58
6	75	\$31.73	\$7.85	\$14.44	\$0.00	\$54.02
7	80	\$33.85	\$7.85	\$14.77	\$0.00	\$56.47
8	90	\$38.08	\$7.85	\$15.44	\$0.00	\$61.37

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)

01/01/2017

\$40.37

\$7.85

\$16.10

\$0.00

\$64.32

PAINTERS LOCAL 35 - ZONE 2

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint
Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.19	\$7.85	\$0.00	\$0.00	\$28.04
2	55	\$22.20	\$7.85	\$3.66	\$0.00	\$33.71
3	60	\$24.22	\$7.85	\$3.99	\$0.00	\$36.06
4	65	\$26.24	\$7.85	\$4.32	\$0.00	\$38.41
5	70	\$28.26	\$7.85	\$14.11	\$0.00	\$50.22
6	75	\$30.28	\$7.85	\$14.44	\$0.00	\$52.57
7	80	\$32.30	\$7.85	\$14.77	\$0.00	\$54.92
8	90	\$36.33	\$7.85	\$15.44	\$0.00	\$59.62

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (TRAFFIC MARKINGS)	06/01/2017	\$32.40	\$7.60	\$13.50	\$0.00	\$53.50
LABORERS - ZONE 2	12/01/2017	\$33.03	\$7.60	\$13.50	\$0.00	\$54.13
	06/01/2018	\$33.87	\$7.60	\$13.50	\$0.00	\$54.97
	12/01/2018	\$34.71	\$7.60	\$13.50	\$0.00	\$55.81
	06/01/2019	\$35.58	\$7.60	\$13.50	\$0.00	\$56.68
	12/01/2019	\$36.44	\$7.60	\$13.50	\$0.00	\$57.54

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86
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* If 30% or more of surfaces to be painted are new construction,
NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW
Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.46	\$7.85	\$0.00	\$0.00	\$28.31
2	55	\$22.50	\$7.85	\$3.66	\$0.00	\$34.01
3	60	\$24.55	\$7.85	\$3.99	\$0.00	\$36.39
4	65	\$26.59	\$7.85	\$4.32	\$0.00	\$38.76
5	70	\$28.64	\$7.85	\$14.11	\$0.00	\$50.60
6	75	\$30.68	\$7.85	\$14.44	\$0.00	\$52.97
7	80	\$32.73	\$7.85	\$14.77	\$0.00	\$55.35
8	90	\$36.82	\$7.85	\$15.44	\$0.00	\$60.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2017	\$38.97	\$7.85	\$16.10	\$0.00	\$62.92
PAINTERS LOCAL 35 - ZONE 2						

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT
Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.49	\$7.85	\$0.00	\$0.00	\$27.34
2	55	\$21.43	\$7.85	\$3.66	\$0.00	\$32.94
3	60	\$23.38	\$7.85	\$3.99	\$0.00	\$35.22
4	65	\$25.33	\$7.85	\$4.32	\$0.00	\$37.50
5	70	\$27.28	\$7.85	\$14.11	\$0.00	\$49.24
6	75	\$29.23	\$7.85	\$14.44	\$0.00	\$51.52
7	80	\$31.18	\$7.85	\$14.77	\$0.00	\$53.80
8	90	\$35.07	\$7.85	\$15.44	\$0.00	\$58.36

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2012	\$30.28	\$9.07	\$8.00	\$0.00	\$47.35
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PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) PILE DRIVER LOCAL 56 (ZONE 1) For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
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PILE DRIVER PILE DRIVER LOCAL 56 (ZONE 1)	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
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Apprentice - PILE DRIVER - Local 56 Zone 1
Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.02	\$9.80	\$19.23	\$0.00	\$50.05
2	60	\$25.22	\$9.80	\$19.23	\$0.00	\$54.25
3	70	\$29.43	\$9.80	\$19.23	\$0.00	\$58.46
4	75	\$31.53	\$9.80	\$19.23	\$0.00	\$60.56
5	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
6	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
7	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87
8	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87

Notes:
Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIPELAYER <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
PLUMBER & PIPEFITTER <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	09/01/2017	\$40.69	\$10.00	\$17.60	\$0.00	\$68.29
	09/01/2018	\$42.69	\$10.00	\$17.60	\$0.00	\$70.29

Apprentice - PLUMBER/PIPEFITTER - Local 51

Effective Date - 09/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.28	\$10.00	\$2.50	\$0.00	\$28.78
2	50	\$20.35	\$10.00	\$2.50	\$0.00	\$32.85
3	60	\$24.41	\$10.00	\$7.60	\$0.00	\$42.01
4	70	\$28.48	\$10.00	\$12.16	\$0.00	\$50.64
5	80	\$32.55	\$10.00	\$15.70	\$0.00	\$58.25

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.08	\$10.00	\$2.50	\$0.00	\$29.58
2	50	\$21.35	\$10.00	\$2.50	\$0.00	\$33.85
3	60	\$25.61	\$10.00	\$7.60	\$0.00	\$43.21
4	70	\$29.88	\$10.00	\$12.16	\$0.00	\$52.04
5	80	\$34.15	\$10.00	\$15.70	\$0.00	\$59.85

Notes:

Steps 2000hrs. Prior 9/1/05; 40/40/45/50/55/60/65/75/80/85

Apprentice to Journeyworker Ratio:1:3

PNEUMATIC CONTROLS (TEMP.) <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	09/01/2017	\$40.69	\$10.00	\$17.60	\$0.00	\$68.29
	09/01/2018	\$42.69	\$10.00	\$17.60	\$0.00	\$70.29
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	06/01/2017	\$33.40	\$7.60	\$13.50	\$0.00	\$54.50
	12/01/2017	\$34.03	\$7.60	\$13.50	\$0.00	\$55.13
	06/01/2018	\$34.87	\$7.60	\$13.50	\$0.00	\$55.97
	12/01/2018	\$35.71	\$7.60	\$13.50	\$0.00	\$56.81
	06/01/2019	\$36.58	\$7.60	\$13.50	\$0.00	\$57.68
	12/01/2019	\$37.44	\$7.60	\$13.50	\$0.00	\$58.54
For apprentice rates see "Apprentice- LABORER"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$31.86	\$10.00	\$15.25	\$0.00	\$57.11
	12/01/2017	\$32.55	\$10.00	\$15.25	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 653</i>	08/01/2008	\$19.76	\$7.16	\$4.21	\$0.00	\$31.13
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RESIDENTIAL WOOD FRAME (All Other Work) <i>CARPENTERS -ZONE 2 (Residential Wood)</i>	06/01/2016	\$25.32	\$9.80	\$16.82	\$0.00	\$51.94
RESIDENTIAL WOOD FRAME CARPENTER ** ** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement. <i>CARPENTERS -ZONE 2 (Residential Wood)</i>	10/01/2017	\$26.93	\$7.07	\$7.18	\$0.00	\$41.18
	04/01/2018	\$27.35	\$7.07	\$7.18	\$0.00	\$41.60
	10/01/2018	\$27.77	\$7.07	\$7.18	\$0.00	\$42.02
	04/01/2019	\$28.20	\$7.07	\$7.18	\$0.00	\$42.45
	10/01/2019	\$28.63	\$7.07	\$7.18	\$0.00	\$42.88
As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.						

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CARPENTER (Residential Wood Frame) - Zone 2
Effective Date - 10/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.16	\$7.07	\$0.00	\$0.00	\$23.23
2	60	\$16.16	\$7.07	\$0.00	\$0.00	\$23.23
3	65	\$17.50	\$7.07	\$7.18	\$0.00	\$31.75
4	70	\$18.85	\$7.07	\$7.18	\$0.00	\$33.10
5	75	\$20.20	\$7.07	\$7.18	\$0.00	\$34.45
6	80	\$21.54	\$7.07	\$7.18	\$0.00	\$35.79
7	85	\$22.89	\$7.07	\$7.18	\$0.00	\$37.14
8	90	\$24.24	\$7.07	\$7.18	\$0.00	\$38.49

Effective Date - 04/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.41	\$7.07	\$0.00	\$0.00	\$23.48
2	60	\$16.41	\$7.07	\$0.00	\$0.00	\$23.48
3	65	\$17.78	\$7.07	\$7.18	\$0.00	\$32.03
4	70	\$19.15	\$7.07	\$7.18	\$0.00	\$33.40
5	75	\$20.51	\$7.07	\$7.18	\$0.00	\$34.76
6	80	\$21.88	\$7.07	\$7.18	\$0.00	\$36.13
7	85	\$23.25	\$7.07	\$7.18	\$0.00	\$37.50
8	90	\$24.62	\$7.07	\$7.18	\$0.00	\$38.87

Notes:
Apprentice to Journeyworker Ratio:1:5
RIDE-ON MOTORIZED BUGGY OPERATOR
LABORERS - ZONE 2

06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

ROLLER/SPREADER/MULCHING MACHINE
OPERATING ENGINEERS LOCAL 4

06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofers Waterproofing &Roofers Damproofg)
ROOFERS LOCAL 33

08/01/2017	\$41.36	\$11.20	\$14.80	\$0.00	\$67.36
02/01/2018	\$42.51	\$11.20	\$14.80	\$0.00	\$68.51
08/01/2018	\$43.61	\$11.20	\$14.80	\$0.00	\$69.61
02/01/2019	\$44.76	\$11.20	\$14.80	\$0.00	\$70.76

Classification

Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate

Apprentice - ROOFER - Local 33
Effective Date - 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.68	\$11.20	\$3.44	\$0.00	\$35.32
2	60	\$24.82	\$11.20	\$14.80	\$0.00	\$50.82
3	65	\$26.88	\$11.20	\$14.80	\$0.00	\$52.88
4	75	\$31.02	\$11.20	\$14.80	\$0.00	\$57.02
5	85	\$35.16	\$11.20	\$14.80	\$0.00	\$61.16

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.26	\$11.20	\$3.44	\$0.00	\$35.90
2	60	\$25.51	\$11.20	\$14.80	\$0.00	\$51.51
3	65	\$27.63	\$11.20	\$14.80	\$0.00	\$53.63
4	75	\$31.88	\$11.20	\$14.80	\$0.00	\$57.88
5	85	\$36.13	\$11.20	\$14.80	\$0.00	\$62.13

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.
(Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE	08/01/2017	\$41.61	\$11.20	\$14.80	\$0.00	\$67.61
ROOFERS LOCAL 33	02/01/2018	\$42.76	\$11.20	\$14.80	\$0.00	\$68.76
	08/01/2018	\$43.86	\$11.20	\$14.80	\$0.00	\$69.86
	02/01/2019	\$45.01	\$11.20	\$14.80	\$0.00	\$71.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER	08/01/2017	\$43.83	\$11.45	\$24.03	\$2.38	\$81.69
SHEETMETAL WORKERS LOCAL 17 - A	02/01/2018	\$44.98	\$11.45	\$24.03	\$2.38	\$82.84

Classification

Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 17-A
Effective Date - 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.53	\$11.45	\$5.61	\$0.00	\$34.59
2	40	\$17.53	\$11.45	\$5.61	\$0.00	\$34.59
3	45	\$19.72	\$11.45	\$10.76	\$1.26	\$43.19
4	45	\$19.72	\$11.45	\$10.76	\$1.26	\$43.19
5	50	\$21.92	\$11.45	\$11.71	\$1.35	\$46.43
6	50	\$21.92	\$11.45	\$11.96	\$1.36	\$46.69
7	60	\$26.30	\$11.45	\$13.61	\$1.54	\$52.90
8	65	\$28.49	\$11.45	\$14.56	\$1.64	\$56.14
9	75	\$32.87	\$11.45	\$16.47	\$1.82	\$62.61
10	85	\$37.26	\$11.45	\$17.87	\$2.00	\$68.58

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.99	\$11.45	\$5.24	\$0.00	\$34.68
2	40	\$17.99	\$11.45	\$5.24	\$0.00	\$34.68
3	45	\$20.24	\$11.45	\$10.31	\$1.27	\$43.27
4	45	\$20.24	\$11.45	\$10.31	\$1.27	\$43.27
5	50	\$22.49	\$11.45	\$11.21	\$1.37	\$46.52
6	50	\$22.49	\$11.45	\$11.46	\$1.38	\$46.78
7	60	\$26.99	\$11.45	\$13.02	\$1.56	\$53.02
8	65	\$29.24	\$11.45	\$13.93	\$1.67	\$56.29
9	75	\$33.74	\$11.45	\$15.74	\$1.85	\$62.78
10	85	\$38.23	\$11.45	\$17.05	\$2.03	\$68.76

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4
SIGN ERECTOR
PAINTERS LOCAL 35 - ZONE 2

06/01/2013 \$25.81 \$7.07 \$7.05 \$0.00 \$39.93

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - SIGN ERECTOR - Local 35 Zone 2
Effective Date - 06/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

Notes:

Steps are 4 mos.

Apprentice to Journeyworker Ratio:1:1

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
SPECIALIZED EARTH MOVING EQUIP > 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2016	\$32.73	\$10.91	\$10.89	\$0.00	\$54.53
SPRINKLER FITTER SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1	10/01/2017	\$57.58	\$8.77	\$17.20	\$0.00	\$83.55
	01/01/2018	\$57.58	\$9.12	\$17.40	\$0.00	\$84.10
	03/01/2018	\$59.08	\$9.12	\$17.40	\$0.00	\$85.60
	10/01/2018	\$60.58	\$9.12	\$17.40	\$0.00	\$87.10
	01/01/2019	\$60.58	\$9.47	\$17.60	\$0.00	\$87.65
	03/01/2019	\$62.08	\$9.47	\$17.60	\$0.00	\$89.15
	10/01/2019	\$63.58	\$9.47	\$17.60	\$0.00	\$90.65
	03/01/2020	\$65.08	\$9.47	\$17.60	\$0.00	\$92.15
	10/01/2020	\$66.58	\$9.47	\$17.60	\$0.00	\$93.65
	03/01/2021	\$68.08	\$9.47	\$17.60	\$0.00	\$95.15

Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1**Effective Date -** 10/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$20.15	\$8.77	\$8.70	\$0.00	\$37.62
2	40	\$23.03	\$8.77	\$8.70	\$0.00	\$40.50
3	45	\$25.91	\$8.77	\$8.70	\$0.00	\$43.38
4	50	\$28.79	\$8.77	\$8.70	\$0.00	\$46.26
5	55	\$31.67	\$8.77	\$8.70	\$0.00	\$49.14
6	60	\$34.55	\$8.77	\$10.20	\$0.00	\$53.52
7	65	\$37.43	\$8.77	\$10.20	\$0.00	\$56.40
8	70	\$40.31	\$8.77	\$10.20	\$0.00	\$59.28
9	75	\$43.19	\$8.77	\$10.20	\$0.00	\$62.16
10	80	\$46.06	\$877.00	\$10.20	\$0.00	\$933.26

Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$20.15	\$9.12	\$8.90	\$0.00	\$38.17
2	40	\$23.03	\$9.12	\$8.90	\$0.00	\$41.05
3	45	\$25.91	\$9.12	\$8.90	\$0.00	\$43.93
4	50	\$28.79	\$9.12	\$8.90	\$0.00	\$46.81
5	55	\$31.67	\$9.12	\$8.90	\$0.00	\$49.69
6	60	\$34.55	\$9.12	\$10.40	\$0.00	\$54.07
7	65	\$37.43	\$9.12	\$10.40	\$0.00	\$56.95
8	70	\$40.31	\$9.12	\$10.40	\$0.00	\$59.83
9	75	\$43.19	\$9.12	\$10.40	\$0.00	\$62.71
10	80	\$46.06	\$9.12	\$10.40	\$0.00	\$65.58

Notes: Apprentice entered prior 9/30/10:
40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2017	\$33.78	\$9.15	\$10.12	\$0.00	\$53.05
	03/01/2018	\$34.27	\$9.40	\$10.46	\$0.00	\$54.13
	09/01/2018	\$34.76	\$9.65	\$10.81	\$0.00	\$55.22
	03/01/2019	\$35.25	\$9.90	\$11.14	\$0.00	\$56.29
	09/01/2019	\$35.78	\$10.15	\$11.45	\$0.00	\$57.38
	03/01/2020	\$36.27	\$10.40	\$11.78	\$0.00	\$58.45

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - TELECOMMUNICATION TECHNICIAN - Local 223
Effective Date - 09/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Notes: See Electrician Apprentice Wages

Steps are 750hrs

Telecom Apprentice Wages shall be the same as the Electrician Apprentice Wages

Apprentice to Journeyworker Ratio:2:3***
TERRAZZO FINISHERS
BRICKLAYERS LOCAL 3 - MARBLE & TILE

08/01/2017	\$51.00	\$10.75	\$19.35	\$0.00	\$81.10
02/01/2018	\$51.68	\$10.75	\$19.35	\$0.00	\$81.78
08/01/2018	\$53.03	\$10.75	\$19.48	\$0.00	\$83.26
02/01/2019	\$53.67	\$10.75	\$19.48	\$0.00	\$83.90
08/01/2019	\$55.02	\$10.75	\$19.62	\$0.00	\$85.39
02/01/2020	\$55.66	\$10.75	\$19.62	\$0.00	\$86.03
08/01/2020	\$57.01	\$10.75	\$19.77	\$0.00	\$87.53
02/01/2021	\$57.65	\$10.75	\$19.77	\$0.00	\$88.17
08/01/2021	\$59.05	\$10.75	\$19.93	\$0.00	\$89.73
02/01/2022	\$59.64	\$10.75	\$19.93	\$0.00	\$90.32

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile
Effective Date - 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.50	\$10.75	\$19.35	\$0.00	\$55.60
2	60	\$30.60	\$10.75	\$19.35	\$0.00	\$60.70
3	70	\$35.70	\$10.75	\$19.35	\$0.00	\$65.80
4	80	\$40.80	\$10.75	\$19.35	\$0.00	\$70.90
5	90	\$45.90	\$10.75	\$19.35	\$0.00	\$76.00

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.84	\$10.75	\$19.35	\$0.00	\$55.94
2	60	\$31.01	\$10.75	\$19.35	\$0.00	\$61.11
3	70	\$36.18	\$10.75	\$19.35	\$0.00	\$66.28
4	80	\$41.34	\$10.75	\$19.35	\$0.00	\$71.44
5	90	\$46.51	\$10.75	\$19.35	\$0.00	\$76.61

Notes:
Apprentice to Journeyworker Ratio:1:3
TEST BORING DRILLER
LABORERS - FOUNDATION AND MARINE

12/01/2016	\$37.70	\$7.60	\$14.35	\$0.00	\$59.65
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For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$36.42	\$7.60	\$14.35	\$0.00	\$58.37
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$36.30	\$7.60	\$14.35	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$45.93	\$10.00	\$15.25	\$0.00	\$71.18
	12/01/2017	\$46.92	\$10.00	\$15.25	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$33.02	\$10.91	\$10.89	\$0.00	\$54.82
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2016	\$48.58	\$7.60	\$14.75	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2016	\$50.58	\$7.60	\$14.75	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2016	\$40.65	\$7.60	\$14.75	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2016	\$42.65	\$7.60	\$14.75	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2017	\$32.65	\$7.60	\$13.50	\$0.00	\$53.75
	12/01/2017	\$33.28	\$7.60	\$13.50	\$0.00	\$54.38
	06/01/2018	\$34.12	\$7.60	\$13.50	\$0.00	\$55.22
	12/01/2018	\$34.96	\$7.60	\$13.50	\$0.00	\$56.06
	06/01/2019	\$35.83	\$7.60	\$13.50	\$0.00	\$56.93
	12/01/2019	\$36.69	\$7.60	\$13.50	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	09/01/2017	\$40.69	\$10.00	\$17.60	\$0.00	\$68.29
	09/01/2018	\$42.69	\$10.00	\$17.60	\$0.00	\$70.29
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$27.14	\$7.75	\$1.81	\$0.00	\$36.70
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$38.45	\$7.75	\$9.53	\$0.00	\$55.73
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$31.66	\$7.75	\$9.44	\$0.00	\$48.85
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$38.45	\$7.75	\$13.61	\$0.00	\$59.81
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$33.92	\$7.75	\$10.21	\$0.00	\$51.88
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$20.35	\$7.75	\$1.61	\$0.00	\$29.71
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$45.23	\$7.75	\$16.61	\$0.00	\$69.59

Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 09/03/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$27.14	\$7.75	\$3.31	\$0.00	\$38.20
2	65	\$29.40	\$7.75	\$3.38	\$0.00	\$40.53
3	70	\$31.66	\$7.75	\$3.45	\$0.00	\$42.86
4	75	\$33.92	\$7.75	\$5.02	\$0.00	\$46.69
5	80	\$36.18	\$7.75	\$5.09	\$0.00	\$49.02
6	85	\$38.45	\$7.75	\$5.15	\$0.00	\$51.35
7	90	\$40.71	\$7.75	\$7.22	\$0.00	\$55.68

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$28.98	\$4.25	\$3.12	\$0.00	\$36.35
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$27.31	\$4.25	\$3.07	\$0.00	\$34.63
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$27.31	\$4.25	\$3.07	\$0.00	\$34.63
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$18.51	\$3.55	\$0.00	\$0.00	\$22.06
This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground. This classification does not apply to wholesale tree removal.						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$16.32	\$3.55	\$0.00	\$0.00	\$19.87

This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is on the ground. This classification does not apply to wholesale tree removal.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Additional Apprentices Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c149, section 27B, a true and accurate record must be kept of all persons employed on the public works construction project for which the enclosed rates have been provided. The *Weekly Payroll Report Form* includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the project.

In addition, every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority. This is required to be done on a weekly basis. Once collected, the awarding authority is also required to preserve those records for three years.

In addition, each such contractor, subcontractor or public body shall furnish to the Executive Office of Labor within fifteen days after completion of its portion of the work a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE	
Date: ____ / ____ / 20____	
I, _____	_____,
(Name of signatory party)	(Title)
do hereby state:	
That I pay or supervise the payment of the persons employed by	
_____	on the _____
(Contractor, subcontractor or public body)	(Building or project)
and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.	
Signature _____	
Title _____	

MASSACHUSETTS WEEKLY CERTIFIED PAYROLL REPORT FORM



Company's Name:			Address:				Phone No.:				Payroll No.:								
Employer's Signature:			Title:				Contract No.:		Tax Payer ID No.:		Work Week Ending:								
Awarding Authority's Name:			Public Works Project Name:				Public Works Project Location:				Min. Wage Rate Sheet No.:								
General / Prime Contractor's Name:			Subcontractor's Name:				"Employer" Hourly Fringe Benefit Contributions												
					<div style="text-align: center;">Hours Worked</div> <div style="display: flex; justify-content: space-between;"> Su.Mo.Tu.We.Th.Fr.Sa. </div>						Project Hours (A) All Other Hours	Hourly Base Wage (B)	Health & Welfare Insurance (C')	ERISA Pension Plan (D)	Supp. Unemp. (E)	(B+C+D+E) Total Hourly Prev. Wage (F)	(A x F)		Check No. (H)
																	Project Gross Wages (G)	Total Gross Wages	

NOTE: Pursuant to MGL Ch. 149 s.27B, every contractor and subcontractor is required to submit a "true and accurate" copy of their weekly payroll records directly to the awarding authority. Failure to comply may result in the commencement of a criminal action or the issuance of a civil citation.

Date recieved by awarding authority <div style="text-align: center; margin-top: 5px;"> / / </div>

**EXCERPTS FROM CHAPTER 149 AND CHAPTER 30 OF THE
MASSACHUSETTS GENERAL LAWS**

Certain provisions of the Massachusetts General Laws are applicable to Construction contracts. The sections reproduced hereinafter do not represent an exclusive or comprehensive presentation of such applicable laws.

Attention is directed to the following Sections of Chapter 149 as amended:

Section 25. "Every employee in public work shall lodge, board, and trade where and with whom he elects; and no person or his agents or employees under contract with the commonwealth, a county, city or town, or with a department, board, commission or officer acting therefor, for the doing of public work shall directly or indirectly require, as a condition of employment therein, that the employee shall lodge, board or trade at a particular place or with a particular person. This section shall be made a part of the contract for such employment."

Section 26. "In the employment of mechanics and apprentices, teamsters, chauffeurs and laborers in the construction of public works by the commonwealth, or by a county, town or district, or by persons contracting or subcontracting for such works, preference shall first be given to citizens of the commonwealth who have been residents of the commonwealth for at least six months at the commencement of their employment who are veterans as defined in clause Forty-third of section 7 of chapter 4, and who are qualified to perform the work to which the employment relates and, within such preference, preference shall be given to service-disable veterans; and secondly, to citizens of the commonwealth generally who have been residents of the commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States, and every contract for such work shall contain a provisions to this effect...."

Section 27B. Records and Reports to be Kept and Furnished by Public Works Contractors.

Every contractor, subcontractor or public body engaged in said public works to which sections twenty-seven and twenty-seven A apply shall keep a true and accurate record of all mechanics and apprentices, teamsters, chauffeurs and laborers employed thereon, showing the name, address and occupational classification of each such employee on said works, and the hours worked by, and the wages paid to, each such employee, and shall promptly furnish to the attorney general or his representative, upon his request, a copy of said record, signed by the employer or his authorized agent under the penalties of perjury. For every week in which an apprentice is employed by a contractor, subcontractor or public body subject to this section, a photocopy of the apprentice's apprentice identification card, issued pursuant to section 11W of chapter 23, shall be attached to the records submitted under this section. Such records shall be open to inspection by any authorized representative of the department at any reasonable time, and as often as may be necessary. Every contractor and subcontractor required to keep such a record shall submit a copy of said record to the awarding authority on a weekly basis.

Each such contractor, subcontractor or public body shall preserve its payroll records for a period of three years from the date of completion of the contract.

Each such contractor, subcontractor or public body shall furnish to the awarding authority directly within fifteen days after completion of its portion of the work a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

Halifax Elementary School
Halifax, MA 02338

December 13, 2017

STATEMENT OF COMPLIANCE

_____, 20____

I, _____ (Name of signatory party),
_____ (Title) do hereby state:

That I pay or supervise the payment of the persons employed by _____
_____ (Contractor, subcontractor or public body) on the
_____ (Building or project) and that all mechanics and
apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in
accordance with wages determined under the provisions of sections twenty-six and twenty-seven
of chapter one hundred and forty-nine of the General Laws.

Signature _____

Title _____

The above-mentioned copies of payroll records and statements of compliance
shall be available for inspection by any interested party filing a written request to the
awarding authority for such inspection.

END OF FORM

Section 34. "Every contract, except for the purchase of material or supplies, involving the employment of laborers workmen, mechanics, foremen or inspectors, to which the commonwealth or any county or any town, subject to section thirty, is a party, shall contain a stipulation that no laborer, workman, mechanic, foreman or inspector working within the commonwealth, in the employ of the contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be required or permitted to work more than eight hours in any one day or more than forty-eight hours in any one week, or more than six days in any one week, except in cases of emergency, or in case any town subject to section thirty-one is a party to such a contract, more than eight hours in any one-day except as aforesaid... "

Section 34A. "Every contract for the construction, alteration, maintenance, repair or demolition of or addition to, any public building or other public works for the commonwealth or any political subdivision thereof shall contain stipulations requiring that the contractor shall, before commencing performance of such contract, provide by insurance for the payment of compensation and the furnishing of other benefits under chapter one hundred and fifty-two to all persons to be employed under the contract, and that the contractor shall continue such insurance in full force and effect during the term of the contract. No officer or agent contracting in behalf of the commonwealth or any political subdivision thereof shall award such a contract until he has been furnished with sufficient proof of compliance with the aforesaid stipulations. Failure to provide and continue in force such insurance as aforesaid shall be deemed a material breach of the contract and shall operate as an immediate termination thereof. No cancellation of such insurance, whether by the insurer or by the insured, shall be valid unless written notice thereof is given by the party proposing cancellation to the other party and to the officer or agent who awarded the contract at least fifteen days prior to the intended effective date thereof, which date shall be expressed in said notice. Notice of cancellation sent by the party proposing cancellation by registered mail, postage prepaid, with a return receipt of the addressee requested, shall be a sufficient notice....."

Section 34B. "Every contract for the construction, alteration, maintenance, repair or demolition of, or addition to, any public works for the commonwealth or any political subdivision thereof shall contain stipulations requiring that the contractor shall pay to any reserve police officer employed by him in any city or town the prevailing rate of wage paid to regular police officers employed by him in such city or town."

Section 44D. (1)(a) Every bid or offer submitted for a contract subject to section forty-four A shall be accompanied by a copy of a certificate of eligibility issued by the commissioner showing that the bidder or offeror has the classification and capacity rating to perform the work required. The bid or offer shall also be accompanied by an update statement in such form as the commissioner shall prescribe. A blank copy of such form shall be furnished by the awarding authority to every person or business entity requesting a copy. The update form shall provide space for information regarding all projects completed by the bidder or offeror since the date of certification of eligibility, all projects which the bidder or offeror currently has under contract including the percentage of work on such projects not completed, the names and qualifications of the personnel who will have supervisory responsibility for the performance of the contract, any significant changes in the bidder's or offeror's, financial position or business organization since the date of certification of eligibility, and such other relevant information as the commissioner shall prescribe. The bidder or offeror shall also include in its bid or offer and update statement the list of completed construction projects submitted to the division in its most recent application for contractor certification. Any bid or offer submitted without the appropriate certificate and update statement shall be invalid.

(b) The applicant shall certify under penalties of perjury at the conclusion of the application to bid that there have been no substantial changes in his financial position or business organization other than those changes noted within the application since the applicant's most recent prequalification statement and that the bid to be made will be in all respects bona fide, fair and

made without collusion or fraud with any other person. "Person" here means any natural person, joint venture, partnership, corporation or other business or legal entity which sells materials, equipment or supplies used in or for, or engages in the performance of, the same or similar construction, reconstruction, installation, demolition, maintenance or repair work or any part thereof.....

Attention is directed to the following sections of Chapter 30 of the General Laws of Massachusetts as amended to date:

Section 39F. "(1) Every contract awarded pursuant to sections forty-four A to L inclusive, of chapter one hundred and forty-nine shall contain the following subparagraphs (a) through (i) and every contract awarded pursuant to section thirty-nine M of chapter thirty shall contain the following subparagraphs (a) through (h) and in each case those subparagraphs shall be binding between the general contractor and each subcontractor."

- "(a) Forthwith after the general contractor receives payment on account of a periodic estimate, the general contractor shall pay to each subcontractor the amount paid for the labor performed and the materials furnished by that subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the subcontractor by the general contractor.
- "(b) Not later than the sixty-fifth-day after each subcontractor substantially completes his work in accordance with the plans and specifications, the entire balance due under the subcontract less amounts retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, shall be due the subcontractor; and the awarding authority shall pay that amount to the general contractor. The general contractor shall forthwith pay to the subcontractor the full amount received from the awarding authority less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the subcontractor by the general contractor.
- "(c) Each payment made by the awarding authority to the general contractor pursuant to subparagraphs (a) and (b) of this paragraph for the labor performed and the materials furnished by a subcontractor shall be made to the general contractor for the account of that subcontractor; and the awarding authority shall take reasonable steps to compel the general contractor to make each such payment to each such subcontractor. If the awarding authority has received a demand for direct payment from a subcontractor for any amount which has already been included in a payment to the general contractor or which is to be included in a payment to the general contractor for payment to the subcontractor as provided in subparagraphs (a) and (b), the awarding authority shall act upon the demand as provided in this section.
- "(d) If, within seventy-days after the subcontractor has substantially completed the subcontract work, the subcontractor has not received from the general contractor the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, the subcontractor may demand direct payment of that balance from the awarding authority. The demand shall be by a sworn statement delivered to or sent by certified mail to the awarding authority, and a copy shall be delivered to or sent by certified mail to the general contractor at the same time. The demand shall contain a detailed breakdown of the balance due under the subcontract and also a statement of the status of completion of the subcontract work. Any demand made after substantial completion of the subcontract work shall be valid even if delivered or mailed prior to the seventieth

day after the subcontractor has substantially completed the subcontract work. Within ten days after the subcontractor has delivered or so mailed the demand to the awarding authority and delivered or so mailed a copy to the general contractor, the general contractor may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the awarding authority and a copy shall be delivered to or sent by certified mail to the subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor and of the amount due for each claim made by the general contractor against the subcontractor.

- "(e) Within fifteen days after receipt of the demand by the awarding authority, but in no event prior to the seventieth day after substantial completion of the subcontract work, the awarding authority shall make direct payment to the subcontractor of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount (i) retained by the awarding authority as the estimated cost of completing the incomplete or unsatisfactory items of work, (ii) specified in any court proceedings barring such payment, or (iii) disputed by the general contractor in the sworn reply; provided, that the awarding authority shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by subparagraph (d). The awarding authority shall make further direct payments to the subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in parts (i) and (ii) of this subparagraph.
- "(f) The awarding authority shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of subparagraph (e) in an interest-bearing joint account in the names of the general contractor and the subcontractor in a bank in Massachusetts selected by the awarding authority or agreed upon by the general contractor and the subcontractor and shall notify the general contractor and the subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the general contractor and the subcontractor or as determined by decree of a court of competent jurisdiction.
- "(g) All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to subparagraph (f) shall be made out of amounts payable to the general contractor at the time of receipt of a demand for direct payment from a subcontractor and out of amounts which later become payable to the general contractor and in the order of receipt of such demands from subcontractors. All direct payments shall discharge the obligation of the awarding authority to the general contractor to the extent of such payment.
- "(h) The awarding authority shall deduct from payments to a general contractor amounts which, together with the deposits in interest-bearing accounts pursuant to subparagraph (f), are sufficient to satisfy all unpaid balances of demands for direct payment received from subcontractors. All such amounts shall be earmarked for such direct payments, and the subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the general contractor.
- "(i) If the subcontractor does not receive payment as provided in subparagraph (a) or if the general contractor does not submit a periodic estimate for the value of the labor or materials performed or furnished by the subcontractor and the

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subcontractor does not receive payment for same when due less the deductions provided for in subparagraph (a), the subcontractor may demand direct payment by following the procedure in subparagraph (d) and the general contractor may file a sworn replay as provided in that same subparagraph. A demand made after the first day of the month following that for which the subcontractor performed or furnished the labor and materials for which the subcontractor seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the general contractor. Thereafter the awarding authority shall proceed as provided in subparagraph (e), (f), (g), and (h)....."

Section 39K. "Every contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building by the commonwealth, or by any county, city, town, district, board, commission or other public body, when the amount is more than five thousand dollars in the case of the commonwealth and more than two thousand dollars in the case of any county, city, town, district, board, commission or public body, shall contain the following paragraph:--Within fifteen-days (30 days in the case of the commonwealth, including local housing authorities) after receipt from the contractor, at the place designated by the awarding authority if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the awarding authority will make a periodic payment to the contractor for the work performed during the preceding month and for the materials not incorporated in the work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the contractor has title or to which a subcontractor has title and has authorized the contractor to transfer title to the awarding authority, upon certification by the contractor that he is the lawful owner and that the materials are free from all encumbrances, but less (1) a retention based on its estimate of the fair value of its claims against the contractor and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and less (3) a retention not exceeding five percent of the approved amount of the periodic payment. After the receipt of a periodic estimate requesting final payment and within sixty-five-days after (a) the contractor fully completes the work or substantially completes the work so that the value of the work remaining to be done is, in the estimate of the awarding authority, less than one percent of the original contract price, or (b) the contractor substantially completes the work and the awarding authority takes possession for occupancy, whichever occurs first, the awarding authority shall pay the contractor the entire balance due on the contract less, (1) a retention based on its estimate of the fair value of its claims against the contractor and of the cost of completing the incomplete and unsatisfactory items of work and less (2) a retention for direct payments to subcontractors based on demand for same in accordance with the provisions of section thirty-nine F, or based on the record of payments by the contractor to the subcontractors under this contract if such record of payment indicates that the contractor has not paid subcontractors as provided in section thirty-nine F. If the awarding authority fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the contractor; provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until fifteen days (twenty-four days in the case of the commonwealth) after receipt of such a periodic estimate from the contractor, at the place designated by the awarding authority if such a place is so designated. The contractor agrees to pay to each subcontractor a portion of any such interest paid in accordance with the amount due each subcontractor.

"The awarding authority may make changes in any periodic estimate submitted by the contractor and the payment due on said periodic estimate shall be computed in accordance with the changes so made, but such changes or any requirement for a corrected periodic estimate shall not affect the due date for the periodic payment or the date for the commencement of interest charges on the amount of the periodic payment computed in accordance with the changes made, as provided herein; provided, that the awarding authority may, within seven days after receipt, return to the contractor for correction, any periodic estimate which is not in the required form or which contains

computations not arithmetically correct and, in that event, the date of receipt of such periodic estimate shall be the date of receipt of the corrected periodic estimate in proper form with arithmetically correct computations. The date of receipt of a periodic estimate received on a Saturday shall be the first working day thereafter. The provisions of section thirty-nine G shall not apply to any contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building to which this section applies.

"All periodic estimates shall be submitted to the awarding authority, or to its designee as set forth in writing to the contractor, and the date of receipt by the awarding authority or its designee shall be marked on the estimate. All periodic estimates shall contain a separate item for each filed subtrade and each subtrade listed in sub-bid form as required by specifications and a column listing the amount paid to each subcontractor and sub-subcontractor as of the date the periodic estimate is filed. The person making payment for the awarding authority shall add the daily interest provided for herein to each payment for each day beyond the due date based on the date of receipt marked on the estimate.

"A certificate of the architect to the effect that the contractor has fully or substantially completed the work shall, subject to the provisions of section thirty-nine J, be conclusive for the purposes of this section."

"Notwithstanding the provisions of this section, at any time after the value of the work remaining to be done is, in the estimation of the awarding authority, less than 1 per cent of the adjusted contract price, or the awarding authority has determined that the contractor has substantially completed the work and the awarding authority has taken possession for occupancy, the awarding authority may send to the general contractor by certified mail, return receipt requested, a complete and final list of all incomplete and unsatisfactory work items, including, for each item on the list, a good faith estimate of the fair and reasonable cost of completing such item. The general contractor shall then complete all such work items within 30 days of receipt of such list or before the contract completion date, whichever is later. If the general contractor fails to complete all incomplete and unsatisfactory work items within 45 days after receipt of such items furnished by the awarding authority or before the contract completion date, whichever is later, subsequent to an additional 14 days' written notice to the general contractor by certified mail, return receipt requested, the awarding authority may terminate the contract and complete the incomplete and unsatisfactory work items and charge the cost of same to the general contractor and such termination shall be without prejudice to any other rights or remedies the awarding authority may have under the contract. The awarding authority shall note any such termination in the evaluation form to be filed by the awarding authority pursuant to the provisions of section 44D of chapter 149."

Section 39L. The Commonwealth and every county, city, town, district, board, commission or other public body which, as the awarding authority, request proposals, bids or sub-bids for any work in the construction, reconstruction, alteration, remodeling, repair or demolition of any public building or other public works (1) shall not enter into a contract for such work with, and shall not approve as a subcontractor furnishing labor and materials for a part of any such work, a foreign corporation which has not filed with such awarding authority a certificate of the state secretary stating that such corporation has complied with section 15.03 of subdivision A of Part 15 of chapter 156D and the date of compliance, and further has filed all annual reports required by section 16.22 of subdivision B of Part 16 of said chapter 156D and (2) shall report to the state secretary and to the department of corporations and taxation any foreign corporation performing work under such contract or subcontract, and any person, other than a corporation, performing work under such contract or subcontract, and residing or having a principal place of business outside the commonwealth.

Section 39M(b). "Specifications for such contracts, and specifications for contracts awarded pursuant to the provisions of said sections forty-four A to forty-four L of said chapter one hundred and forty-nine, shall be written to provide for full competition for each item of material to be furnished under the contract; except, however, that said specifications may be otherwise written for sound reasons in the public interest stated in writing in the public records of the awarding authority or promptly given in writing by the awarding authority to anyone making a written request therefor, in either instance such writing to be prepared after reasonable investigation. Every such contract shall provide that an item equal to that named or described in the said specifications may be furnished; and an item shall be considered equal to the item so named or described if, in the opinion of the awarding authority: (1) it is at least equal in quality, durability, appearance, strength and design, (2) it will perform at least equally the function imposed by the general design for the public work being contracted for or the material being purchased, and (3) it conforms substantially, even with deviations, to the detailed requirements for the item in the said specifications. For each item of material the specifications shall provide for either a minimum of three named brands of material or a description of material which can be met by a minimum of three manufacturers or producers, and for the equal of any one of said named or described materials."

Section 39N. "Every contract subject to section forty-four A of chapter one hundred and forty-nine or subject to section thirty-nine M of chapter thirty shall contain the following paragraph in its entirety and an awarding authority may adopt reasonable rules or regulations in conformity with that paragraph concerning the filing, investigation and settlement of such claims:

"If, during the progress of the work, the contractor or the awarding authority discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the contract documents either the contractor or the contracting authority may request an equitable adjustment in the contract price of the contract applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the contract documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly."

Section 39O. "Every contract subject to the provisions of section thirty-nine M of this chapter or subject to section forty-four A of chapter one hundred forty-nine shall contain the following provisions (a) and (b) in their entirety....

"(a) The awarding authority may order the general contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as it may determine to be appropriate for the convenience of the awarding authority; provided however, that if there is a suspension, delay or interruption for fifteen days or more due to a failure of the awarding authority to act within the time specified in this contract, the awarding authority shall make an adjustment in the contract price for any increase in the cost of performance of this contract but shall not include any profit to the general contractor on such increase; and provided further, that the awarding authority shall not make any adjustment in the contract price under this provision for any suspension, delay, interruption or failure to act to the extent that such is due to any cause for which this contract provides for an equitable adjustment of the contract price under any other contract provisions.

- "(b) The general contractor must submit the amount of a claim under provision (a) to the awarding authority in writing as soon as practicable after the end of the suspension, delay, interruption or failure to act and, in any event, not later than the date of final payment under this contract and, except for costs due to a suspension order, the awarding authority shall not approve any costs in the claim incurred more than twenty days before the general contractor notified the awarding authority in writing of the act or failure to act involved in the claim.

Section 39P. "Every contract subject to section thirty-nine M of this chapter or section forty-four A of chapter one hundred forty-nine which requires the awarding authority, any official, its architect or engineer to make a decision on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, shall require that the decision be made promptly and, in any event, no later than thirty-days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, architect or engineer shall, within thirty-days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty-day period and the date by which the decision will be made."

Section 39R

(a). "The words defined herein shall have the meaning stated below whenever they appear in this section:

- (1) "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to sections thirty-eight A ½ to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A to forty-four H, inclusive, of chapter one hundred and forty-nine, which is for an amount or estimated amount greater than one hundred thousand dollars.
- (2) "Contract" means any contract awarded or executed pursuant to sections thirty-eight A ½ to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A through forty-four H, inclusive, of chapter one hundred and forty-nine, which is for an amount or estimated amount greater than one hundred thousand dollars
- (3) "Records" means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.
- (4) "Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his residence or principal office and who is in fact independent. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant's independence shall not be confined to the relationships existing in connection with the filing of reports with the awarding authority.
- (5) "Audit," when used in regard to financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing

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Halifax, MA 02338

December 13, 2017

standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.

- (6) "Accountant's Report," when used in regard to financial statements, means a document in which an independent certified public accountant indicates the scope of the audit which he has made and sets forth his opinion regarding the financial statements taken as a whole with a listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefor shall be stated. An accountant's report shall include as a part thereof a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the contractor.
- (7) "Management," when used herein, means the chief executive officer, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the contractor.
- (8) Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

(b) Subsection (a)(2) hereof notwithstanding, every agreement or contract awarded or executed pursuant to sections thirty-eight A ½ to thirty-eight O, inclusive, of chapter seven or eleven C of chapter twenty-five A, and pursuant to section thirty-nine M of chapter thirty or to section forty-four A through H, inclusive, of chapter one hundred and forty-nine, shall provide that:

- (1) The contractor shall make, and keep for at least six years after final payment, books, records, and accounts which in reasonable detail accurately and fairly reflect the transactions and dispositions of the contractor, and
- (2) until the expiration of six years after final payment, the office of inspector general, and the commissioner of capital asset management and maintenance shall have the right to examine any books,, documents, papers or records of the contractor or of his subcontractors that directly pertain to, and involve transactions relating to, the contractor or his subcontractors, and
- (3) if the agreement is a contract as defined herein, the contractor shall describe any change in the method of maintaining records or recording transactions which materially affect any statements filed with the awarding authority, including in his description the date of the change and reasons therefor, and shall accompany said descriptions with a letter from the contractor's independent certified public accountant approving or otherwise commenting on the changes, and
- (4) If the agreement is a contract as defined herein, the contractor has filed a statement of management on internal accounting controls as set forth in paragraph (c) below prior to the execution of the contract, and
- (5) If the agreement is a contract as defined herein, the contractor has filed prior to the execution of the contracts and will continue to file annually, an audited financial statement for the most recent completed fiscal year as set forth in paragraph (d) below.

(c) Every contractor awarded a contract shall file with the awarding authority a statement of management as to whether the system of internal accounting controls of the contractor and subsidiaries reasonably assures that:

- (1) transactions are executed in accordance with management's general and specific authorization;
- (2) transactions are recorded as necessary:
 - i. permit preparation of financial statements in conformity with generally accepted accounting principles, and
 - ii. maintain accountability for assets;
- (3) access to assets is permitted only in accordance with management's general or specific authorization; and
- (4) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

Every contractor awarded a contract shall also file with the awarding authority a statement prepared and signed by an independent certified public accountant, stating that he has examined the statement of management on internal accounting controls, and expressing an opinion as to:

- (1) whether the representations of management in response to this paragraph, and paragraph (b) above are consistent with the result of management's evaluation of the system of internal accounting controls; and
- (2) whether such representations of management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statements.

(d) Every contractor awarded a contract by the commonwealth or by any political subdivision thereof shall annually file with the commissioner of capital asset management and maintenance during the term of the contract a financial statement prepared by an independent certified public accountant on the basis of an audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report. Such statements shall be made available to the awarding authority upon request.

(e) The office of inspector general, the commissioner for capital asset management and maintenance and any other awarding authority shall enforce the provisions of this section. The commissioner of capital asset management and maintenance may after providing an opportunity for the inspector general and other interested parties to comment, promulgate pursuant to the provisions of chapter thirty A such rules, regulations and guidelines as are necessary to effectuate the purposes of this section. Such rules, regulations and guidelines may be applicable to all awarding authorities. A contractor's failure to satisfy any of the requirements of this section may be grounds for debarment pursuant to section forty-four C of chapter one hundred and forty-nine."

(f) Records and statements required to be made, kept or filed under the provisions of this section shall not be public records as defined in section seven of chapter four and shall not be open to public inspection; provided, however, that such records and statements shall be made available pursuant to the provisions of clause (2) of paragraph (b).

Section 39S. "(a) As used in this section the word "person" shall mean any natural person, joint venture, partnership corporation or other business or legal entity. Any person submitting a bid for, or signing a contract to work on, the construction, reconstruction, alteration, remodeling or repair of any public work by the commonwealth, or political subdivision thereof, or by any county, city,

town, district, or housing authority, and estimated by the awarding authority to cost more than \$10,000, and any person submitting a bid for, or signing a contract to work on, the construction, reconstruction, installation, demolition, maintenance or repair of any building by a public agency, estimated to cost more than \$10,000, shall certify on the bid, or contract, under penalties of perjury, as follows:

(1) that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration.

(b) Any employee found on a worksite subject to this section without documentation of successful completion of a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration shall be subject to immediate removal.

(c) The attorney general, or his designee, shall have the power to enforce this section including the power to institute and prosecute proceedings in the superior court to restrain the award of contracts and the performance of contracts in all cases where, after investigation of the facts, he has made a finding that the award or performance has resulted in violation, directly or indirectly, of subsection (b), and he shall not be required to pay to the clerk of the court an entry fee in connection with the institution of the proceeding."

Section 40. "Bonds given to the commonwealth, any county, city, town or political subdivision to secure the performance of contracts for the construction or repair of public buildings or other public works may be discharged or released by the awarding authority, upon such terms as it deems expedient, after the expiration of one year from the time of completion, subject to section thirty-nine K, of the work contracted to be done; provided that no claim filed under said bond is pending, and provided further, that no such bonds shall be discharged or released prior to the expiration of all special guarantees provided for in the contract unless new bonds in substitution therefor specifically relating to the unexpired guarantees shall be taken."

END OF SECTION

DRAFT AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:	PROJECT:	APPLICATION NO: 001	Distribution to:
		PERIOD TO:	OWNER: <input type="checkbox"/>
FROM	VIA	CONTRACT FOR:	ARCHITECT: <input type="checkbox"/>
CONTRACTOR:	ARCHITECT:	CONTRACT DATE:	CONTRACTOR: <input type="checkbox"/>
		PROJECT NOS: / /	FIELD: <input type="checkbox"/>
			OTHER: <input type="checkbox"/>

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM	\$	0.00
2. Net change by Change Orders	\$	0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)	\$	0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	\$	0.00
5. RETAINAGE:		
a. 0 % of Completed Work (Column D + E on G703)	\$	0.00
b. 0 % of Stored Material (Column F on G703)	\$	0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703)	\$	0.00
6. TOTAL EARNED LESS RETAINAGE	\$	0.00
(Line 4 Less Line 5 Total)		
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	\$	0.00
(Line 6 from prior Certificate)		
8. CURRENT PAYMENT DUE	\$	0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE		
(Line 3 less Line 6)		
	\$	0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ 0.00	\$ 0.00
Total approved this Month	\$ 0.00	\$ 0.00
TOTALS	\$ 0.00	\$ 0.00
NET CHANGES by Change Order	\$	0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____

Date: _____

State of: _____

County of: _____

Subscribed and sworn to before
me this _____ day of _____

Notary Public:

My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$ 0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____

Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract

DRAFT AIA[®] Document G703[™] - 1992

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 001

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	%(G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	GRAND TOTAL	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00 %	\$ 0.00	\$ 0.00

Silver Lake Regional School District & Massachusetts School Superintendency Union 31

250 Pembroke Street, Kingston, Massachusetts 02364
Telephone 781.585.4313 Fax 781.585.2994
www.slrsd.org

Superintendent
Joy Blackwood

Assistant Superintendent
Christine Pruitt

Administrator of Special Education
Marie Grable

Business Manager
Christine Healy

CRIMINAL OFFENDER RECORD INFORMATION (CORI) REQUEST/ACKNOWLEDGEMENT FORM

The Silver Lake Regional School District and Massachusetts School Superintendency Union 31 are registered under the provisions of M.G.L. c.6, § 172 to receive CORI for the purpose of screening current and otherwise qualified prospective employees, subcontractors, volunteers, license applicants, current licensees and applicants for the rental or lease of housing.

As a prospective or current employee, subcontractor, volunteer, license applicant or current licensee, I understand that a CORI check will be submitted for my personal information to the Department of Criminal Justice Information Services (DCJIS). I hereby acknowledge and provide permission to the Silver Lake Regional School District and MA Superintendency Union 31 to submit a CORI check for my personal information to the DCJIS. This authorization is valid for one year from the date of my signature. I may withdraw this authorization at any time by providing the Silver Lake Regional School District and MA Superintendency Union 31 with written notice of my intent to withdraw consent to a CORI check.

Silver Lake Regional School District and MA Superintendency Union 31 may conduct subsequent CORI checks within one year of the date this authorization was signed by me provided that the District first provides me with written notice 72 hours in advance.

By signing below, I provide my consent to a CORI check and acknowledge that the information provided on this Acknowledgement Form is true and accurate.

SIGNATURE _____

DATE _____

PLEASE COMPLETE THIS ENTIRE APPLICATION LEGHLY. All information must be complete or the CORI is unable to be processed and JD must be attached

School Building(s) Location or Department _____

Requested Position (o.g. volunteer, teacher, coach etc.) _____

Last Name _____

First name _____

Middle Name _____

Date of Birth _____
Month Day YYYY

Last six Digits of Social Security #
Write as ## - ####

Gender _____

CITY STATE COUNTRY
Place of Birth

Maiden Name or other name(s) by which you have been known _____

Mother's Full Maiden Name (FIRST, MIDDLE, LAST) _____

Father's Full Name (FIRST, MIDDLE, LAST) _____

Current Physical Address _____

STREET ADDRESS

TOWN

STATE

ZIP CODE

*Mailing Address (if different) _____

STREET OR P.O. BOX

TOWN

STATE

ZIP CODE

Former Address (5 yrs. prior) _____

STREET

TOWN

STATE

ZIP CODE

Driver's License No. & Issuing State _____

Height _____

Weight _____

Eye Color _____

PLEASE COMPLETE THE OTHER SIDE OF THIS FORM →

Information below to be completed by the District or Supervising Contractor if not a District Employee

The above information was verified by reviewing the following form of non-expired government issued photographic identification:

☐ MA Driver's License ☐ MA Identification ☐ Passport ☐ Other _____

Signature of Verifying Employee _____
& School System

Requested by _____
Joy Blackwood / Christine Pruitt

SORI REQUEST FORM

As an applicant/employee/volunteer for the position of _____

I authorize Silver Lake Regional School District & Massachusetts School Superintendency Union 81 to use
local and national Sexual Offender Registry information to determine if I pose an unreasonable risk to students.

First Name

Last Name

Date of Birth

Signature

Date

SECTION 00 8600**DRAWING LIST****GENERAL**

A-001	TITLE SHEET
A-002	SITE PLAN
A-003	GENERAL NOTES AND LEGEND

ARCHITECTURAL

AD-201	EXTERIOR ELEVATIONS - DEMOLITION
AD-202	EXTERIOR ELEVATIONS - DEMOLITION
AD-203	EXTERIOR ELEVATIONS - DEMOLITION
AD-204	EXTERIOR ELEVATIONS - DEMOLITION
AD-501	WINDOW TYPES - DEMOLITION
AD-502	DOOR AND FRAME TYPES - DEMOLITION
AD-511	WINDOW & STOREFRONT DETAILS - DEMOLITION
AD-512	WINDOW & STOREFRONT DETAILS - DEMOLITION
AD-513	WINDOW DETAILS - DEMOLITION
AD-521	DOOR DETAILS - DEMOLITION
AD-531	MISC DETAILS - DEMOLITION
AD-541	WALL DETAILS - DEMOLITION

A-101	FLOOR PLAN
A-201	EXTERIOR ELEVATIONS
A-202	EXTERIOR ELEVATIONS
A-203	EXTERIOR ELEVATIONS
A-204	EXTERIOR ELEVATIONS
A-210	ENLARGED EXTERIOR ELEVATIONS
A-501	WINDOW TYPES - NEW
A-502	STOREFRONT - DOOR TYPES & DOOR SCHEDULE
A-511	WINDOW & STOREFRONT DETAILS
A-512	WINDOW & STOREFRONT DETAILS
A-513	WINDOW DETAILS
A-521	DOOR DETAILS
A-531	MISC DETAILS
A-541	WALL DETAILS
A-551	REFLECTED SOFFIT PLAN

END OF SECTION

SECTION 01 1000**SUMMARY****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 SUMMARY OF WORK

- A. The project consists of the replacement of Window, Door and Siding Systems at the Halifax Elementary School in Halifax, Massachusetts.
- B. Without limiting the Contract Documents, the work generally consists of:
 - 1. Removal and disposal of existing windows, exterior doors, wood siding, and trim work.
 - 2. Temporary removal and resetting of existing exterior wall mounted devices, including lights, electrical outlets, and conduit, etc. Removal of abandoned devices set in exterior walls.
 - 3. Installation of new thermally broken aluminum window and storefront systems.
 - 4. Installation of new doors, frames and hardware.
 - 5. Installation of new fiber cement siding and cellular PVC trim work.
 - 6. Installation of new card access/key fob devices at locations shown on floor plan. Disconnection and reconnection of existing card reader/key fob devices in the new door frames.
 - 7. Existing paint removal and preparation of existing pilasters, crown moulding and trim boards to receive new paint.
 - 8. In addition, work under the Contract includes:
 - a. All work either shown on the Drawings and in the Specifications.
 - b. The restoration of site work and any other existing construction damaged or destroyed by construction operations.
 - c. Coordination and cooperation with the Owner on site.
 - d. Provide all temporary facilities.
 - e. Field testing and other commissioning activities for new window and door systems.
 - f. The disconnection, extension, and reconnection of the existing equipment shall be performed in accordance with the Commonwealth of Massachusetts State Building Code and by licensed HVAC, Plumbing, and Electrical contractors.
- C. The work of this Project is funded, in part, by the Massachusetts School Building Authority. The Contractor shall agree to comply fully with all requirements of the Authority in connection with the work and the Project and with all requests and requirements of the Awarding Authority in connection therewith.

1.03 WORK RESTRICTIONS

- A. The school will be occupied throughout the construction period. Limit use of the premises to construction activities in areas indicated; allow for occupancy and use by the Owner's maintenance and administrative personnel. Cooperate with the Owner to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations.
- B. Work at the site shall not proceed until the end of school: June 25, 2018. Work hours: 7:00 AM to 9:00 PM. All work shall be substantially complete no later than August 20, 2018.
- C. Maintain the buildings in a safe, neat, and clean condition throughout construction. Any dirt, dust, or mess made by the work shall be cleaned by the Contractor on a daily basis prior to leaving the site. The Contractor shall perform cleaning using its own materials and work force through and via the use of metal detectors in grass and playfield areas.
- D. Repair damage caused by construction operations.
- E. The possession and use of alcohol, tobacco, firearms, and drugs is not allowed on site.
- F. Refer to attached CORI requirements as per the Silver Lake Regional School District included in the Specifications. Personnel employed or engaged by the Contractor and/or any subcontractor to provide services at the work site shall submit to Criminal Offender Record Information (CORI) checks before he/she is allowed to enter the work site and/or perform services pursuant to this Agreement. The Contractor shall utilize the CORI forms provided by the Owner which shall be provided to the Owner for submission for the CORI check provide; the Contractor shall provide proof of identification as to each employee at such time. The Contractor shall not permit any worker to enter the work site and/or perform services on the work site pursuant to this Agreement until such time as the Owner has received the formal CORI report as to that worker and has approved that worker as acceptable under the CORI check. All such CORI and other criminal background checks shall be at the sole expense of the Contractor who shall promptly reimburse the Owner for any out-of-pocket costs incurred by the Owner in connection with the CORI checks. A copy of the CORI form is included in this Project Manual as part of Section 00 8000 Other Forms. All workforce laborers are required to have a work badge with photo identification and company information.

1.04 CONTRACTOR CONDUCT

- A. The Contractor acknowledges and agrees that the work site is located on school property and that staff, students, minor children and members of the public will or may be in the area during the time that work is in progress. The Contractor and the Contractor's employees, agents, contractors, subcontractors, business invitees and other invitees, shall conduct themselves in a manner that is appropriate to the location, will not reflect in an adverse way on the school, would not have an adverse or offensive effect on the staff, students, minor children and members of the public who may be present at the school property at the same time, and will not use crude or offensive language or gestures on school property in the presence of staff, students, minor children and members of the public. The Contractor, the Contractor's employees, agents, contractors, subcontractors, business invitees and other invitees, and all others for whom the Contractor is or may be held responsible, shall comply with all school policies, rules and regulations and all applicable laws, including but not limited to prohibitions on the use or possession of tobacco, alcoholic beverages and other controlled substances while on or near school property. The Contractor shall be responsible for ensuring compliance with this provision by the Contractor, the Contractor's employees, agents, contractors, subcontractors, business invitees and other invitees, as well as for all others for whom the Contractor is or may be held responsible.

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PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 2200**UNIT PRICES****PART 1 – GENERAL****1.01 GENERAL PROVISIONS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 REQUIREMENTS INCLUDED

- A. Unit pricing shall be performed by the General Contractor as applicable.
- B. Unit price work will be paid for in accordance with unit prices listed by the General Contractor, based on estimated quantities calculated by the Designer.
- C. All unit prices shall include their pro-rata share of all costs for overhead, profit, bond, labor, materials, disposal and equipment to perform the work item complete, as identified.
- D. If quantities exceed the units established in the contract, including the aforesaid overage percentage, an equitable unit price adjustment will be determined by the Owner's Project Manager.
- E. A change order will be initiated by the Owner's Project Manager to adjust the contract price resulting from the final quantities of the unit price work.

1.03 UNIT PRICES

- A. Should certain additional work be required, or should the quantities of certain classes of work be increased or decreased from those required by the Contract Documents, by authorization of the Owner, the below unit prices shall, at the option of the Owner, be the basis of payment to the Contractor or credit to the Owner, for such increase or decrease in the work. The Unit Prices shall represent the exact net amount per unit to be paid to the Contractor (in the case of additions or increases) or to be refunded the Owner (in the case of decreases). No additional adjustment will be allowed for overhead, profit, insurance, or other direct or indirect expenses of the Contractor or Subcontractors. No additional adjustments will be allowed for other work without the prior written approval of the Owner's Project Manager. The Estimated Quantities below are to be included in the base bid.

Item No.	Section No.	Item	Estimated Quantity	Unit of Measure
1.	06 1000	Remove and replace damaged wall sheathing with 3/4" exterior plywood sheathing	500	SF
2.	06 1000	Remove and replace 100 damaged / stained acoustical panels ceiling tiles (2' x 2').	100	Per Tile

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PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 3000**ADMINISTRATIVE REQUIREMENTS****PART 1 – GENERAL****1.01 CONSTRUCTION PROGRESS SCHEDULE**

- A. The Contractor shall produce within 15 days after notice of award, prepare and submit to the Architect and Owner for approval, a schedule showing the order in which the Contractor proposes to carry on the work, with dates on which he will start the work of the several trades and the principal features of the work, and the contemplated dates for completing same. The schedule shall indicate with symbols the percentage completed at any time, and shall be based on the approved Schedule of Values as described in the General and Supplementary Conditions. The Contractor shall bring the progress schedule up to date at the end of each month in a manner so as to show all work performed during the month, and shall deliver to the Architect PDF copies of the revised schedule together with the monthly application for payment. The copies shall be suitable for photographic reproduction.
- B. The Contractor shall furnish sufficient forces, construction plant and equipment to insure the prosecution of the work in accordance with the approved progress schedule. If, in the opinion of the Architect or Owner, the Contractor falls behind in the progress schedule, Contractor shall take such steps as may be necessary to improve his progress and the Architect or Owner may require him to increase the number of shifts, days of work and/or the amount of construction plant, all without additional cost to the Owner.
- C. Submission of updated progress schedules shall be a condition precedent to each progress payment.
- D. The contractor shall identify the following major milestones within the contractors detailed project schedule.
 - 1. Award of contract
 - 2. Completion of shop drawings and submittals
 - 3. Order of material
 - 4. Delivery of materials
 - 5. Mobilize on site
 - 6. Substantial completion
 - 7. Closeout

1.02 SCHEDULE OF VALUES

- A. General:
 - 1. Submit to the OPM and Architect for approval Schedules of Values within 10 days of receipt of notice to proceed.
 - 2. Provide support values given with data that will substantiate their correctness.
 - 3. The approved Schedule of Values will be the basis for Contractor's Application for Payment.

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B. Form of Submittal:

1. Use Table of Contents of the Project Manual as basis for format for listing costs of work for Sections and identify each line item with number and title of Section.

C. Preparing Schedules of Values:

1. Itemize separate line item cost for each of the following general cost items:
 - a. Performance and Payment Bonds.
 - b. Field Supervisions and Layout.
 - c. Temporary Construction Facilities and Controls.
 - d. Mobilization.
 - e. De-Mobilization.
2. Itemize separate line item cost for work required by each Section of Specification. Sections shall be further subdivided into separate line items under each Section as required by the Architect.
3. Break down installed costs into:
 - a. Delivered cost of product.
 - b. Cost of Labor to install.
 - c. Total installed cost, with overhead and profit.
 - d. Submittals.
 - e. Closeout Documents.
4. For each line item, which has installed value of more than \$10,000.00, break down costs to list major products or operations under each item.
5. Make sum of total costs of all items listed in schedule equal to total Contract Sum.

- D. Review and Re-submittal: After review by Architect, revise and resubmit Schedules as is required. Resubmit revised Schedules in same manner.

END OF SECTION

SECTION 01 3119**PROJECT MEETINGS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. This Section specifies requirements for Project Meetings including:
 - 1. Pre-Construction Conference
 - 2. Commissioning Meetings
 - 3. Progress Meetings/Construction Conferences

1.02 PRE-CONSTRUCTION CONFERENCE

- A. The Architect will conduct a pre-construction conference after execution of the Agreement and prior to commencement of construction activities. Review responsibilities and personnel assignments.
 - 1. Attendees - The Owner, OPM, Commissioning Agent, Architect and their consultants, the Contractor and its superintendent, subcontractors, suppliers, manufacturers' reps, and other concerned parties shall be represented by persons authorized to conclude matters relating to the Work.
 - 2. Agenda - Discuss significant items that could affect progress, including the tentative construction schedule, critical sequencing, use of the premises, procedures for processing Change Orders and equipment deliveries, submittals, and RFI's.

1.03 CONSTRUCTION CONFERENCES

- A. The OPM will conduct construction conferences at regular interval, weekly, and will notify the Owner, Architect and Contractor of scheduled dates. Coordinate meeting dates with preparation of the payment request
 - 1. Attendees - The Owner, OPM, Architect, Engineer, General Contractor, Subcontractor, Supplier or other entity concerned with progress or involved in planning, coordination or performance of future activities shall be represented by persons familiar with the Project and authorized to conclude matters relating to progress.
 - 2. Agenda - Review minutes of the previous progress meeting. Review significant items that could affect progress. Include topics appropriate to the current status of the Project.
 - 3. Contractor's Construction Schedule - Review progress since the last meeting. Determine where each activity is in relation to the Contractor's construction schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether revisions are required to ensure that current and subsequent activities will be completed with the Contract time. Contractor shall provide a two-week look-ahead schedule for each project meeting.

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4. Review the present & future needs of each entity present, including such items as:
 - a. Time
 - b. Sequences
 - c. Deliveries
 - d. Off-site fabrication problems
 - e. Site utilization
 - f. Temporary facilities and services
 - g. Hazards and risks
 - h. Quality and work standards
 - i. Change orders
 - j. Documentation of information for payment requests

1.04 REPORTING

- A. No later than seven (7) days after each meeting, the OPM will distribute copies of minutes of the meeting to each party present and to parties who should have been present.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 3300**SUBMITTAL PROCEDURES****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 CONSTRUCTION PROGRESS SCHEDULE

- A. The Contractor shall promptly, after award of Contract, prepare and submit to the Architect for approval, a schedule showing the order in which the Contractor proposes to carry on the work, with dates on which he will start the work of the several trades and the principal features of the work, and the contemplated dates for completing same. The schedule shall indicate with symbols the percentage completed at any time, and shall be based on the approved Schedule of Values as described in the General and Supplementary Conditions. The Contractor shall bring the progress schedule up to date at the end of each month in a manner so as to show all work performed during the month, and shall deliver to the Architect three copies of the revised schedule together with the monthly application for payment. The copies shall be suitable for photographic reproduction.
- B. The Contractor shall furnish sufficient forces, construction plant and equipment to insure the prosecution of the work in accordance with the approved progress schedule. If, in the opinion of the Architect or Owner, the Contractor falls behind in the progress schedule, Contractor shall take such steps as may be necessary to improve his progress and the Architect or Owner may require him to increase the number of shifts, days of work and/or the amount of construction plant, all without additional cost to the Owner.
- C. Submission of updated progress schedules shall be a condition precedent to each progress payment.
- D. The Contractor shall identify the following major milestones within the contractors detailed project schedule.
1. Award of contract
 2. Completion of shop drawings and submittals
 3. Order of material
 4. Delivery of materials
 5. Mobilize on site
 6. Substantial completion
 7. Closeout

1.03 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. Provide electronic copies of all submittals to be sent to the Architect, Owner's Project Manager, and Clerk of the Works and provide hard copies of all approved submittals to the Owner Project Manager, Clerk of the Works, and Contractor's field office within five working days upon approval.
- B. The Contractor, within 10 days after being awarded the Contract, shall prepare and submit for the Architect's review a schedule of Shop Drawings, Product Data and Samples required to be submitted for the work. The schedule shall indicate by trade the date by which final approval of each item must be obtained, and shall be revised as required by conditions of the work, subject to Architect's review. The Architect's review, including Consultant's review period, will not exceed 10 days from the established date of each submission indicated on the "Schedule of Shop Drawings, Product Data and Samples" plus the additional time, if any, for distribution by the Contractor and receipt of submissions by the Architect. The Contractor is required to strictly adhere to the established schedule dates.
- C. Notes or other information on the Shop Drawings, labels, transmittals or other items submitted which are contrary to provisions of the Contract Documents shall be deemed to be addressed to the applicable Contractor, Subcontractor, vendor or other parties involved, and shall have no force or effect with respect to this Contract, even though the Shop Drawing or sample involved is reviewed by the Architect. In particular, the terms "By Others", "N.I.C.", or words of similar meaning and import on submissions shall not be deemed to imply that the referenced items are to be omitted from this Contract.
- D. Representation: By his submittal of any shop drawing or catalog data, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, or will do so, and that he has checked and coordinated each item with other applicable approved shop drawings and the Contract requirements. Certification shall appear on each shop drawing stating that the General Contractor has made this check. All drawings without this certification will be returned without examination.
- E. Deviations: Review of shop drawings, samples or catalog data by the Architect shall not authorize any deviation from the requirements of the Contract Documents, nor shall such review relieve the Contractor from responsibility for errors or omissions therein. If the shop drawings deviate, or are intended to deviate from the Contract Documents, the Contractor shall so advise the Architect in writing at the time the shop drawings are submitted, stating the difference between the Contract requirements and that denoted by the shop drawings. A brief explanation of the purpose for the change shall also accompany the deviated shop drawings. Such deviation shall not be deemed accepted by the Architect unless the Architect thereafter provides explicit written approval of such deviation.
- F. Shop Drawings
 - 1. To receive consideration by the Architect, Shop Drawings shall be accompanied by a letter of transmittal and each drawing shall contain the following information on the title block:
 - a. Project identification.
 - b. Architect's name.
 - c. Date of preparation of submission, and of revision if applicable.
 - d. Shop Drawing number and title of item the drawing refers to.
 - e. Architect's Drawing numbers and Specification paragraph number used as a reference in preparing Shop Drawing.
 - f. Contractor's and Subcontractor's name.
 - g. Names of person or firm preparing drawings.

- h. Statement or stamp of approval by the Contractor, which shall signify that he has seen and examined the drawing and that requirements of the General Conditions have been complied with.
- 2. Shop Drawings relating to various units comprising a proposed assembly shall be submitted simultaneously so that said units may be checked individually and as an assembly.
- 3. All Shop Drawings shall be submitted directly to the Architect through the General Contractor. Drawings submitted directly from the Subcontractors, manufacturers or vendors, or directly to the Architect's consultants, will be returned to the Contractor without action.
- 4. Submit Shop Drawings of standard manufactured items in the form of manufacturer's catalog sheets, showing illustrated cuts of the items to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, and other pertinent information, accompanied by an appropriate transmittal form with specific reference to the applicable paragraph in the Specification.
- 5. For all Shop Drawings, including wiring and control diagrams, one electronic copy in pdf format of each shall be submitted. The file shall be made by the Contractor after his stamp and his comments or corrections, if any, have been affixed to the document. Procedure shall be as follows:
 - a. Each document shall have a clear space approximately 40 square inches as an additional border on the right side or bottom of the document for stamps and Architect's comments.
 - b. The Architect will annotate the document and indicate one of the following marks as applicable.
 - No Exceptions Taken
 - Note Markings – Re-submittal Not Required
 - Note Markings – Re-submittal Required
 - Rejected
 - c. For drawings marked "Rejected", or "Note Markings – Re-submittal Required", the Architect will retain the document for record purposes and for comparison with subsequent resubmissions, furnish to the applicable consultants, if any, and transmit to the Contractor electronically in pdf format. Such procedures shall be followed until the Shop Drawing is marked "Note Markings – Re-submittal Not Required", or "No Exception Taken".
 - d. Drawings marked "Note Markings – Re-submittal Not Required", shall be treated as acceptable drawings. The Architect's comments shall be considered part of the original drawings. Should the Contractor disagree with such comments, he shall so notify the Architect in writing within fourteen days after receipt of such drawings and before commencing work on the items in question. Failing this, the Contractor shall be deemed to have accepted full responsibility for implementing such comments at no additional cost to the Owner.
 - e. Documents for all drawings marked "Note Markings – Re-submittal Not Required" or "No Exceptions Taken" will be transmitted to the General Contractor electronically in pdf format.
- 6. If catalog cuts of standard manufactured items show different types, options, finishes, performance requirements, or other variations, those features that the Contractor proposes to furnish shall be clearly circled or otherwise indicated, and all irrelevant diagrams, notes, or other information deleted or canceled. If any variations from the catalog description are proposed or required, such variations must be clearly noted on the cut by the Contractor. Catalog cuts of wiring diagrams will not be acceptable.

7. Shop Drawings shall clearly indicate all details, sectional views, arrangements, working and erection dimensions, kinds and quality of materials and their finishes, and other information necessary for proper checking and for fabrication and installation of the items, and shall include all information required for making connections to other work.
8. If any information on previously submitted Shop Drawings, aside from notations made by the Architect is revised in any way, such revision shall be circled or otherwise graphically brought to the Architect's attention. If approved drawings are subsequently revised, they shall be resubmitted to the Architect with all revisions clearly marked for the Architect's attention. Whenever drawings are revised, the latest revisions shall be circled or otherwise indicated to distinguish them clearly from all previous revisions (and from the information on the original drawing).
9. Should the Architect in checking Shop Drawings recommend changes which the Contractor deems will increase the Contract Price, the Contractor shall so inform the Architect in writing within fourteen days following receipt of the checked Shop Drawings and prior to starting fabrication of the item or items. Failing this, the Contractor shall be deemed to have waived all claims for extra compensation for the work involved.
10. The Contractor shall be responsible for obtaining and distributing copies of final Shop Drawings to his subcontractors and material suppliers needing such information, at no additional cost to the Owner.
11. The Contractor shall keep on the site, in good order, a complete up-to-date set of all approved Shop Drawings.



12. GC to provide OPM with one full sized hard copy of all approved submittals and shop drawings.

G. Samples

1. Before submitting samples, consult with the Architect to verify that samples will be required and to determine whether samples are to be submitted to Architect's office, field, or other location.
2. Samples shall be submitted in triplicate, unless otherwise specified or directed by the Architect.
3. The Architect will prepare a master color schedule indicating the required color, finish, pattern, material, texture, and other pertinent information in connection with interior and exterior finishes.
 - a. To facilitate the preparation of such schedule, the Contractor shall submit, within forty-five days following date of award of contract, unless otherwise extended by the Architect and the Owner, the names of the manufacturers whose products he proposes to use within the framework of the Specifications, wherever color, finish, pattern, texture, or other related information is a consideration.
 - b. Color chips shall be submitted for all items having color unless otherwise directed or approved by the Architect. Upon the expiration of such forty-five day period, the Architect will proceed with color selection and preparation of final color schedule.
 - c. The Architect will select the colors and finishes of a manufacturer within the framework of the Specifications, for each item where the Contractor fails to submit the name of a specific manufacturer within the allotted time, and the Contractor shall provide such materials without additional compensation.

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4. Samples may be submitted to the Architect directly from manufacturers, vendors, suppliers, subcontractors, or others, but a separate transmittal letter shall be submitted through the Contractor in each such case.
5. Approved samples of major or expensive items or assemblies, if in good condition and meeting all requirements of the Contract, may be properly marked for identification and used in the work, provided that all shipping and handling charges are paid by the Contractor.
6. Each sample shall have a label indicating the material represented, its place or origin, and the names of the producer, the Architect, the Contractor, the Subcontractor, and the building or work for which the material is intended. Samples shall be marked to indicate the Drawing numbers or Specification paragraph requiring the materials represented.
7. Approval of samples for color, texture, and other aesthetic qualities shall not be constructed as approval of other characteristics.

1.04 SCHEDULE OF VALUES

A. General:

1. Submit to the Architect and OPM for approval Schedules of Values within 10 days of receipt of Notice to Proceed.
2. Provide support values given with data that will substantiate their correctness.
3. The approved Schedule of Values will be the basis for Contractor's Application for Payment.

B. Form of Submittal:

1. Use Table of Contents of the Project Manual as basis for format for listing costs of work for Sections and identify each line item with number and title of Section.
2. The work of this Project is funded, in part, by the Massachusetts School Building Authority (MSBA). The Contractor shall agree to comply fully with all requirements of the Authority in connection with the work and the Project and with all requests and requirements of the Awarding Authority in connection therewith. The Contractor shall submit their Schedule of Values in a format compatible with the MSBA ProPay System.

C. Preparing Schedules of Values:

1. Itemize separate line item cost for each of the following general cost items:
 - a. Performance and Payment Bonds.
 - b. Field Supervisions and Layout.
 - c. Temporary Construction Facilities and Controls.
 - d. Mobilization.
 - e. Demobilization.
2. Itemize separate line item cost for work required by each Section of Specification. Sections shall be further subdivided into separate line items under each Section as required by the Architect.
3. Break down installed costs into:
 - a. Delivered cost of product.
 - b. Cost of Labor to install.
 - c. Total installed cost, with overhead and profit.

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- d. Submittals.
 - e. Closeout Documents.
- 4. For each line item, which has installed value of more than \$10,000.00, break down costs to list major products or operations under each item.
- 5. Make sum of total costs of all items listed in schedule equal to total Contract Sum.
- D. Review and Resubmittal:
 - 1. After review by Architect, revise and resubmit Schedules as required. Resubmit revised Schedules in the same manner as the initial submission.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 3543**ENVIRONMENTAL PROCEDURES****PART 1 – GENERAL****1.01 CONDITIONS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements therein affecting the work and this Section. The exact scope of work of this bidder cannot be determined without a thorough review of all specification sections and other contract documents.

1.02 RELATED WORK UNDER OTHER SECTIONS

- A. Section 02 2820 – Asbestos Remediation.
- B. Section 02 4100 – Demolition.

1.03 HAZARDOUS MATERIALS PROCEDURE

- A. Asbestos:
 - 1. The General Contractor shall retain the services of a Massachusetts Licensed asbestos abatement contractor to properly remove and dispose of Asbestos Containing Materials (ACM) listed in Section 02 2820.
 - 2. Unknown and inaccessible ACM: During the work of the Contract, it is possible that previously unknown asbestos materials may be discovered in currently concealed or unknown locations.
 - 3. Notification: If the General Contractor or any Sub-Contractor discover or encounter any ACM during the performance of the work, the General Contractor or any Sub-Contractor shall immediately:
 - a. Stop work, notify the Owner and architect about the presence of suspect ACM and request instructions for proper action, and
 - b. Take whatever steps and measures are necessary to reduce, control or eliminate the risk of exposure of workers and the public to the ACM.
 - c. Every effort will be made to obtain DEP (12 working day notification period) waivers to remove hidden or unforeseen ACM by the asbestos contractor. The General Contractor or any Sub-Contractor shall allow sufficient time for the removal of the ACM at no additional charges to the owner for delays and should waivers be denied by the DEP.
 - 4. Responsible Person On-Site: The General Contractor or any Sub-Contractor shall designate one of its senior on-site employees to be in charge of coordination between the Architect and the General Contractor or any Sub-Contractor with respect to hazardous materials issues.
 - 5. Responsibility for Hazardous Material Discovery: It is the sole responsibility of the General Contractor or any Sub-Contractor and its Subcontractors to undertake whatever measures methods of procedures are necessary, required or otherwise appropriate to safeguard the

health and safety of all workers and members of the public with respect to identification and discovery of previously unknown hazardous materials during the work of the Project.

6. Indemnification: To the fullest extent permitted by law, the General Contractor or any Sub-Contractor shall indemnify and hold harmless the Owner and the Architect and their agents and employees from and against all claims, damages, losses and expenses including, but not limited to, attorneys' fees arising out of or relating to the performance of the Work, including the discovery or identification of any hazardous materials, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to damage to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom; and is caused in whole or in part by any negligent act or omission of the General Contractor or any Sub-Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

B. Lead:

1. The General Contractor or any Sub-Contractor shall be made aware that Lead Based Paint exists on painted surfaces. Lead abatement might be needed and therefore, the General Contractor shall retain the services of a licensed lead contractor to provide needed services at no additional cost to the Owner.
2. All the work of this Contract shall conform to the standard set by all applicable Federal, State and Local laws, regulations, ordinance and guidelines in such from in which they exist at the time of the work on the Contract and as may be required by subsequent regulations.
3. The General Contractor or any Sub-Contractors is solely responsible for means and methods, and techniques used for demolition and lead control. The General Contractor or any Sub-Contractor shall collect and control lead contaminated debris and to properly remove and dispose of lead contaminated soil around the buildings due to demolition activities.
4. The General Contractor or any Sub-Contractor shall at his own cost and expense comply with all laws, ordinance, rules and regulations of Federal, State, Regional and Local authorities during demolition, prepping, sanding, cutting, burning, scraping, painting over, grinding and regarding handling, storing and disposing of lead and lead contaminated waste material.
5. The General Contractor or any Sub-Contractor shall submit to the Architect prior to commencing of work the following:
 - a. Written respiratory and notification program
 - b. Written lead compliance program in accordance with OSHA regulations including:
 - 1) Training requirement certifications.
 - 2) Supervisor qualifications.
 - 3) Written compliance program specific to this project
 - 4) Respirators fit test records.
 - 5) Medical surveillance certificates.
6. The EPA and the DEP require demolition debris with lead to be tested in accordance with the Toxicity Characteristic Leaching Procedure (TCLP) to determine the potential for significant amounts of lead to leach out of the waste. If the results are below the DEP standard (5.0 ppm), the waste may be disposed of in a conventional landfill for demolition debris. If, however, the TCLP results are above the DEP standard, the waste must be disposed of in a DEP approved, hazardous waste landfill. The General Contractor or any Sub-Contractor shall at own cost and expense perform all required testing of waste by the

TCLP. The General Contractor or any Sub-Contractor must submit to the Owner copy of tests performed and all waste shipment records prior to disposing of debris. The Owner reserves the right to have own TCLP samples collected to verify results. All disposal costs shall be at the General Contractor or any Sub-Contractor's responsibility.

7. The following references are cited as current applicable publications. This project is subject to compliance with the all regulations including but not limited to:
 - a. Commonwealth of Massachusetts, Department of Labor and Work Force Development 454 CMR 11.00, Structural Painting Safety Code, as currently amended.
 - b. Commonwealth of Massachusetts, Department of Environmental Protection, and Hazardous Materials Regulations at 310 CMR 30.00 as currently amended.
 - c. U. S. Department of Labor, Occupational Safety and Health Administration Title 29 CFR 1910.1025 and 29 CFR Part 1926.62.
 - d. U. S Department of Environmental Protection, Resources Conservation and Recovery Act.
 - e. Commonwealth of Massachusetts, Department of Labor and Work Force Development 454 CMR 22.00.
 8. All above regulations are applicable to this project. Where there is a conflict between this section and the applicable regulations, the more stringent requirement shall prevail.
- C. Polychlorinated Biphenyls (PCB's):
1. The caulking and glazing at the existing windows, storefronts, doors as well as the unit ventilator grille caulking, are assumed to contain greater than 1 ppm of Polychlorinated Biphenyls (PCBs). The contractors are to be aware that testing of the caulking and glazing for PCBs has not been performed and is not planned. The abatement contractor shall be solely responsible for means & methods and techniques used for demolition, removal, control and disposal of the caulking and glazing. The abatement contractor shall protect the soil and shall collect and control PCB contaminated debris. All work shall conform to the standard set by all Federal, State and Local laws, regulations, ordinances and guidelines at no additional cost to the owner.

PART 2 – PRODUCTS

Not Used

PART 3 – EXCUTION

Not Used

END OF SECTION

SECTION 01 4339**MOCKUPS****PART 1 – GENERAL****1.01 GENERAL PROVISIONS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 SUMMARY

- A. This Section specifies requirements for mockups. Provide and coordinate mockup assemblies at Project site for Designer's and the Owner Project Manager's review and acceptance, in accordance with requirements of the Contract Documents. Refer also to individual specification sections for mockup requirements. Generally, without limitation, mockups on site include the following:
 - 1. Mockups of individual pieces of the work, as specified within individual specification section.
 - 2. Field Mockup of exterior wall components. Refer to the Drawings for extent of mockup.
- B. It shall be the responsibility of the Contractor to coordinate the work of the related Specification Sections so that each mockup meets the specified requirements.
- C. Examine Contract Documents for requirements that affect Work of this Section.
- D. In-place mockup shall be installed during school off hours on weekend prior to the end of the school year. The mockup shall not disrupt the occupied classroom during normal school hours.

1.03 DEFINITIONS

- A. In-Place Mockups: Full-size, physical assemblies that are constructed in-place and remain part of final construction.
 - 1. In-place mockups will be used to verify selections made under sample submittals, to demonstrate aesthetic effects, qualities of materials and execution, and to review construction, coordination, testing, or operation.
 - 2. Approved in-place mockups establish the standard by which the Work will be judged.
 - 3. Approved mockups remain part of the completed Work.

1.04 SUBMITTALS

- A. Schedule: General Contractor shall submit a schedule of mockup construction, including dates for mockup review by the Designer.
 - 1. Mockup schedule shall be reviewed at each progress meeting, revised and resubmitted as required.
 - 2. Schedule shall allow sufficient time for mockups which are not accepted to be reconstructed and reviewed until accepted by the Designer.

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- B. Shop Drawings of Mockups: Provide large scale shop drawings for fabrication, installation and erection of all parts of each mockup. Include plans, elevations, and details of anchorage, connections and accessory items.
- C. Submittal Samples: Refer to individual Specification Sections for submittal requirements of mockup components and coordinate accordingly.

1.05 QUALITY ASSURANCE

- A. Mockup Modifications: Make design modifications to work only as required to meet performance requirements and to coordinate the work. Indicate proposed design modifications on shop drawings. Maintain original design concept without altering profiles and alignments indicated.

PART 2 – PRODUCTS

2.01 MATERIALS AND PRODUCTS

- A. Provide materials, components, and products for mockups as specified in individual Specification Sections.

PART 3 – EXECUTION

3.01 GENERAL

- A. Refer to individual specification sections for specific requirements regarding condition of surfaces, erection, and erection tolerances.

3.02 FIELD MOCKUP OF EXTERIOR WALL

- A. Provide a field mockup of the exterior wall at location and in configuration indicated on Drawings. The in place exterior wall mockup shall include the siding and trimwork systems, two windows and all related flashings and sealants, and backup wall construction. Obtain Designer's acceptance of visual qualities prior to commencing work that individual mockup is intended to represent. Protect and maintain approved mockups throughout the work of the Contract.
 - 1. Refer to Drawings for extent of the field mockup.
 - 2. Provide modifications to mockup as required until Designer's approval has been received.

3.03 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as non-visible as possible.
- B. Protect construction exposed by or for quality-control service activities.

END OF SECTION

SECTION 01 5000**TEMPORARY FACILITIES AND CONTROLS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 SUMMARY

- A. This Section specifies temporary services. Remove when no longer needed or replaced by permanent facilities. Compliance with these provisions shall be the sole responsibility of the Contractor and shall be at the sole cost and expense of the Contractor.

1.03 USE CHARGES

- A. Cost or use charges for temporary facilities are not chargeable to the Owner or Architect and will not be accepted as a basis of claims for a Change Order. All applicable costs shall be paid by the General Contractor.

1.04 REGULATIONS

- A. Comply with applicable laws and regulations including standards set forth by the Massachusetts Department of Public Safety and the Occupational and Safety Health Act of 1970, latest revision.

1.05 STANDARDS

- A. Comply with NFPA Code 241, "Building Construction and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition." Comply with Occupational and Safety Health Act of 1970, latest revision.

1.06 CONDITIONS OF USE

- A. Keep facilities clean and neat. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload or permit facilities to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions or public nuisances to develop or persist on the site.

1.07 MATERIALS AND EQUIPMENT

- A. Provide new materials and equipment; if acceptable to the Architect, undamaged previously used materials and equipment in serviceable condition may be used. Provide materials and equipment suitable for the use intended.
 - 1. Lumber and Plywood - Comply with requirements in Section "Rough Carpentry". Provide fire treated lumber and plywood for sheds and offices. Provide minimum 5/8" thick exterior plywood for other uses.
 - 2. Tarpaulins - Waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

3. Open-Mesh Fencing - 11-gage, galvanized 2-inch, chain link fabric fencing 6-feet high with galvanized barbed wire top strand and galvanized steel pipe posts, 1 -1/2 I.D. for line posts and 2-1/2" I.D. for corner posts.

1.08 DUST CONTROL

- A. The General Contractor shall provide adequate means for the purpose of preventing dust caused by construction operations from creating a hazard, nuisance, and from entering adjacent occupied areas throughout the period of the construction contract.
- B. This provision does not supersede any specific requirements for methods of construction or applicable general conditions set forth in the Contract Articles with added regard to performance obligations of the General Contractor.

1.09 WEATHER PROTECTION AND TEMPORARY ENCLOSURES

- A. It is the intent of this contract that no temporary weather protection and temporary enclosures are allowed unless it is approved by the Owner and OPM prior to construction and subject to emergency need. It is the intent of this contract that no windows and exterior doors shall be removed unless its replacement is installed and made weathertight each day.
- B. The Contractor shall provide temporary enclosures and weather protection. "Weather Protection" shall mean the temporary protection of that Work adversely affected by rain, wind, and cold by covering, enclosing, and/or heating.
- C. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees Fahrenheit at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Articles with added regard to performance obligations of the Contractor.
- D. Within 10 calendar days after award of the Contract, the Contractor shall submit in writing, to the Architect and OPM for approval, three (3) copies of the proposed methods for "Weather Protection."
- E. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection devices.
- F. The entire responsibility for weather protection during construction, until Substantial Completion, shall be assumed by the Contractor, who shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation. The Contractor shall take the necessary precautions and provide all equipment, materials and labor necessary to adequately protect the Contract Area, previous construction, the building and its contents and occupants, and surrounding landscape areas from damage due to the construction or inclement weather during construction. No storage in or within the building will be allowed and neither the Contractor nor its workmen or agents shall be permitted within the building except where necessary to install the work and the Owner's and OPM's prior permission has been obtained.
- G. Work damaged by frost shall be removed and replaced at the expense of the Contractor and as directed by the Architect.
- H. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Contractor to the perfect execution of the Work. This provision shall

not constitute any waiver, release, or lessening of the Contractor's obligation to bringing the Work to Substantial Completion within the period of time set forth in the Contract Documents.

- I. If during the Contract period, the Contractor is notified of insufficient weather protection, he shall, immediately, properly restore the weather protection and repair or replace any damaged unprotected materials and systems. Should the Contractor not effect immediate repair or replacement when notified, the Owner may, but shall not be obligated to, have the proper protection installed at the Contractor's expense.
- J. Provide storage trailers for temporary storage of window, storefront and door systems if material is delivered to the site prior to end of school year or construction start date.

1.10 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. Maintain support facilities until Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Toilets - Install self-contained single-occupant toilet units of the chemical aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Use of pit-type privies will not be permitted.
- C. Wash Facilities - Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up. Dispose of drainage properly. Supply cleaning compounds. Provide safety showers, eye-wash fountains and similar facilities for safety and sanitation of personnel.
- D. Drinking Water Facilities - Provide containerized tap-dispenser bottled-water type drinking water units.
- E. Temporary Enclosures - Provide temporary enclosure for protection of construction from exposure, foul weather, other construction operations and similar activities. Where heat is needed and the building enclosure is incomplete, provide enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions.
 - 1. Install tarpaulins securely, with incombustible framing. Close openings through walls, floors or roof decks and horizontal surface with load-bearing construction.
- F. Collection and Disposal of Waste - Collect and dispose of waste daily. Comply with NFP 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner. The Contractor shall supply adequate covered receptacles for waste, debris and rubbish, which shall be immediately removed from the site when full or more often, if necessary. The receptacles shall be located in areas approved by the Owner only. Receptacles shall not remain adjacent to the building overnight.
- G. Scaffolding and Staging – Where scaffolding and staging is required for the proper installation of the Work, it shall be erected to provide a minimal impact on the site. Barriers and warning lines shall be installed at the base of any scaffolding or staging and around ground areas below elevated staging. Overhead protection shall be provided where walkways pass through work areas. All scaffolding and staging shall be erected in conformance with all applicable state, federal and local codes.

- H. Preparatory Work by the Contractor – The Contractor will protect the building contents below work areas where the work requires interior access as follows. The Contractor shall move all furniture and equipment to middle of room away from work areas, cover open shelving, office and classroom equipment, and furniture with polyethylene, mask openings to closets, encased bookshelves, cabinets and similar fixed storage areas. No fixtures or appliances will be protected by the Owner. Upon completion of the work, the Contractor shall remove all masking and protection and clean and restore the area to the satisfaction of the Owner, cleaning, repairing and replacing all soiled, stained or damaged floor areas.
- I. Signs – The contractor shall conspicuously post a project sign at ground level. This sign shall designate the project entrance. Only one (1) entry may be used by the Contractor. The entry location shall be as directed by the Owner.
- J. Parking – The Owner has designated parking locations for Contractor's employees, personnel and vehicles. Refer to the Drawings for specific designated locations.
- K. Site Trailer(s) – The Owner will provide a designated internal space for the General Contractor Site Supervisor's Office and Clerk of the Works until the substantial completion date established.

1.11 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Fire Extinguishers - Provide hand-carried, portable, UL rated, class "ABC" dry chemical extinguishers. Locate fire extinguishers where effective for the intended purpose, but not less than one on each floor near each usable stairwell.
 - 1. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking hazardous fire exposure areas.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Provide supervision of welding operations, combustion type temporary heating units, and sources of fire ignition.
- B. Barricades, Warning Signs and Lights - Comply with standard and code requirements for erection of barricades. Paint appropriate warning signs to inform personnel and the public of the hazard being protected against. Where needed, provide temporary fencing, barricades, warning lines, barriers and the like, as required to segregate the construction areas from existing facilities, occupants and the public. Also, where needed, provide lighting, including flashing lights.
- C. Security Enclosures and Lockup - Install temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism and theft. Where materials and equipment must be stored, provide a secure lockup. The Owner is not responsible for Contractor's losses due to damage or theft by vandals.

1.12 TERMINATION AND REMOVAL

- A. Remove each facility when the need has ended, or replaced by a permanent facility, or no later than Substantial Completion. Complete or restore construction delayed because of interference with the facility. Repair damaged work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
- B. Temporary facilities are property of the Contractors.

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PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 6000**PRODUCT REQUIREMENTS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 PRODUCTS

- A. Products are items purchased for incorporation in the Work, whether purchased for the Project taken from previously purchased stock.
 - 1. **Named Products** are items identified by manufacturer's product name, including make or model designation indicated in the manufacturer's product literature.

1.03 MATERIALS

- A. Materials are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed or installed to form a part of the Work.

1.04 EQUIPMENT

- A. Equipment is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping. Where each activity is in relation to the Contractor's construction schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether revisions are required to ensure that current and subsequent activities will be completed with the Contract time.

1.05 SOURCE LIMITATIONS

- A. To the fullest extent possible, provide products of the same kind, from a single source.
 - 1. When the Contractor has the option of selection between two or more products, the product selected shall be compatible with products previously selected.

1.06 NAMEPLATES

- A. Except for required labels and operating data, do not attach manufacturer's nameplates or trademarks on surfaces exposed to view in occupied spaces or on the exterior.
 - 1. **Equipment Nameplates** - Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an inconspicuous accessible surface. The nameplate shall contain the following information and essential operating data.

1.07 PRODUCT DELIVER, STORAGE AND HANDLING

- A. Deliver, store, and handle products in accordance with manufacturer's recommendations, using methods that will prevent damage, deterioration and loss.

1. Schedule delivery to minimize long-term storage and prevent overcrowding construction spaces. Coordinate with installation to ensure minimum holding time for items that are flammable, hazardous, easily damaged or sensitive to deterioration, theft, and other losses.
2. Deliver products in manufacturer's original sealed container or packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
3. Inspect products on delivery to ensure compliance with Contract Documents and to ensure that products are undamaged and properly protected.
4. Store products to facilitate inspection and measurement of quantity or counting of units. Store heavy materials away from the structure in a manner that will not endanger supporting construction.
5. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
6. All flammable substances shall be brought to the site daily and unused materials removed at the end of the workday.
7. In the event that materials are exposed to the elements, they shall be marked as unacceptable and immediately removed from the site. They may not be used.
8. On-site storage of materials are the responsibility of the Contractor. The Owner is not responsible for Contractor's losses due to damage or vandalism.

1.08 PRODUCT SELECTION

- A. Provide products that comply with the Contract Documents, are undamaged and unused at installation. Provide products complete with all accessories, trim, and finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

1.09 STANDARD PRODUCTS

- A. Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

1.10 NON-PROPRIETARY SPECIFICATIONS

- A. When Specifications list products or manufacturers that are available and may be used but do not restrict the Contractor to use of these products only, the Contractor may propose any product that complies with Contract requirement.

1.11 DESCRIPTIVE SPECIFICATION REQUIREMENTS

- A. Where Specifications describe a product, listing characteristics required with or without use of brand name, provide a product that provides the characteristics and otherwise complies with requirements.
 1. **Visual Matching** - Where Specifications require matching a sample, the Architect's decision on whether a proposed product matches in final. Where no product matches and complies with other requirements, comply with provisions for substitutions" for selection of a matching product in another category.

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2. **Visual Selection** - Where requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures" or a similar phrase, select a product that complies with other requirements. The Architect will select color, pattern, and texture from the product line selected.

1.12 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products. Anchor each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect to ensure freedom from damage and deterioration at time of Substantial Completion.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 7000**EXECUTION AND CLOSEOUT REQUIREMENTS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 CLEANING

A. **General:**

1. Execute cleaning, during progress of the Work, and at completion of the Work, as required by General Conditions and as herein specified.
2. Maintain premises and properties free from accumulations of waste, debris, and rubbish, caused by operations. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces soiled by the execution of the work, leave project clean and ready for occupancy.
3. Cleaning shall include all interior and exterior surfaces including the project site, which have been soiled by the Contractor, Subcontractors, material men, or any other persons or procedures engaged by the Contractor to complete the work.
4. Refer to Sections of the Specifications for cleaning of specific products of work.

B. **Safety and Disposal Requirements:**

1. Standards: Maintain project in accordance with State Building Code and local ordinances.
2. Hazards Control:
 - a. Store volatile wastes in covered metal containers, and remove from premises.
 - b. Provide adequate ventilation during use of volatile or noxious substances.
3. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - a. Do not burn or bury rubbish and waste materials on project site.
 - b. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - c. Do not dispose of wastes into streams or waterways.

C. **Materials:**

1. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
2. Use only those cleaning materials and methods recommended by manufacturer or surface material to be cleaned.
3. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

D. During Construction:

1. Execute cleaning to ensure that the buildings, the site, and adjacent properties are maintained free from accumulations of waste materials and rubbish and windblown debris, resulting from construction operations on a daily basis.
2. Provide on-site containers for collection of waste materials, debris and rubbish.
3. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas off Owner's property.
4. Handle materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.
5. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

E. Dust Control:

1. Wet down dry materials and rubbish to control dust and prevent blowing dust.
2. Clean interior spaces prior to the start of finish painting and continue cleaning on an as needed basis until painting is finished.

F. Final Cleaning:

1. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
2. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of site-exposed interior and exterior surfaces, and all work areas, to verify that the entire Work is clean.
3. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds which have been soiled by the Contractor's operations.

1.03 MAINTENANCE MANUALS AND INSTRUCTIONS

- A. The Contractor shall, upon Substantial Completion of the work, submit rough drafts of maintenance schedules, maintenance manuals, and all approved Shop Drawings, presenting full details for care and maintenance of visible surfaces and all equipment furnished and installed under the Contract.
- B. Maintenance shall consist of manufacturers' catalog cuts with descriptive information, lubricating and maintenance instructions, parts lists, usage instructions, names, addresses and telephone numbers where replacement parts and service can be quickly obtained, and all other information required for the Owner to use, maintain, and service the items properly.
- C. Upon the Architect's approval of drafts, submit three (3) corrected copies properly bound in a logical and well-arranged order, with an index, for the Owner's use.

1.04 WARRANTIES AND BONDS

- A. **General:** Compile specified warranties and bonds, review to verify compliance with Contract Documents, and submit to the simultaneously to the Commissioning Agent and Architect for their review and transmittal to the Owner.

B. Submittal Requirements:

1. Assemble four original signed copies of warranties, bonds and service and maintenance contracts, executed by Officers of each of the respective manufacturers, suppliers, and subcontractors.
2. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
 - a. Product or work item.
 - b. Firm, with name of principal, address and telephone number.
 - c. Scope.
 - d. Date of beginning of warranty, bond or service and maintenance contract will commence upon date of Substantial Completion as established by the Architect.
 - e. Duration of warranty, bond or service maintenance contract.
 - f. Provide information for Owner's personnel:
 1. Proper procedure in case of failure.
 2. Instances which might affect validity of warranty or bond.
 - g. Contractor, name of responsible principal, address and telephone number.

C. Form of Submittals: Prepare in four packets and in the following format:

1. Size 8-1/2 inch by 11 inch; punch sheets for 3-ring binder. Fold larger sheets to fit into binders.
2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List Title or Project and Name of Contractor.
3. Binders: Commercial quality, three ring, with durable and cleanable plastic covers.

D. Time of Submittals:

1. For equipment or component parts of equipment put into service during progress of construction, submit documents within ten days after inspection and acceptance. Otherwise, make submittals within ten days after acceptance, listing the date of acceptance as the start of warranty period.

E. Submittals Required: Submit warranties, bonds, and service and maintenance contracts as specified in the respective Sections of the Specifications.**1.05 CLOSEOUT REQUIREMENTS**

- A. **Punch List:** When the Architect reviews the work for Substantial Completion, he will prepare and issue to the Contractor a "punch list" of items to be corrected before final payment will be made. Such punch list shall not be construed as all-inclusive of the work, which the Contractor will be required to perform before final payment.
- B. **Substantial Completion:** Architect will prepare and issue a Certificate of Substantial Completion, A.I.A. G704, complete with signatures of Owner and Contractor, accompanied by list of items to be completed or corrected, as verified and amended by the Architect.
- C. **Final Inspection:**
 1. Contractor shall submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Project has been inspected for compliance with Contract Documents.
 - c. Work has been completed in accordance with Contract Documents.

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- d. Equipment and systems have been tested in the presence of Owner's Representative and are operational.
 - e. Project is completed, and ready for final inspection.
 2. Architect will begin final inspection within seven days after receipt of certification.
 3. Should the Architect consider the Work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.
 4. Should the Architect consider that work is not finally complete:
 - a. He shall notify Contractor, in writing, stating reasons.
 - b. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to the Architect certifying that Work is complete.
 - c. Architect will inspect the Work.
- D. **Closeout Submittals:**
 1. Project Record Documents.
 2. Operating and Maintenance Data.
 3. Extended Guarantees and Warranties.
 4. Provide three (3) bound and tabbed hard copies and one electronic thumb drive.
- E. **Evidence of Payments, and Release of Liens:**
 1. Contractor's Affidavit of Payment of Debts and Claims, AIA G706.
 2. Contractor's Affidavit of Release of Liens, AIA G706A, with:
 - a. Consent of Surety to Final Payment: AIA G707.
 - b. Contractor's release or waiver of liens.
 - c. Separate releases or waivers of liens for subcontractors, suppliers and others with lien rights against property of Owner, together with list of those parties.
 3. All submittals shall be duly executed before delivery to the Architect.
- F. **Final Application and Certificate for Payment:**
 1. Contractor shall submit final application in accordance with requirements of General and Supplementary Conditions.
 2. Architect will issue final certificate in accordance with provisions of Conditions of the Contract.
 3. **NOTE:** Prior to issuance of the Certificate for Final Payment by the Architect, all requirements contained in this Paragraph entitled "Closeout Requirements" and other requirements of the Conditions of the Contract shall be executed, received and approved by the Architect.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 7329
CUTTING AND PATCHING

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. Section includes procedural requirements for cutting and patching.

1.02 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.03 QUALITY ASSURANCE

- A. General: The General Contractor shall take reasonable care prior to all cutting and drilling in order to minimize unintended damage to concealed conduits, cables, pipes, reinforcing steel, etc. In circumstances where the absence of such concealed elements is not established conclusively, utilize detection and mapping technology, e.g., X-ray or Sub-surface Interface Radar (SIR), to locate any such elements that may be present before proceeding with the cutting or drilling work.
- B. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- C. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or which results in increased maintenance or decreased operational life or safety. Operational Elements include the following:
 - 1. Air or smoke barriers.
 - 2. Fire-protection systems.
 - 3. Control systems.
 - 4. Communication systems.
 - 5. Electrical wiring systems.
 - 6. Operating systems of special construction.
- D. Miscellaneous Elements: Do not cut and patch elements or related components in a manner that could change their load-carrying capacity, which results in reducing their capacity to perform as intended, or which results in increased maintenance or decreased operational life or safety. Miscellaneous Elements include the following:
 - 1. Water, moisture, or vapor barriers.

2. Membranes and flashings.
 3. Cement plaster stucco, substrate, scratch, base and finish coats to match existing.
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.04 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing and In-Place Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, shall match the visual and functional performance of existing materials.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to prevent interruption of services to occupied areas.
1. If existing services to occupied areas must be interrupted, coordinate and receive approval of the interruption of services prior to starting work.

3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that shall eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair wall surfaces in the existing space. Provide an even surface of uniform finish, color, texture, and appearance. Repair existing wall finishes with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

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5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 7839**RECORD DOCUMENTS****PART 1 – GENERAL****1.01 GENERAL**

- A. Attention is directed to the Drawings and the Bidding and Contract Requirements, including General and Supplementary Conditions, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. Provide all plant facilities, labor, materials, tools, equipment, transportation, supervision, and related work necessary to complete the work specified in this section and as shown on the drawings.

1.02 SUMMARY

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:
 - 1. Record prints
 - 2. Record specifications
 - 3. Final record drawings
 - 4. Record coordination drawings
- B. Related work includes, but is not limited to, the following work under other Sections:
 - 1. Section 01 3300 – Submittal Procedures for General requirements for submittals
 - 2. Section 01 7000 – Execution and Closeout Procedures for other submittals required at the completion of the Work.
 - 3. Section 01 9119 – Building Enclosure Commissioning Requirements for documentation required for commissioning.

1.03 DEFINITIONS

- A. Record Prints are full sets of black-line or blue-line prints of Contract Drawings, kept at the Project Site and marked regularly to record as-built conditions as specified herein.
- B. Final Record Drawings: Electronic files of drawings prepared from completed and approved Record Prints showing as-built conditions.

1.04 SUBMITTALS

- A. Record Prints: Periodic submittal of prints of Drawings marked to indicate Work completed and changes in the Work, as specified in this Section:
 - 1. Number of Copies: Submit one electronic copy in pdf format of marked-up Record Prints showing as-built conditions.
- B. Record Specifications: Submit one electronic copy of Project's Specifications, including addenda and contract modifications. Neatly note in red ink locations of Addendum and Modification items with reference to Addendum number or Modification number.

- C. Record Product Data: Submit one electronic copy of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous recordkeeping requirements and submittals in connection with various construction activities. Submit one paper copy of each submittal.

PART 2 – PRODUCTS

2.01 RECORD DOCUMENTS

- A. The Contractor shall maintain Record Prints of architectural drawings.

2.02 RECORD PRINTS

- A. During the progress of the Work, the Contractor shall keep on file at all times two (2) complete and separate sets of black line prints of the entire set of Contract Drawings. Each set shall be updated daily to record the following information:
 - 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 2. Types of items requiring marking include, but are not limited to, the following:
 - a. Actual equipment locations.
 - b. Changes made by Addenda
 - c. Changes made by Change Order or Construction Change Directive.
 - d. Changes made following Architect's written orders and supplemental instructions.
 - e. Details not on the original Contract Drawings.
 - f. Field records for variable and concealed conditions.
 - g. Record information on the Work that is shown only schematically.
 - 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - 6. Note Addendum numbers, Construction Change Directive numbers, Alternate numbers, Change Order numbers, and similar identification, where applicable.

2.03 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 - 5. Note related Addenda, Change Orders, Record Product Data, and Record Drawings where applicable.

2.04 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.05 RECORD COORDINATION DRAWINGS

- A. Record progress of the Work and modifications and corrections on a set of prints of approved coordination drawings. Follow procedures as for Record Prints.
- B. Final Record Coordination Drawings shall be prepared using information from approved record copies of coordination drawings as for Final Record Drawings.

2.06 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

2.07 FINAL RECORD DRAWINGS

- A. Before completion of the Work, and when directed by the Architect, the Contractor and all indicated subcontractors shall perform the following:
 - 1. Transcribe all previously recorded information from Record Prints onto the electronic files.
 - 2. Make all final changes and corrections to the Final Record Drawings.

3. The Contractor or Filed / Trade Sub-Contractor shall sign each drawing for which they are responsible, as certification that the work was installed as shown.
4. Deliver signed, completed Final Record Drawings to Architect.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- C. Acceptance by the Architect of the completed Final Record Drawings shall be a prerequisite for Substantial Completion.
- D. Shop Drawings will not be acceptable as Final Record Drawings for the Project.
- E. The Architect shall be the sole judge of the acceptability of Final Record Drawings.

PART 3 – EXECUTION

3.01 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and Owner's Representative's reference during normal working hours.

END OF SECTION

SECTION 01 9119**BUILDING ENCLOSURE COMMISSIONING****PART 1 – GENERAL****1.01 DESCRIPTION**

- A. Commissioning. Building enclosure commissioning is a systematic process of ensuring that all building enclosure systems perform interactively according to the Owner's Project Requirements and the owner's operational needs.

1. This project will begin the commissioning process in the design phase and continuing through the acceptance and warranty phases with actual verification of performance. The commissioning process shall encompass and coordinate the traditionally separate functions of system documentation and performance testing.
2. The commissioning process does not take away from or reduce the responsibility of the system designers or installing contractors to provide a finished and fully functioning product.
3. Abbreviations: The following are common abbreviations used in the Specifications and in the Commissioning Plan. Definitions are found in Section 1.05.

DOR-	Designer of Record
BECxA-	Building Enclosure Commissioning Agent
Cx-	Commissioning
Cx Plan-	Commissioning Plan
MSBA-	Massachusetts School Building Authority
FPT-	Functional Performance Testing
GC-	General Contractor
OPM-	Owner's Project Manager
PFC-	Prefunctional Checklist
Subs-	Subcontractors to General Contractor

1.02 COORDINATION

- A. Commissioning Team. The members of the commissioning team consist of the Halifax Public Schools, the Owner's Project Manager (OPM), Building Enclosure Commissioning Agent (BECxA), Massachusetts School Building Authority (MSBA), the architect and design engineers (DOR), the Contractor (GC) any other installing subcontractors.
- B. Management. The BECxA is hired by the Massachusetts School Building Authority (MSBA) directly. The BECxA directs and coordinates the commissioning activities and the reports to MSBA. All members work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents. The BECxA's responsibilities are the same regardless of who hired the BECxA.

- C. Scheduling. The BECxA will work with the GC according to established protocols to schedule the commissioning activities. The BECxA will provide sufficient notice to the GC for scheduling commissioning activities. The GC will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.
- D. The BECxA will provide the initial schedule of primary commissioning events at the commissioning scoping meeting. The Commissioning Plan provides a format for this schedule. As construction progresses more detailed schedules are developed by the BECxA. The Commissioning Plan also provides a format for detailed schedules.

1.03 COMMISSIONING PROCESS

- A. Commissioning Plan. The commissioning plan provides guidance in the execution of the commissioning process. Just after the initial commissioning scoping meeting the BECxA will finalize the plan, which is then considered the "final" plan.
- B. Commissioning Process. The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur.
 - 1. Commissioning during construction begins with a scoping meeting attended by the BECxA where the commissioning process is reviewed with the commissioning team members. All commissioning tests are specified in the respective technical specification sections.
 - 2. Additional meetings will be required throughout construction, attended by the BECxA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.
 - 3. Product documentation is submitted to the BECxA during the normal submittals process, including detailed test procedures, shop drawings, and product literature.
 - 4. The BECxA works with the GC and Subs in developing commissioning plans and documentation formats
 - 5. The GC and Subs, under their own direction, execute and document the approved testing plans. This may include the BECxA witnessing testing of selected assemblies.
 - 6. The BECxA develops specific assembly performance test requirements. The GC and Subs develop the specific assembly performance test procedures for the BECxA to review.
 - 7. The procedures are executed and documented by the GC and Subs, under the direction of, and observed by the BECxA.
 - 8. Items of non-compliance in material or installation are corrected at the GC's/Sub's expense and the assembly retested at the GC's and/or Subs expense.
 - 9. The BECxA reviews the O&M documentation for completeness.
 - 10. Commissioning is completed before Substantial Completion.
- C. Building Envelope Review Process. The following narrative provides a brief overview of the typical building envelope review tasks during construction and the general order in which they occur.
 - 1. Building envelope review during construction begins at the Cx scoping meeting attended by the BECxA where the building envelope review process is reviewed with the team members.

2. Additional meetings will be required throughout construction, attended by the BECxA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.
3. Building envelope documentation is submitted to the BECxA during the normal submittals process, including detailed installation procedures, shop drawings and product literature.
4. The BECxA works with the Subs in developing the mock-up program for building envelope including which configurations should have mock-ups, when they should be completed, notification requirements of completion, tests to be performed and who shall witness and evaluate each mock-up.
5. As construction progresses, the BECxA will periodically perform field visits of the building envelope components and installation and document any issues or deficiencies identified.
6. The Subs, under their own direction, will complete mock-ups in accordance with the building envelope mock-up program and notifies the building envelope team that the mock-ups are ready for evaluation. The BECxA evaluates the mock-ups and documents observations and test results as applicable.
7. The mock-up test procedures are created and executed by the Subs and witnessed by the BECxA. Items of non-compliance in material, configuration or installation are corrected at the Sub's expense and the system retested.
8. Periodically between installations of each building envelope component, the BECxA will perform a periodic inspection and final punch list inspection of each building envelope component and document items of non-compliance in material, configuration or installation.

1.04 RESPONSIBILITIES

- A. The responsibilities of various parties in the commissioning process and building envelope review process are provided in this section.
- B. All Parties
 1. Follow the Commissioning Plan.
 2. Attend commissioning scoping meeting and additional meetings, as necessary.
- C. DOR - The responsibilities of the DOR, during construction and acceptance phases in addition to those listed in (B) are:
 1. *Construction and Acceptance Phase*
 - a. Review and approve Final Commissioning Plan.
 - b. Perform the normal review of Contractor submittals.
 - c. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to commissioned equipment to the BECxA.
 - d. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to building envelope systems to the BECxA.
 - e. Attend Envelope Review process meetings, as necessary.
 - f. Coordinate resolution of assembly deficiencies identified during commissioning and envelope review processes, according to the contract documents.
 - g. Prepare and submit final as-built Owner's Project Requirements documentation for inclusion in the O&M manuals. Review and approve the O&M manuals.

2. *Warranty Period*

- a. Assist the BECxA as necessary in the deficiency corrections required by the specifications.

D. Building Envelope Commissioning Authority (BECxA)

The BECxA is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The BECxA may assist with problem solving, non-conformance or deficiencies, but ultimately that responsibility resides with the general contractor and the DOR. The primary role of the BECxA is to develop and coordinate the execution of a testing plan, observe and document performance that systems are functioning in accordance with the documented Owner's Project Requirements and in accordance with the Contract Documents. The Contractors will provide all tools or the use of tools to start, checkout and functionally test building enclosure assemblies or systems.

1. *Construction and Acceptance Phase*

- a. Coordinates and directs the commissioning activities in a logical, sequential and efficient manner using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties.
- b. Attend additional meetings as required throughout construction, with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.
- c. Review the commissioning work and, with MSBA and OPM, ensure that commissioning activities are being scheduled into the master schedule.
- d. Revise, as necessary, the Commissioning Plan.
- e. Request and review additional information required to perform commissioning tasks, including O&M materials.
- f. Before startup, gather and review the test sequences and test procedures and work with contractors and design engineers until sufficient clarity has been obtained, in writing, to accept testing procedures.
- g. Review normal Contractor submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the DOR reviews.
- h. Assist, as necessary, in developing a mock-up program for building envelope systems with Subs.
- i. Review GC/Subs test procedures and checklists.
- j. Perform site visits, as necessary, to observe component and assembly installations. Attend selected planning and job-site meetings to obtain information on construction progress.
- k. Coordinate and witness manual functional performance tests performed by installing contractors. Coordinate retesting as necessary until satisfactory performance is achieved. Review the documentation of this testing and provide report of results and any deficiencies identified during the procedures.
- l. Maintain a master deficiency and resolution log and a separate testing record. Provide MSBA with written progress reports and test results with recommended actions.
- m. Compile and maintain commissioning record documents.
- n. Review the preparation of the O&M manuals.
- o. Provide a final commissioning report (as described in this section).

E. Massachusetts School Building Authority (MSBA)

The responsibilities of MSBA, during construction and acceptance phases in addition to those listed in (B) are:

1. *Construction and Acceptance Phase*

- a. Manage the contract of the DOR, BECxA, OPM and of the GC.

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- b. Provide final approval for the completion of the commissioning and building envelope review work.
- c. Facilitate the coordination of the commissioning work by the BECxA and with the OPM and BECxA, ensure that all activities are being scheduled into the master schedule.
- d. Review and approve the Final Commissioning Plan.
- e. Review commissioning and building envelope review progress and deficiency reports.
- f. Coordinate the resolution of non-compliance and design deficiencies identified in all phases of commissioning and building envelope review.

F. Contractor (GC)

The responsibilities of the GC, during construction and acceptance phases in addition to those listed in (B) are:

1. *Construction and Acceptance Phase*

- a. Facilitate the coordination of the commissioning work and building envelope review work by the BECxA, and with MSBA to ensure that commissioning activities are being scheduled into the master schedule.
- b. Include the cost of commissioning and building envelope review in the total contract price.
- c. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to commissioned assemblies to the BECxA and DOR.
- d. In each purchase order or subcontract written, include requirements for submittal data, O&M data, commissioning tasks, building envelope review tasks.
- e. Ensure that all Subs execute their commissioning and building envelope review responsibilities according to the Contract Documents and schedule.
- f. A representative shall attend a commissioning scoping meeting and other necessary meetings scheduled by the OPM to facilitate the Cx process to facilitate the building envelope review process.
- g. Prepare O&M manuals, according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions.

G. Sub-Contractors (Subs)

The responsibilities of the Subs, during construction and acceptance phases in addition to those listed in (B) are:

1. *Construction and Acceptance Phase*

- a. Facilitate the coordination of the commissioning work and building envelope review work by the BECxA, and with MSBA.
- b. Include the cost of commissioning and building envelope review in the sub-bid contract price.
- c. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to commissioned assemblies to the BECxA and DOR.
- d. In each purchase order or subcontract written, include requirements for submittal data, O&M data, commissioning tasks, building envelope review tasks.
- e. Execute commissioning and building envelope review responsibilities according to the Contract Documents and schedule.
- f. A representative shall attend a commissioning scoping meeting and other necessary meetings scheduled by the OPM to facilitate the Cx process to facilitate the building envelope review process.
- g. Prepare O&M manuals, according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions.

1.05 DEFINITIONS

- A. Acceptance Phase - phase of construction after startup and initial checkout when functional performance tests, O&M documentation review and training occurs.
- B. Basis of Design - The basis of design is the documentation of the primary thought processes and assumptions behind design decisions that were made to meet the Owner's Project Requirements. The basis of design describes the systems, components, conditions and methods chosen to meet the intent. Some reiterating of the Owner's Project Requirements may be included.
- C. Building Envelope Commissioning Authority (BECxA) - an independent agent, not otherwise associated with the DOR team members or the Contractor, though he/she may be hired as a subcontractor to them. The BECxA directs and coordinates the day-to-day commissioning activities. The BECxA does not take an oversight role like MSBA or the DOR. The BECxA is part of the MSBA team and shall report directly to MSBA.
- D. Commissioning Plan - an overall plan, developed before or after bidding, that provides the structure, schedule and coordination planning for the commissioning process.
- E. Deficiency - a condition in the installation or function of a component, or assembly that is not in compliance with the Contract Documents (that is, does not perform properly or is not complying with the Owner's Project Requirements).
- F. Design Narrative or Design Documentation - sections of either the Owner's Project Requirements or Basis of Design.
- G. Functional Performance Test (FPT) - test of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. The commissioning authority develops the functional test procedures in a sequential written form, coordinates, oversees and documents the actual testing, which is usually performed by the installing contractor or vendor. FPTs are performed after prefunctional checklists and startups are complete.
- H. Non-Compliance - see Deficiency.
- I. Non-Conformance - see Deficiency.
- J. Owner-Contracted Tests - tests paid for by the Owner outside the OPM's contract and for which the BECxA does not oversee.
- K. Owner's Project Requirements - a dynamic document that provides the explanation of the ideas, concepts and criteria that are considered to be very important to the Owner. It is initially the outcome of the programming and conceptual design phases.
- L. Prefunctional Checklist (PFC) - a list of items to inspect and elementary component tests to conduct to verify proper installation of components, provided by the BECxA to the Sub. Prefunctional checklists are primarily static inspections and procedures to prepare the assembly for initial operation. The word prefunctional refers to before functional performance testing. Prefunctional checklists augment and are combined with the manufacturer's start-up checklist. Even without a commissioning process, contractors typically perform some, if not many, of the prefunctional checklist items a commissioning authority will recommend. However, few contractors document in writing the execution of these checklist items. Therefore, for most equipment, the contractors execute the checklists on their own. The commissioning authority only requires that the procedures be documented in writing, and does not witness much of the prefunctional checklisting, except for larger or more critical pieces of equipment.
- M. Test Procedures - the step-by-step process which must be executed to fulfill the test

requirements. The test procedures are developed by the BECxA.

- N. Test Requirements - requirements specifying what modes and functions, etc. shall be tested. The test requirements are not the detailed test procedures. The test requirements are specified in the Contract Documents.
- O. Warranty Period - warranty period for entire project, including equipment components. Warranty begins at Substantial Completion and extends for at least one year, unless specifically noted otherwise in the Contract Documents and accepted submittals.

1.06 SYSTEMS TO BE COMMISSIONED

- A. The following systems will be commissioned in this project. See Commissioning Plan for additional information.

Windows and Doors

1.07 BUILDING ENVELOPE COMPONENTS TO BE REVIEWED

- A. The following components of the building envelope will be reviewed by the BECxA in this project as may be applicable.

Windows and Doors

PART 2 – PRODUCTS

2.01 TEST EQUIPMENT

- A. All standard testing equipment required to perform testing shall be provided by the Division contractor for the equipment being tested. For example, the contractor of Division 8 shall ultimately be responsible for all standard window opening alteration as required to properly perform commissioning testing.
- B. Special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and left on site.
- C. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. All equipment shall be calibrated according to the manufacturer's recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.

PART 3 – EXECUTION

3.01 MEETINGS

- A. Scoping Meeting. Within 14 days of commencement of construction, the BECxA will attend a commissioning scoping meeting with the entire commissioning team in attendance. This meeting will also outline the building envelope review program. Information gathered from this meeting will allow the BECxA to revise the Commissioning Plan to its "final" version, which will also be distributed to all parties.
- B. Miscellaneous Meetings. Other meetings will be attended by the BECxA as construction progresses. These meetings will cover coordination, deficiency resolution and planning issues with particular Subs. The BECxA will attend these meetings and will minimize unnecessary time being spent by Subs. The commissioning meetings may be held monthly, until the testing phase begins, when they may be held as frequently as once per week.

3.02 REPORTING

- A. The BECxA will provide a final report to MSBA, following the final execution of the Commissioning Plan, including any necessary investigative testing. Standard format of this report is provided and referenced in the Commissioning Plan.
- B. After each site visit, the BECxA will provide a report to the OPM and MSBA.
- C. The BECxA will regularly communicate with all members of the commissioning team, keeping them apprised of commissioning progress and scheduling changes through memos, progress reports, etc.
- D. Testing or review approvals and non-conformance and deficiency reports are made regularly with the review and testing as described in later sections.

3.03 PREFUNCTIONAL CHECKLISTS

- A. The following procedures apply to all assemblies to be commissioned, according to Section 1.06 - Systems To Be Commissioned.
- B. General. Pre-functional checklists are important.
- C. Development of Test Procedures. The BECxA shall identify specific test procedures and forms to verify and document proper operation of each assembly. Each Sub or vendor responsible to execute a test shall provide limited assistance to the BECxA in developing the procedures review (answering questions about equipment, operation, sequences, etc.). Prior to execution, the BECxA shall identify the test procedures to the Sub(s) who shall review the tests for feasibility, safety, equipment and warranty protection. The BECxA may submit the tests to the DOR for review, if requested. Representative test formats and examples (not designed for this facility) are found at the end of this section.
- D. Coordination and Scheduling. The Subs shall provide sufficient notice to the BECxA regarding their completion schedule for the prefunctional checklists of all assemblies. The BECxA will schedule functional performance tests through the OPM and affected Subs. The BECxA shall direct, witness and document the functional performance testing of all equipment and systems. The Subs shall execute the tests.
- E. Problem Solving. The BECxA will recommend solutions to problems found, however the burden of responsibility to solve, correct and retest problems is with the OPM, Subs and DOR.

3.04 DOCUMENTATION, NON-CONFORMANCE AND APPROVAL OF TESTS

- A. Documentation. The BECxA shall witness and document the results of all performance tests using the specific procedural forms developed for that purpose. Prior to testing, these forms are provided to the OPM for review and approval and to the Subs for review. The BECxA will include the filled out forms with the turnover documents.
- B. Non-Conformance.
 - 1. The BECxA will record the results of the performance test on the procedure or test form. All deficiencies or non-conformance issues shall be noted and reported to the OPM.
 - 2. Corrections of minor deficiencies identified may be made during the tests at the discretion of the BECxA. In such cases the deficiency and resolution will be documented on the procedure form.
 - 3. Every effort will be made to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures. However, the BECxA will

not be pressured into overlooking deficient work or loosening acceptance criteria to satisfy scheduling or cost issues, unless there is an overriding reason to do so at the request of MSBA.

4. As tests progress and a deficiency is identified, the BECxA discusses the issue with the executing contractor.
 - a. When there is no dispute on the deficiency and the Sub accepts responsibility to correct it:
 - 1) The BECxA documents the deficiency and the Sub's response and intentions and they go on to another test or sequence. The Sub corrects the deficiency, signs the statement of correction at the bottom of the non-compliance form certifying that the equipment is ready to be retested and sends it back to the BECxA.
 - 2) The BECxA reschedules the test and the test is repeated.
 - b. If there is a dispute about a deficiency, regarding whether it is a deficiency or who is responsible:
 - 1) The deficiency shall be documented on the non-compliance form with the Sub's response and a copy given to the OPM and to the Sub representative assumed to be responsible.
 - 2) Resolutions are made at the lowest management level possible. Other parties are brought into the discussions as needed. Final interpretive authority is with the DOR. Final acceptance authority is with MSBA.
 - 3) The BECxA documents the resolution process.
 - 4) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency, signs the statement of correction on the non-compliance form and provides it to the BECxA. The BECxA reschedules the test and the test is repeated until satisfactory performance is achieved.
 5. The Contractor shall respond in writing to the BECxA and OPM at least as often as commissioning meetings are being scheduled concerning the status of each apparent outstanding discrepancy identified during commissioning. Discussion shall cover explanations of any disagreements and proposals for their resolution.
 6. The BECxA retains the original non-conformance forms until the end of the project.
 7. Any required retesting by any contractor shall not be considered a justified reason for a claim of delay or for a time extension by the prime contractor.
- C. Approval. The BECxA notes each satisfactorily demonstrated function on the test form. Formal approval of the functional performance test is made later after review by the BECxA and by the MSBA, if necessary. The BECxA recommends acceptance of each test to MSBA. MSBA gives final approval of each test by providing a signature on the test document.

3.05 BUILDING ENVELOPE MOCK-UPS

- A. The following procedures apply to all components to be reviewed for the building envelope, according to Section 1.07 - Building Envelope Components To Be Reviewed.
- B. General. Mock-ups are important to ensure that the building envelope construction is per the contract requirements. Those contract requirements are tested to verify they meet the needs of the facility. Assembling a mock-up allows for inspection and verification of materials used, installation techniques and system integrity prior to installing components on the building. The mock-ups must be successfully evaluated and approved prior to components being installed on the building.
- C. Mock-Up Evaluation Program. The BECxA may assist the contractors responsible for assembling of any mock-up configurations in developing detailed mock-up evaluation program.

The primary role of the BECxA in this process is to ensure that there is a written plan to facilitate these procedures being completed. Sub-contractors responsible for mock-up assembly and testing are identified in the commissioning scoping meeting.

1. The BECxA meets with the installing subs to review the need for mock-ups of specific envelope areas and configurations. Also reviewed are the requirements of each mock-up, as well as who is responsible for each.
2. From the mock-up meetings, the subs create procedures for each mock-up that include materials to be used, installation techniques, inspections and testing requirements. These procedures are provided to the BECxA for review and approval.
3. The BECxA reviews and approves the procedures and the format for documenting them, noting any procedures that need to be added.

D. Execution of Mock-Up Program.

1. Once the mock-up procedure is approved, the assembly can begin under the direction and executed by the Sub or vendor responsible.
2. At a minimum of two weeks prior to completing the mock-up, the Subs and vendors schedule the mock-up evaluation with the OPM and BECxA.
3. The BECxA shall inspect each mock-up and observe any required testing. Testing is performed by the installing contractor.
4. The BECxA shall document the results of the mock-up inspection and testing, as well as any deficiencies identified and submit a report of the findings to the BECxA who will in turn submit it to MSBA.

E. Deficiencies, Non-Conformance and Approval of Mock-Ups.

1. The Subs shall clearly list any outstanding items of the initial mock-up inspection and testing procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding deficiencies are provided to the BECxA within two days of test completion.
2. The BECxA reviews the report and submits either a non-compliance report or an approval form to the Sub or OPM. The BECxA shall work with the Subs and vendors to correct and retest deficiencies or uncompleted items. The BECxA will involve the OPM and others as necessary. The installing Subs or vendors shall correct all areas that are deficient or incomplete in a timely manner, and shall notify the BECxA as soon as outstanding items have been corrected. When satisfactorily completed, the BECxA recommends approval of the mock-up for each configuration to the OPM.
3. Items left incomplete, which later cause deficiencies or delays during functional testing may result in back charges to the responsible party.

3.06 OPERATION AND MAINTENANCE MANUALS

A. Standard O&M Manuals.

1. The specific content and format requirements for the standard O&M manuals are detailed in Section 01700 - Contract Closeout.

2. DOR Contribution. The DOR will include in the beginning of the O&M manuals a separate section describing the systems including:
 - a. The Owner's Project Requirements narrative prepared by the DOR and provided as part of the bid documents, updated to as-built status by the DOR.
3. BECxA Review. Prior to substantial completion, the BECxA shall review the O&M manuals, documentation for systems that were commissioned to verify compliance with the Specifications. The BECxA will communicate deficiencies in the manuals to the OPM, MSBA or DOR, as requested.

B. Commissioning Manuals

1. Commissioning Record Data. The BECxA is responsible to compile, organize and index the commissioning data into labeled, indexed and tabbed, three-ring binders and deliver it to MSBA, to be included with the O&M manuals.
2. Final Report Details. The final commissioning report shall include an executive summary, list of participants and roles, brief building description, overview of commissioning and testing scope and a general description of testing and verification methods. For each commissioned assembly, the report should contain the disposition of the commissioning authority regarding the adequacy of the assembly, documentation meeting the contract documents in the following areas: 1) Assemblies meeting the project specifications, 2) Assembly installation, 3) Functional performance, and 4) Documentation and Owner's Project Requirements. All outstanding non-compliance items shall be specifically listed. Recommendations for improvement to equipment or operations, future actions, commissioning process change, etc. shall be provided. Each non-compliance issue shall be referenced to the specific test, inspection, etc. where the deficiency is documented.

3.07 WRITTEN WORK PRODUCTS

- A. The commissioning process generates a number of written work products described in various parts of the Specifications. The Commissioning Plan lists all the formal written work products, describes briefly their contents, who is responsible to create them, their due dates, who receives and approved them and the location of the specifications to create them. In summary the written products are:

Product	Developed By	Filled Out By
1. Owner's Project Requirements (OPR)	Owner / DOR	Owner/ DOR
2. Basis of Design	Owner / DOR	Owner / DOR
3. Final Commissioning Plan	BECxA	BECxA
4. Commissioning Schedules	BECxA with GC	BECxA
5. Sequence Clarifications	GC & DOR as needed	GC
6. Building Envelope Mock-Up Plan	GC	GC
7. Commissioning Progress Record	BECxA	BECxA
8. Final Commissioning Report	BECxA	BECxA
9. O&M Manual	GC & Subs	GC & Subs

END OF SECTION

WINDOW COMMISSIONING PLAN

Window Replacement Project

Halifax Elementary School

Halifax, Massachusetts

March 29, 2017

RBA Project No. 2017011

Prepared by:



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Letter of Transmittal

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1. OVERVIEW

The following presents the Window Commissioning Plan (WCP) and Specifications for the window replacement at the Halifax Elementary School in Halifax, Massachusetts. The plan defines the procedures for the commissioning of the window repairs and describes the functional performance tests to be performed. The purpose of the WCP is to provide a process for independent third-party verification that the installed performance of the windows meets or exceeds the minimum performance requirements set forth by the Owner's Project Requirements (OPR) and Contract Documents; to help verify that the applicable windows systems are installed according to manufacturer's recommendations, design requirements, and to industry accepted minimum standards; and to confirm that installing contractors provide adequate quality control. This plan will be updated throughout the commissioning process as necessary to further clarify the commissioning requirements and meet the OPR and design intent.

The requirements of this WCP shall in no way relieve the Contractor, Designer of Record (DOR) and other parties to this project of their respective contractual obligations to the Owner for meeting the specified performance levels in the design and construction of this project.

1.1 Owner's Project Requirements (OPR)

The work at the Halifax Elementary School is part of the Massachusetts School Building Authority's (MSBA) Accelerated Repair Program. As such, all repairs must be in accordance with the Massachusetts Stretch Energy Code (MSEC). The WCP is based on the requirements of the MSEC, the design drawings and specifications, and the corresponding approved submittals and shop drawings. Habeeb and Associates, Architects remains the DOR for the building envelope systems and maintains discretion over the final design and construction. Our construction phase commissioning services are intended to help verify that the construction is in accordance with the MSEC and H&A final design and approved submittals.

1.2 General Project Information

The existing windows at the Halifax Elementary School consist of wood and vinyl frames with monolithic glazing. The operable windows have deteriorated weatherstripping, if any, and the window related sealant is failing. The repair work includes replacing the existing windows with assemblies that have thermally broken aluminum frames and insulated glass components with recladding existing trim. Replacement of doorways is also included in the scope of the project.

Replacement of exterior sidings is contemplated but acceptance by MSBA is not confirmed. Review of siding replacement information is excluded from these commissioning services.

2. COMMISSIONING TEAM INFORMATION

The members of the commissioning team include the Owner's Project Manager (OPM), DOR, Contractor, Subcontractors, and Window Commissioning Agent (WCA). The general roles of each of these parties during the commissioning process are as follows:

OPM: Facilitate and support the commissioning process, and provide final approval for the commissioning work. Review any changes to the in-progress construction, and provide final resolution of issues. Any changes to the Contract Documents arising out of the WCP must be submitted, reviewed, and accepted in writing by the DOR.

DOR: Review and approve submittals, observe the in-progress construction, and provide final resolution of issues. Any changes to the Contract Documents arising out of the WCP must be submitted, reviewed and accepted in writing by the DOR.

Contractor and Subcontractor(s): Perform or coordinate required performance tests and quality control procedures, and provide assistance to the WCA for additional performance test or documentation of work in progress. The Contractor shall be responsible for coordinating and managing the commission responsibilities of each of the Subcontractors responsible for the windows.

WCA: Coordinate the commissioning process, oversee and document performance tests required by the Contractor or Subcontractor(s), perform performance tests, observe in-progress construction, and provide recommendation to the DOR. The WCA is not authorized to release, revoke, alter, or expand requirements of the Contract Documents, approve or accept any portion of the work, perform any duties of the Contractor, or perform duties of the DOR.

The following table identifies the parties in the construction commissioning process:

NAME	COMPANY	PHONE	E-MAIL
Owner – Halifax Public Schools			
Charlie Seelig	Town of Halifax	781-294-1316	cseelig@towm.halifax.ma.us
Owner – Massachusetts School Building Authority (MSBA)			
Evan Levesque	MSBA	617-720-4466	evan.levesque@massschoolbuildings.org
Owner's Project Manager (OPM)			
Jon Lemieux	Vertex Companies	888-298-5162	jlemieux@vertexeng.com
Designer of Record (DOR)			
Steven Habeeb	H&A Architects	781-871-9804	shabeeb@habeebarch.com
General Contractor			
T.B.D.			
Roof Commissioning Agent (WCA)			
Michael Flaherty	Russo Barr	781-273-1537 x33	mflaherty@russobarr.com

3. COMMISSIONING PROCESS

All work outlined in the WCP shall comply with the applicable building codes, the Contract Documents, and the following general specifications for commissioning work and procedures not otherwise specified.

1. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHREA): Guideline): The Commissioning Process, 2005 Edition
2. National Institute of Building Sciences (NIBS) Guideline 3: Exterior Enclosure Technical Requirements for the Commissioning Process, 2006 Edition.

The materials, components, systems, and assemblies that comprise the windows will be evaluated and performance tested as outlined in the WCP, and in accordance with each of the technical specifications associated with the design and construction of the windows.

3.1 Project Correspondence Protocol

The following protocols will be used on this project:

Issue	Protocol
Minor Verbal Clarifications	The Contractor shall direct all verbal requests for clarification to the DOR. The DOR will solicit input from the OPM and WCA where appropriate and provide write documentation of clarification for record.
Notification of Deficiencies	The DOR and WCA will note all deficiencies in site visit reports. Whenever possible, the DOR and WCA will provide verbal notice of deficiencies to the OPM upon identification. The DOR and OPM are responsible for providing direction for corrective action to the Contractor.
Scheduling Tests	The Contractor is responsible for scheduling all required performance tests and quality control procedures and for coordinating such tests with the WCA. The Contractor will include testing and quality control requirements in the weekly project schedule.
Request for Changes	The Contractor shall direct all requests for changes to the DOR. The DOR will solicit input from the OPM and WCA where appropriate, and the DOR and OPM will provide final approval of requests for changes.

3.2 Project Documentation Protocol

The following summarize the protocol for generating, distributing, and approving project documentation required for the commissioning process:

Documentation	Originator	Distribution	Input	Approval
Design Review	WCA	OPM, DOR	DOR, OPM	OPM
WCP	WCA	OPM, DOR	DOR, OPM	OPM
Submittals and Shop Drawings	Contractor	DOR, OPM, WCA	WCA	DOR
Site Visit Reports	DOR, WCA	All		OPM
Meeting Minutes	OPM	All	All	OPM
Requests for Information	Contractor	All	DOR, WCA	DOR
Test Reports	WCA, Contractor	All	DOR	OPM
Schedules	Contractor	All	WCA, OPM, DOR	OPM

3.3 Test Acceptance Criteria

The WCA may recommend performance testing not included in the contract documents. The WCA will provide recommended performance criteria for these tests for review and approval by the DOR and OPM.

Following performance testing, any deficiencies will be evaluated by the DOR and WCA to determine corrective action. The Contractor shall correct deficiencies and repeat test at no cost to the Owner. If a systemic problem is identified by the WCA during testing, the contractor will provide a repair and recommendation protocol, including a timeline for repair of all affected elements. Repaired elements shall not be concealed without review by the WCA and DOR.

If it is determined that a system is constructed according to the Contract Documents, but is not performing as intended, the Owner will decide whether modifications are required to bring the performance of the system to a level where the noted failure or deficiency is eliminated. If corrective work is performed, the Owner shall decide whether additional tests are required. All modifications and additional tests performed at the Owner's and OPM's direction will be eligible for additional compensation.

If tests cannot be completed because of a deficiency outside the scope of the repair work, the deficiency shall be documented and reported to the Owner, OPM and DOR. The Owner will determine how these deficiencies shall be resolved.

3.4 Acceptance Phase and Project Close-out

As part of project record closeout documentation at the completion of the work, the Contractor shall provide a system manual that includes all test reports, inspection reports and certificates, manufacturer operation instructions for all operable elements of the windows, and recommended maintenance frequency and maintenance requirements for each major building-exterior-enclosure system.

At the completion of construction, the WCA will provide a final commissioning report that includes a summary of the commissioning activities, all outstanding noncompliance items, and all relevant reports and documentation.

4. COMMISSIONING SPECIFICATION

The following summarizes the scope of work required to complete the commissioning process.

4.1 Window Commissioning Agent Responsibilities

- Review and provide recommendations for technical submittals and shop drawings related to the windows, after review by the DOR but before return to the Contractor, for conformance to the design intent and industry standards.
- Conduct periodic site visits to review the progress of the work and evaluate its compliance with the design documents and industry standards; The WCA will identify noncomplying work items to serve as an ongoing punch list updated after each site visit.
- Collect and retain samples of the various sealant, fenestration, and flashing materials installed on the building as required to help confirm that the approved materials are used during construction. The Contractor shall provide samples as requested by the WCA.
- Observe water testing, on installed windows in accordance with ASTM E1105 – Standard Test Method for Field Determination of Water Penetration of Installed exterior windows, Skylights, Doors and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference, the WCA will observe the test of a mockup installation and up to five randomly selected areas of curtain wall or windows during the course of the installation. The testing agency will include a summary of the water tests procedures, results, and any recommended corrective work in the site visit reports. The Contractor will assist the WCA with the water tests as necessary, including building chambers at each of the selected test areas.
- Perform water testing, in accordance with ASTM E2128 – Standard Guide for Evaluating Water Leakage of Building Walls – of interfaces of windows and curtain walls with nonfenestration wall assemblies. The testing agency will include a summary of the water tests procedures, results, and any recommended corrective work in the site visit reports. Contractor will assist the WCA with the water tests as necessary.

4.2 Contractor Responsibilities

The Contractor shall provide all quality control and quality assurance testing and documentation outlined in the technical specifications sections. Refer to other Divisions of the Specifications to determine the type and extent of work therein affecting the work of the WCA, whether or not such work is specifically mentioned in the WCP:

The Contractor shall also provide the following additional commissioning services as directed by the WCA:

- Provide schedule of field quality control tests and inspections required by the Contract and WCP.
- Include window commissioning requirements and progress and the agenda at each project meeting with the appropriate subcontractors in attendance, to review and discuss issues and concerns noted by the DOR, the WCA, the Owner, or the OPM that were identified during the previous week and decide what action will be taken to address those issues/concerns.
- Coordinate for a manufacturer's technical representative to perform in-site sealant adhesion testing of all approved sealants on all prepared substrates at the site to ensure that the materials are suitable for installation and that the optimum primers are selected. The Contractor shall schedule the testing; notify the DOR, OPM and WCA 48 Hrs in advance and provide a written test report.
- Submit results of ASTM E331 – Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference – for the specified and approved window system. Perform corrective work as necessary so that installed work meets the specified performance criteria.

4.3 Commissioning Task Matrix

The following table summarizes the commissioning tasks outlined above.

TASKS	RESPONSIBLE	ASSISTANCE	DELIVERABLE	SCHEDULE MILESTONE
Prefunctional Tests				
Submittals and Shop Drawings	DOR	WCA	Approved Shop Drawings and Submittals	Prior to start of construction
Window Water Test Results	Contractor		Written Test Report	Prior to purchase of windows
Curtain Wall Water Test Results	Contractor		Written Test Report	Prior to purchase of curtain wall
Startup Tests				
Sealant Adhesion Tests	Contractor		Written Test Report and Approval Letter	Prior to installation of sealant
Checkout Tests				
Window Mockup Water	WCA	Contractor	Site Visit Report	After mockup window installation but prior to installation of additional windows
Curtain Wall Mockup Water	WCA	Contractor	Site Visit Report	After mockup curtain wall installation but prior to installation of additional curtain wall
Curtain Wall Mockup Water	Contractor	DOR and WCA	Written Test Report	After mockup curtain wall installation but prior to installation of additional curtain wall
Functional Performance Tests				
Site Inspections	WCA		Site Visit Report	Periodically during construction
Collection and Retention of Samples	WCA	Contractor	Samples	Periodically during construction
Water Test of Windows	WCA	Contractor	Site Visit Report	Periodically during construction

SECTION 02 2820**ASBESTOS REMEDIATION****PART 1 – GENERAL****1.01 CONDITIONS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements therein affecting the work and this Section. The exact scope of work of this bidder cannot be determined without a thorough review of all specification sections and other contract documents.

1.02 RELATED WORK UNDER OTHER SECTIONS

- A. Section 01 3543 – Environmental Procedures.
- B. Section 02 4100 – Demolition.

1.03 DESCRIPTION OF WORK

- A. The work includes the complete removal and disposal of windows and doors as indicated in Part 3 of this Section.

1.04 POTENTIAL ASBESTOS HAZARD & DEBRIS

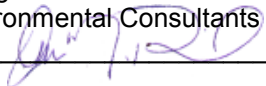
- A. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified ACM, take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.
- B. If the Contractor failed to comply with the requirements of the specifications, the Owner's Representative (Industrial Hygienist) may present a written stop of work order. The Contractor must immediately and automatically stop all work until authorized in writing by the IH to commence work.

1.05 DEFINITIONS

- A. Abatement: Procedures to control fiber release from ACM. Includes encapsulation, enclosure, and removal.
- B. Area Monitoring: Sampling of asbestos fiber concentrations within the asbestos control area and outside the asbestos control area, which is representative of the airborne concentrations of asbestos fibers, which may reach the breathing zone.
- C. Asbestos: The name given to a number of naturally occurring hydrated mineral silicates that possess a unique crystalline structure are incombustible and are separable into fibers. Asbestos includes Chrysotile, Crocidolite, Amosite, Anthophyllite, and Actinolite.

Halifax Elementary School
Halifax, MA 02338

December 13, 2017

- D. ACM: Any material containing more than 1% or greater by weight of asbestos of any type or mixture of types. State laws may vary in their definition of asbestos containing material.
- E. Barrier: Any surface that seals off the work area to inhibit the movement of fibers.
- F. Critical Barrier: A solid, asbestos impermeable partition erected so as to constitute a work area closure; the outer perimeter of an asbestos work area, usually erected across corridors or other open spaces to complete containment.
- G. Designer: Commonwealth of Massachusetts licensed Designer Ammar Dieb, Universal Environmental Consultants (AD-900326), expiring 2/2018.

- H. Friable Asbestos Material: Material that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- I. HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.
- J. Industrial Hygienist: An industrial hygienist certified in the Commonwealth of Massachusetts to perform air monitoring.
- K. Removal: All herein specified procedures necessary to strip all ACM from the designated areas and to dispose of these materials at an acceptable site.
- L. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- M. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
- N. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos contaminated waste.
- O. Work Area: Any area indicated on the Drawings as asbestos abatement areas or as areas containing friable asbestos material.

1.06 CONTRACTOR'S USE OF THE EXISTING BUILDING

- A. Keep existing driveways and entrances serving the premises clear and available to the Owner and his employees at all times. Do not use these areas for parking or storage of materials, unless authorized in writing by the Owner.
- B. Smoking or open fires will not be permitted within the building enclosure or on the premises.

1.07 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Provide a full time Site Supervisor for work under this Section with all appropriate state licenses, who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by 29 CFR 1926 for the Contractor and is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to ACM. This person shall have completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures,

have had a minimum of two years on the job training and meet all additional requirements set forth in 29 CFR 1926 for a Competent Person.

- B. The Site Supervisor must be certified by the State of Massachusetts. Asbestos Contractor shall provide proof of such certification to the Industrial Hygienist not less than 10 days prior to commencing any work.

1.08 SPECIAL REPORTS

- A. Except as otherwise indicated, submit special reports directly to the Industrial Hygienist within one day of occurrence requiring special report, with copies to all others affected by the occurrence.
- B. When an event of unusual and significant nature occurs at the site (examples: failure of negative pressure system, rupture of temporary enclosures, unauthorized entry into work areas), prepare and submit a special report listing date and time of event, chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise the Industrial Hygienist in advance at earliest possible date.
- C. Prepare and submit special reports of significant accidents, at the site and anywhere else work is in progress related to this project. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.09 CONTINGENCY PLAN

- A. Prepare a contingency plan for emergencies including fire, accident, power failure or any other event that may require modification of decontamination or work area isolation procedures. Include in the plan specific procedures for decontamination or work area isolation. A copy of the plan shall be submitted to and approved by the Industrial Hygienist prior to any work being done.
- B. Post in the clean room of the decontamination unit and in the Contractor's office trailer telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital and police.

1.10 PERMITS AND NOTIFICATIONS

- A. Secure necessary permits in conjunction with asbestos removal, hauling, and disposition and provide timely notification as may be required by federal, state, regional, and local authorities. Notify the Department of Environmental Protection (DEP) and the Massachusetts Department of Labor and Standards (DLS) and provide copies of the notification to the Industrial Hygienist, Industrial Hygienist and the State Environmental Regulatory Agency 10 working days (Document Submission Date) prior to commencement of the work.
- B. No later than the Document Submission Date, notify the local fire, police and Health Departments, in writing, of proposed asbestos abatement work. Advise the fire department of the nature of the asbestos abatement work, and the necessity that all firefighting personnel who may enter the work site in the case of fire wear self-contained breathing apparatus. Provide one copy of the notices to the Industrial Hygienist prior to commencing the work.
- C. No later than the Document Submission Date, submit proof satisfactory to the Industrial Hygienist that all required permits, site location, and arrangements for transport and disposal of asbestos containing or contaminated materials, supplies, and the like have been obtained.

1.11 SAFETY COMPLIANCE

- A. Comply with laws, ordinances, rules, and regulations of federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials.
- B. Comply with the applicable requirements of the current issue of 29CFR 1926.1101 and 40CFR 61, Subparts A and B. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work.

1.12 RESPIRATOR PROGRAM

- A. Establish a respirator program as required by ANSI Z88.2 and 29 CFR 1926.1101 (h), 1926.103, and 1910.134.

1.13 PERSONNEL PROTECTION

- A. Prior to commencement of work, workers shall be instructed in and shall be knowledgeable of the hazards of asbestos exposure; use and fitting of respirators; use of showers; entry and exit from work areas, and all aspects of work procedures and protective measures.
- B. All asbestos abatement workers shall receive training and shall be accredited as required by 40 CFR 763.90(g). Training and accreditation shall be in accordance with 40 CFR 763, Appendix C to Subpart E. Training shall also be provided to meet the requirements of OSHA Regulations contained in 29 CFR 1926.
- C. Prior to the start of work, the Asbestos Contractor shall provide medical examinations for all employees in accordance with 29CFR 1926.1101 (m). All employees hired by the Asbestos Contractor after start of work shall have medical examinations in accordance with this paragraph before being put to work.
- D. Maintain complete and accurate records of employee's medical examinations, during employment and make records of the required medical examinations available for inspection and copying to: The Assistant Secretary of OSHA, the Director of The National Institute for Occupation Safety and Health (NIOSH), authorized representatives of either of them, and an employee's physician upon the request of the employee or former employee.
- E. Provide personnel exposed to airborne concentrations of asbestos fibers with fire retardant disposable protective whole body clothing, head coverings, gloves, and foot coverings. Provide gloves to protect hands. Make sleeves secure at the wrists and make foot coverings secure at the ankles by the use of tape. Asbestos Contractor shall require and monitor the use of complete protective clothing. A competent person designated by the Asbestos Contractor in accordance with 29CFR 1926.1101 shall periodically examine protective clothing worn by employees in the work area for rips or tears. When rips or tears are detected, they shall be immediately mended or replaced.
- F. Provide goggles to personnel engaged in asbestos operations when the use of a full-face respirator is not required.
- G. Provide authorized visitors with suitable protective clothing, headgear, eye protection and footwear, whenever they are required to enter the work area, to a maximum of 3 changes for 3 visitors per day. One of the sets of protective clothing shall be available for full time use by the Industrial Hygienist.
- H. Provide all persons with personally issued and marked respiratory equipment approved by NIOSH and OSHA. The appropriate respiratory protection shall be selected according to the most recent Massachusetts regulations.

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- I. Once all visible asbestos material has been removed during decontamination, cartridge type respirators will be allowed during the final cleanup provided the measured airborne concentrations do not exceed 0.1 fibers per cubic centimeter. Where respirators with disposable filters are employed, provide sufficient filters for replacement as required by the worker or applicable regulation.
- J. If the permissible respirators fail to provide sufficient protection against volatile emitted by any sealant used, the services of a qualified industrial hygienist will be procured, at the Asbestos Contractor's expense, to determine proper respiratory protection. The Owner and Industrial Hygienist will not be liable for the cost of increased respiratory protection.
- K. Select respirators from those approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services. All personal wearing negative pressure respirators shall have respirator fit tests within the last six months and signed statements shall be available.

1.14 REFERENCE STANDARDS

- A. Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Requirements of this Section shall in no way invalidate the minimum requirements of the referenced standards. Comply with the provisions of the following codes and standards, except as otherwise shown or specified. Where conflict among requirements or with this Section exists, the more stringent requirements shall apply.
- B. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA) requirements, which govern asbestos abatement work or hauling and disposal of asbestos waste materials.
- C. U.S. Environmental Protection Agency (EPA) requirements, which govern asbestos abatement work or hauling and disposal of asbestos waste materials.
- D. U.S. Department of Environmental Protection (DEP) and the Massachusetts Department of Labor and Standards (DLS).

1.15 SUBMITTALS

- A. No work shall commence until the Contractor submit an emailed completed submittals not less 10-working days prior to commencement of the work. The submittals shall include the following:
 - 1. Submit all licenses and certification required.
 - 2. Submit written evidence that the landfill to be used for disposal of asbestos is approved for disposal of asbestos by the EPA.
 - 3. Submit all required items previously listed.
 - 4. Secure necessary permits in conjunction with asbestos removal, hauling, and disposition and provide timely notification as may be required by federal, state, regional, and local authorities. Notify the Department of Environmental Protection (DEP) and the Massachusetts Department of Labor and Standards (DLS) and provide copies of the notification.
 - 5. Notify the local fire, police and Health Departments, in writing, of proposed asbestos abatement work. Advise the fire department of the nature of the asbestos abatement work, and the necessity that all firefighting personnel who may enter the work site in the case of fire wear self-contained breathing apparatus. Provide one copy of the notices.

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6. Submit proof that all required permits, site location, and arrangements for transport and disposal of asbestos containing or contaminated materials, supplies, and the like have been obtained.
7. The Contractor shall submit a plan for managing the waste including all collection, storage, disposal and decontamination practices/waste disposal.
8. Submit medical examinations for all employees in accordance with 29CFR 1926.1101 (m). All employees hired by the Asbestos Contractor after start of work shall have medical examinations in accordance with this paragraph before being put to work.
9. Provide MSDS for all used products on this Project.

1.16 REPORTING

- A. Maintain on site a daily log documenting the dates and time of the following items, as well as other significant events:
 1. Minutes of meetings: purpose, attendees, and brief discussion
 2. Visitations: authorized and unauthorized
 3. Personnel: by name, entering and leaving the work area
 4. Special or unusual events
 5. Personnel air monitoring tests and results
- B. Documentation with confirmation signature of the Industrial Hygienist of the following:
 1. Inspection of work area preparation prior to start of removal and daily thereafter.
 2. Removal of any polyethylene barriers.
 3. Removal of waste materials from work area and transport and disposal at approved site.
 4. Decontamination of equipment.
 5. Waste Shipment Records. No final payment will be approved until all above documents have been submitted.
- C. Provide two bound copies of this log to the Industrial Hygienist with the application for final payment.

1.17 AIR MONITORING

- A. Part time monitoring might be conducted to ensure that the Asbestos Contractor is complying with the EPA and OSHA regulations and any applicable state and local government regulations. The Owner will provide an Industrial Hygienist (Universal Environmental Consultants) to take air samples at the job site at no cost to the Asbestos Contractor.
- B. The purpose of the Industrial Hygienist's air monitoring will be to detect faults in the work area isolation such as:
 1. Contamination of the building outside of the work area with airborne asbestos fibers,
 2. Failure of filtration or rupture in the negative pressure system,

3. Contamination of the exterior of the building with airborne asbestos fibers.
 4. Should any of the above occur, the Asbestos Contractor should immediately cease asbestos abatement activities until the fault is corrected! Work shall not recommence until authorized by the Industrial Hygienist.
- C. The Industrial Hygienist will monitor airborne fiber counts in the work area. The purpose of this air monitoring will be to detect airborne fiber counts higher than the Action Level of 0.1- f/cc which may significantly challenge the ability of the work area isolation procedures to protect the balance of the building from contamination by airborne fibers.
- D. The Asbestos Contractor shall be responsible for providing his/her own personnel monitoring within the work area as required to meeting CFR 1926.1101.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Plastic Sheet: 6 mil minimum thickness, unless otherwise specified, in sizes to minimize the frequency of joints.
- B. Tape: Capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under dry and wet conditions, including use of amended water. Provide tape, which minimizes damage to surface finishes.

2.02 EQUIPMENT

- A. Supply the required number of asbestos air filtration units to the site in accordance with these specifications.

2.03 DANGER SIGNS AND LABELS

- A. Display danger signs at each location where airborne concentrations of asbestos fibers may be in excess of 0.01 fibers/cc. Post signs at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.
- B. The sign shall also contain a pictorial representation of possible danger or hazard, such as a skull and cross bone, or other suitable warning as approved by the Project Monitor. Sign shall meet applicable requirements.
- C. Affix danger labels to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers.

PART 3 – EXECUTION**3.01 SCOPE OF WORK:**

- A. The asbestos abatement project might be performed in several phases. It is the asbestos contractor's responsibility to comply with the phasing schedule prepared by the Architect and Window Contractor. The scope of work includes the proper removal and disposal of the windows and doors. Refer to drawings for detailed scope, location and quantities.
- Specific Note:
1. Remove and properly dispose of windows/window wall system and doors. Remove and properly dispose of all caulking/debris found on the ground of the exterior of the building. Caulking on windows was found to contain asbestos and was assumed to contain >1 ppm of PCB's. The contractor must comply with DLS and DEP 310CMR 7.15 regulations.
 2. Refer to drawings for scope, location and quantities. The contractor shall coordinate the work with other trades.

3.02 JOB CONDITIONS

- A. Do not commence asbestos abatement work until:
1. Arrangements have been made for disposal of waste at an acceptable site. Submittal shall be made no later than the Document Submission Date.
 2. Arrangements have been made for containing and disposal of wastewater resulting from wet stripping or filtering through a 5-micron filter.
- B. All materials resulting from abatement work, except as specified otherwise shall become the property of the Asbestos Contractor and shall be disposed of as specified herein.

3.3 INSPECTION AND PREPARATION

- A. Examine the areas and conditions under which asbestos will be abated and notify the Project Monitor in writing of conditions detrimental to the proper and timely completion of the work.
- B. Before any work commences, post danger signs in and around the Work Area to comply with 29CFR 1926.1101 (k) (l) as required by federal and state regulations, and as specified herein.
- C. Clean all routes used to transport the ACM bags from the abated areas.

3.4 WORK PROCEDURE

- A. Perform asbestos related work in accordance with 29CFR 1926.1101 and as specified herein. Use wet removal procedures. Personnel shall wear and utilize protective clothing and equipment as specified herein.
- B. Workers shall be fully protected with respirators and protective clothing immediately prior to the first disturbance of asbestos containing or contaminated materials and until final cleanup is completed.

3.5 PREPARATION OF THE WORK AREA

- A. Prior to any asbestos abatement work, clean the proposed work areas using HEPA filtered vacuum equipment and wet cleaning methods as appropriate. Methods that raise dust, such as

dry seeping or vacuuming with equipment not equipped with HEPA filters will not be permitted. Dispose of all cloths, which are used for cleaning as contaminated waste.

3.6 MAINTENANCE OF ENCLOSURE SYSTEMS

- A. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery. Visually inspect enclosures at the beginning of each work period.

3.7 REMOVAL OF ASBESTOS CONTAINING MATERIALS

- A. Thoroughly wet ACM to be removed prior to stripping to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal Encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal Encapsulant to penetrate material thoroughly. If a removal Encapsulant is used, apply in strict accordance with manufacturer's written instructions.
- B. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.
- C. Remove saturated ACM in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to wash down station adjacent to material decontamination unit.
- D. For the removal of windows at a minimum the following shall be done.
 - 1. Place 2 layers of 6-mil polyethylene sheeting on ground and on the inside of the school sealing window opening.
 - 2. Remove window assembly including putty, glazing and frames.
 - 3. Remove all perimeter caulking and sealant from the window frames at jambs, heads and sills. All caulking shall be removed from the adjacent surfaces until there is no visible emission.
 - 4. Remove all debris that might be found on the ground.

3.8 WORK AREA CLEARANCE

- A. The work is complete when the work area is visually clean and airborne fiber levels have been reduced to the level specified below. When this has occurred, the Asbestos Contractor will notify the Project Monitor that the area is ready for clearance.
- B. The number and volume of air samples taken and analytical methods used by the Project Monitor will be in accordance with applicable regulations.
- C. Phase Contrast Microscopy (PCM) will be used for all type of sampling.

3.9 DISPOSAL OF ACM AND ASBESTOS CONTAMINATED WASTE

- A. To prevent exceeding available storage capacity on site, remove sealed and labeled containers of asbestos waste and dispose of such containers at an authorized disposal site in accordance with the requirements of disposal authority.
- B. Comply with 29 CFR 1926.1101.

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- C. Seal all asbestos and asbestos contaminated waste material with double thickness 6-mil, sealable plastic bags. Label the bags; transport and dispose of all in accordance with the applicable OSHA and EPA regulations. At the conclusion of the job, place all polyethylene material, tape, cleaning material and clothing in the plastic lined drum. Seal, correctly label, and dispose of as asbestos waste material.
- D. Transport the bags to the approved waste disposal site. Asbestos Contractor shall obtain trip tickets at the landfill to document disposal of asbestos containing materials. A form shall be signed, not initialed, by all parties. Copies of all trip tickets shall be submitted to the Project Monitor.
- E. Consider wastewater from showers and sinks to be contaminated waste and dispose of in accordance with this Section, unless water has been filtered through a 5 micron filter.

3.10 DISPOSAL OF NON-CONTAMINATED WASTE

- A. Remove from the site all non-contaminated debris and rubbish resulting from demolition operations. Transport materials removed from demolished areas and dispose of offsite in a legal manner.
- B. During progress of work, clean site and public properties, and dispose of waste materials, debris, and rubbish. Provide on-site containers for collection of waste materials, debris, and rubbish. Remove waste materials, debris, and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

END OF SECTION

SECTION 02 4100**DEMOLITION****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included: Demolition and removal of existing window, exterior door, hardware, wood siding and trim systems: shingles, underlayment, wood blocking, and sheet metal flashings as required for new work shall be performed by or coordinated and supervised by the General Contractor.
1. Contractor is required to remove, contain, recover and dispose of all window, exterior door, and siding and trim materials and associated waste as called out in these specifications. The Contractor shall provide all services to perform the Work as follows:
 - a. Isolate work areas daily or as otherwise required to contain materials within the removal areas.
 - b. Prepare existing surfaces for removal as specified.
 - c. Remove all materials in areas indicated on the applicable Contract Drawings.
 - d. Recover all debris generated within the work zone.
 - e. Thoroughly clean each work area prior to the end of each shift.
 - f. Remove the asbestos containing material from the work area and properly segregate and containerize for transport. Refer to Environmental Procedures Section 01 3543 for requirements.
 2. Remove and legally dispose of demolished materials off site. Except those items specifically designated to be relocated, reused, or turned over to the facility, all existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at their expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.
 3. Scheduling and sequencing operations without interrupting utilities serving occupied areas. If interruption is required, obtain written permission from the utility company and Owner. Provide temporary services as necessary to serve occupied and usable facilities when permanent utilities must be interrupted, or schedule interruption when the least amount of inconvenience will result.

1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to the Awarding Authority ready for reuse, at a location designated by the Awarding Authority.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated. Protect from weather until reinstallation.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.04 SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with early and late starting and finishing dates for each activity. Ensure on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination of continuing occupancy of portions of existing building.
 - 5. Means of protection for areas to remain, items to remain, and items in path of waste removal from building.
- B. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged, and turned over the Awarding Authority.
- C. Landfill Records: Provide trip tickets (receipts) indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.05 QUALITY ASSURANCE

- A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.
- B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.
- E. Pre-demolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.06 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION**3.01 EXAMINATION**

- A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- C. Survey of Existing Conditions: Record existing conditions by use of preconstruction digital recordings
 - 1. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
- D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.02 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Section 015000 - Temporary Facilities and Controls.
 - 2. Maintain adequate passage to and from all exits at all times. Under no condition block or interfere with the free flow of people at legally required exits, or in any way alter the required condition of such exits.
- B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Provide temporary barricades as required to limit access to demolition areas.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Protect existing construction to remain.

3.03 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically.
 2. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, roof, or framing.
 3. Dispose of demolished items and materials promptly.
- B. Removed and Reinstalled Items
1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Designer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.04 PROTECTION OF PUBLIC AND PROPERTY

- A. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and Halifax Elementary School during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.
- B. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Architect, and to the satisfaction of the Awarding Authority.
- C. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.

3.05 DISCOVERY OF HAZARDOUS MATERIALS

- A. If hazardous materials, such as chemicals, asbestos-containing materials, or other hazardous materials are discovered during the course of the work other than those identified in these construction documents, cease work in affected area only and immediately notify the Architect and the Awarding Authority of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

3.06 DISPOSAL OF DEMOLISHED MATERIALS

- A. Do not allow demolished materials to accumulate on-site.
- B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

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- C. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent and with no airborne particles.
- D. Remove debris from site each day.
- E. Burning: Do not burn demolished materials.

3.07 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Premises shall be left in a clean condition and ready to accept alteration work and new construction.

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 1 – GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Wood blocking, nailers, curbs, and plywood associated with window, door, and siding and trim replacement.
 2. Replacement of deteriorated plywood and wood plank sheathing. See Section 01 2200 – Unit Prices.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 06 2023 – Finish Carpentry.
 2. Section 06 6600 – Cellular PVC Fabrication.
 3. Section 07 2119 – Foamed-In-Place Insulation.
 4. Section 07 4646 – Fiber Cement Siding.
 5. Section 07 6200 – Sheet Metal Flashing and Trim.
 6. Section 07 9200 – Joint Sealants.
 7. Section 08 1000 – Doors and Frames.
 8. Section 08 4113 – Aluminum-Framed Storefronts.
 9. Section 08 5113 – Aluminum Windows.

1.03 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details. Refer to Section 013000 Administrative Requirements.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include

physical properties of treated materials based on testing by a qualified independent testing agency.

3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
1. Preservative-treated wood.
 2. Fire-retardant-treated wood.
 3. Power-driven fasteners.
 4. Powder-actuated fasteners.
 5. Expansion anchors.

1.04 DELIVERY, STORAGE, AND HANDLING

- B. Stack lumber, plywood, and other panels, flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 – PRODUCTS

2.01 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 3. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Plywood: DOC PS 1.
1. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
 2. Factory mark panels to indicate compliance with applicable standard.

2.02 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWPAC2.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

2.03 FIRE-RETARDANT-TREATED MATERIALS

- A. General: For all interior use materials, provide materials that are fire-retardant treated and comply with performance requirements in AWPAC20 (lumber) and AWPAC27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested as qualified by independent testing agency according to ASTM D 5664, for lumber and ASTM 5516 for plywood.
 - 2. Use treatment that does not promote corrosion of metal fasteners.

2.04 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Furring.
- B. For items of dimension lumber size, provide Construction or No. 2 lumber with 15 percent maximum moisture content and the following species:
 - 1. Hem-fir (north); NLGA.
- C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.05 SHEATHING

- A. Plywood Sheathing: Exposure I, Structural I Sheathing.
 - 1. Span Rating: Not less than 16/0.
 - 2. Nominal Thickness: Not less than 3/4 inch, as required to match existing.

2.06 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where carpentry is exposed to weather, preservative treated wood, fire retardant treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel or galvanized steel hardware complying with ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.

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- E. Lag Bolts: ASME B18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 4 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

2.07 CEILING TILE

- A. Cortega #704 as manufactured by Armstrong World Industries, 24" x 24" x 5/8" angled tegular, NRC = 0.55 Minimum. Match existing ceiling tile. Verify in field.
- B. Ceiling tiles are for replacement of water damaged tiles at the interior of the building at the direction the Architect. Refer to Section 01 2200 – Unit Prices of these specifications.

PART 3 – EXECUTION

3.01 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- D. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- E. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- F. Do not splice structural members between supports, unless otherwise indicated.
- G. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- H. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2305.2, "Fastening Schedule," in the Massachusetts State Building Code.
- I. Use stainless steel wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.02 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.03 WASTE DISPOSAL

- A. Disposal: At completion of roofing work, transport demolished materials and waste off Owner's property. Separate, salvage, recycle, and legally dispose of materials in accordance with the Commonwealth of Massachusetts Waste Ban, 310 CMR 19.017.

3.04 PROTECTION

- A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA registered label.

END OF SECTION

SECTION 06 2023
FINISH CARPENTRY**PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Milled wood, and includes but is not limited to, furnishing and installing the following work:
1. Millwork, molding and trim:
 - a. Interior window and door casing extensions and closure trim.
 - b. Door and window jamb extension closures, storm panel perimeter frame stops, and wall face casings at exterior and interior of door opening jambs, all to match existing wood types and finishes.
 - c. Standing and running trim.
 2. Accessories including, but not limited to, fasteners and connectors.
 3. Beadboard at exterior canopy ceilings.
- B. Related Work: The following Sections are not included in this Section and will be performed under the designated Sections:
1. Section 06 1000 – Rough Carpentry
 2. Section 06 6600 – Cellular PVC Fabrications
 3. Section 07 2119 – BSD-Foamed-In-Place Insulation
 4. Section 07 9200 – Joint Sealants
 5. Section 08 1000 – Doors & Frames
 6. Section 08 4113 – Aluminum-Framed Storefronts
 7. Section 08 5113 – Aluminum Windows
 8. Section 09 9000 – Painting and Coatings

PART 2 – PRODUCTS**2.01 DESCRIPTION**

- A. Regulatory Requirements:
1. Unless otherwise indicated provide products of quality specified by AWI Architectural Woodwork Quality Standards Illustrated for Premium grade.
 2. Provide materials having fire and smoke properties as required by applicable code.
 3. Dimension Lumber: Comply with applicable grading rules of the inspection agencies.

- a. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.
- b. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

2.02 MATERIALS – LUMBER

- A. Softwood Lumber: Spruce species, quarter sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for transparent finish.
- B. Hardwood Lumber (opaque finish - paint grade): Poplar or Natural Birch species, plain sawn, KD to a maximum moisture content of 5-10 percent per AWI; with vertical grain, of quality suitable for transparent finish.

2.03 MATERIALS – SHEET

- A. Softwood Plywood Not Exposed to View: Any face species, veneer core; PS 1, Grade A-B; glue type as recommended for application.
- B. Beadboard:
 1. Tongue and groove regular board, ½" thick, full length of soffit, PVC material, white color.
 2. Beadboard material by Versatex or approved equal.

2.04 WOOD TREATMENT

- A. Fire Retardant Treatment (UL FR-S Type): Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum.
- B. Provide identification on fire retardant treated material.
- C. Deliver fire retardant treated materials cut to required sizes. Minimize field cutting.
- D. Re-dry wood after pressure treatment to maximum 6 percent moisture content.

2.05 FABRICATION

- A. Expansion / Contraction Movement: Assemble wood products using details that allow for expansion and contraction due to changes in environmental conditions.
- B. Fit exposed sheet material edges with 3/8 inch matching hardwood edging. Use one piece for full length only.
- C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

2.06 FINISHES

- A. General and Shop Finishing:
 1. Sand work smooth and set exposed nails and screws.
 2. Apply wood filler in exposed nail and screw indentations.
 3. Pre-prime or field-prime all installed woodwork.

4. Back prime and end-cut seal woodwork surfaces to be concealed, prior to installation.

- B. Field Finishing: (Finish Painting by Contractor).

2.07 ACCESSORIES

- A. Multipurpose Construction Adhesive: Formulation with a VOC content of 70 g/L or less, urea formaldehyde-free, and recommended for indicated use by adhesive manufacturer.
- B. Fasteners and Connectors: Of size and type to suit application; No.4 stainless steel finish in exposed locations.
- C. Lumber for Shimming, and Blocking: Softwood lumber of pine species.
- D. Wood Filler: Solvent base, tinted to match surface finish color.

PART 3 – EXECUTION

3.01 INSTALLATION - GENERAL

- A. Examine all installation conditions. Do not commence work until installation conditions are acceptable. Commencement of work will be considered unqualified acceptance of installation conditions.
- B. Shim as necessary with concealed shims.
- C. Accurately scribe and closely fit all faceplates, filler strips and trim strips to irregularities of adjacent surfaces.
- D. Install all woodwork level, plumb, true to line and anchored securely.

3.02 TRIM

- A. All trim shall be finished smooth and free from all machine and tool marks that will show through the finish. Nails used to fasten painted work will be set to receive putty.
- B. All joints will be tight and formed to conceal shrinkage. Miters 4 in. or more from heel to point shall be glued.
- C. Finish shall be made in as long as lengths as possible and jointed.
- D. Running finish shall have a minimum of splices and joints and where such splices and joints occur, they shall be fastened securely and all exposed surfaces shall be smooth, continuous planes. Grain appearance of members to be spliced shall be matched as much as practical.

3.03 QUALITY STANDARDS

- A. All interior finish shall be erected plumb, level and true, firmly backed up and blocked for proper nailing, blind nailed where possible and all nails carefully set. Woodwork shall be carefully fitted to adjoining work and care shall be taken not to damage these adjoining surfaces in any way. All joints where deemed necessary by the Architect shall be made with splines, dowels or tenons and thoroughly glued.
- B. All woodwork erected in an un-workmanlike manner will be rejected and any bruises or imperfections in the finish shall be repaired by refinishing or replacing the entire part as the Owner or Architect may direct.

3.04 WORKMANSHIP

- A. Finished woodwork shall be well smoothed and sandpapered and left complete, ready for painting and finishing. All molding shall be clearly cut, sharply defined, all miters accurately made, shop miters four inches or more from heel to point shall be put together with wood splines, dowels or tenons, and thoroughly glued. All work shall be assembled in the best manner so as to securely hold together with close joints. All fastenings shall be concealed wherever possible.
- B. Measurements for work shall be taken at the building by the wood finish subcontractors.
- C. All work shall be properly and firmly backed up and blocked where required. All finish woodwork shall be erected absolutely true, level and secure, close jointed and blind nailed wherever possible, and where this is not possible, the nails shall be so located and driven as not to be visible in the finish; all nails shall be carefully set. All finish woodwork that may be erected in an un-workmanlike manner will be rejected and either repaired to the Architect's satisfaction or removed and replaced by satisfactory new material as to the Architect may direct.

END OF SECTION

SECTION 06 6600**CELLULAR PVC FABRICATIONS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes:
 - 1. Provide mockup of two complete window systems and new siding system as per specification section 01 4339 – Mockups.
 - 2. Cellular PVC trim boards and moulding, including horizontal and vertical architectural and profiled moulding trim. Refer to the Drawings for specific locations.
 - 3. Self-adhered air vapor retarders and ice and water shield membrane underlayments provided behind all components.
- B. Related Work - Items of work in the following sections are related to work performed under this section.
 - 1. Section 01 4339 – Mockup
 - 2. Section 06 1000 – Rough Carpentry for the installation of required blocking and sheathing.
 - 3. Section 07 2500 – Weather Barriers
 - 4. Section 07 4646 – Fiber Cement Siding
 - 5. Section 07 6200 – Sheet Metal Flashing and Trim
 - 6. Section 08 1000 – Glazing
 - 7. Section 08 5113 – Aluminum Windows
 - 8. Section 07 9200 – Joint Sealants: sealing of trim and joints.
 - 9. Section 09 9000 – Paintings and Coatings.

1.03 SUBMITTALS

- A. Provide electronic copies to be sent simultaneously to the OPM, Commissioning Agent, and Architect. The General Contractor will be required to furnish authorized hard copies to the Clerk of Works (CoW) Refer to Section 013000 Administrative Requirements.
- B. The Contractor must make a complete submittal to the Architect, prior to the Architect's review. The Architect will not review incomplete submittals, i.e. shop drawings field verified by the Contractor, product data, product test reports, color selector, certification letters from the manufacturer, and certification from the contractor that submittal is complete and correct.

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- C. The Contractor shall apply a stamp or certify in writing that submittal has been reviewed by them as complete and correct.
- D. Product Test Reports
- E. Maintenance Data: Information for maintenance manuals.
- F. Warranties: Special warranties specified in this Section.
- G. Samples of all materials.
- H. Manufacturer's Specifications, MSDS Sheets and Installation Instructions for all materials.

1.04 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with all Building Code requirements for installation.
- B. Allowable Tolerances:
 - 1. Variation in component length: -0.00 / +1.00"
 - 2. Variation in component width: $\pm 1/16$ "
 - 3. Variation in component thickness: $\pm 1/16$ "
 - 4. Variation in component edge cut: $\pm 2^\circ$
 - 5. Variation in Density -0% + 10%
- C. Workmanship, Finish, and Appearance:
 - 1. Cellular PVC that is homogeneous and free of voids, holes, cracks, and foreign inclusions and other defects. Edges must be square, and top and bottom surfaces shall be flat with no convex or concave deviation.
 - 2. Uniform surface free from cupping, warping, and twisting.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Trim materials should be stored on a flat and level surface on a full shipping pallet. Handle materials to prevent damage to product edges and corners. Store materials under a protective covering to prevent jobsite dirt and residue from collecting on the boards.

1.06 WARRANTY

- A. Provide manufacturer's 25 year warranty against defects in manufacturing that cause the products to rot, corrode, delaminate, or excessively swell from moisture.

1.07 MOCKUP

- A. Install cellular PVC trim boards on mockup.

PART 2 – PRODUCTS**2.01 MATERIALS**

- A. Acceptable products:
 - 1. AZEK® Trimboards manufactured by Vycom Corporation, 801 Corey Street, Moosic, PA 18507, 1-413-787-1963.
 - 2. Duraboard manufactured by Ply-Trim, Inc., 550 N. Meridan road, Youngstown, OH 44509, 1-800-ply-trim
 - 3. Veranda Board, Manufactured by The Home Depot USA.
- B. Material: Expanded rigid poly vinyl chloride material with a small-cell microstructure and density of .65 grams/cm³.

2.02 ACCESSORY PRODUCTS

- A. Fasteners: Fasteners shall be #8, Grade 305 stainless steel finish screws covered with PVC-compatible plugs of sufficient length to penetrate the receiving member 1-1/2" as manufactured by Simpson Strong-Tie or equal. Fastener heads which cannot be countersunk shall be finished to match PVC color.
- B. Adhesives:
 - 1. Bonding PVC to PVC solvent based adhesive systems manufactured by the PVC manufacturer.
 - 2. Bonding PVC to Various Substrates, numerous standard construction adhesives work well. In general, contact cement, epoxy, rubber based and urethane adhesives are acceptable. Test a particular adhesive for suitability.
- C. Sealants:
 - 1. Sealant as required for installation of Cellular PVC materials shall be a low modulus, one component, modified polyurethane sealant, meeting the requirements of ASTM C-920, Type S, Grade NS. Sealant shall be Dymonic by Tremco, Sikaflex 1A by Sika or Dynatrol I by Pecora or approved equal. Color of sealant shall be selected by the Owner from the manufacturer's standard color chart. Final color selection shall be made by the Owner from the manufacturer's standard color chart. Submit the color chart to the Owner's Representative for color selection. Sealant shall be compatible with all sealants being installed under Division 07.

2.03 FINISHES

- A. Finish: Prefinished Standard Color White.

PART 3 – EXECUTION**3.01 INSTALLATION**

- A. Manufacturer's instructions: Comply with manufacturer's product catalog installation instructions and product technical bulletin instructions.
- B. Cutting: Sheets and boards to be cut using standard saws and carbide blades used for wood.
- C. Drilling: Drilling to be accomplished using twist drills recommended for metals.

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- D. Milling: Milling to be accomplished using standard milling machines of various types. Relief Angle 20° to 30°; Cutting speed to be optimized with the number of knives and feed rate.
- E. Routing: Routing to be accomplished using standard carbide tipped routers used in woodworking.
- F. Edge Finishing: Various sanding, grinding or filing tools. Do not allow excessive frictional heat to build up.
- G. Fastener Location: Follow Manufacturer's Standard fastening patterns. Fastener spacing shall not exceed 12" on center. Surface fastening is acceptable if in accordance with manufacturer recommendations, and as noted otherwise.
- H. Linear Thermal Expansion and Contraction: When properly fastened, allow for 1/8" movement for each 18' board. When butting boards together the butt joint shall be glued with PVC cement.
- I. Use the longest boards available to minimize joint. If joints in long spans of trim are recovered, connect boards with an adhered scarf joint.

END OF SECTION

SECTION 07 2119**FOAMED-IN-PLACE INSULATION****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 SECTION INCLUDES

- A. Foamed-in-place insulation.
- B. Related Requirements:
 - 1. Section 06 2023 - Finish Carpentry
 - 2. Section 06 6600 – Cellular PVC Fabrications
 - 3. Section 07 4646 – Fiber Cement Siding
 - 4. Section 07 9200 – Joint Sealants
 - 5. Section 08 1000 – Doors and Frames
 - 6. Section 08 4113 – Aluminum-Framed Storefronts
 - 7. Section 08 5113 – Aluminum Windows

1.03 REFERENCE STANDARDS

- A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2015.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2016.
- C. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).
- D. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 – Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product description, insulation properties, overcoat properties, and preparation requirements.
- C. Certificates: Certify that products of this section meet or exceed specified requirements.
- D. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.

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- E. Manufacturer's Installation Instructions: Indicate special procedures, and perimeter conditions requiring special attention.
- F. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
- G. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of all contractor accreditation and installer certification on site during and after installation. Present on-site documentation upon request.

1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing work of the type specified, with minimum three years documented experience.
- B. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); www.airbarrier.org/sle:
 - 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
 - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Foamed-In-Place Insulation:
 - 1. BASF Corporation; WALLTITE US Series Closed Cell: www.spf.basf.com.
 - 2. Covestro, LLC; EcoBay CC: www.covestro.com/sprayfoam.com.
 - 3. Demilec LLC; DEMILEC APX: www.demilec.com/sle.
 - 4. Gaco Western: www.gaco.com.
 - 5. Henry Company; PERMAX 0.5: www.henry.com/sle.
 - 6. Icynene Inc; Icynene Classic LD-C-50: www.icynene.com.
 - 7. Johns Manville; JM Corbond III Closed Cell Spray Polyurethane Foam: www.jm.com/sle.
 - 8. NCFI Polyurethanes: www.ncfi.com.
 - 9. Rhino Linings Corporation; ThermalGuard CC2: www.rhino linings.com/sle
 - 10. Substitutions: See Section 01 6000 – Product Requirements.

2.02 MATERIALS

- A. Foamed-In-Place Insulation: Low-density, flexible, open celled, water vapor permeable polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
 - 1. Regulatory Requirements: Conform to Massachusetts State Building Code for flame and smoke limitations.

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2. Aged Thermal Resistance: R-value (RSI-value) of 3 (deg F hr sq ft)/Btu (0.5 (K sqm)/W), minimum, when tested at 1 inch (25.4 mm) thickness in accordance with ASTM C518 after aging for 180 days at 41 degrees F (23 degrees C).
3. Air Permeance: 0.004 cfm/sq ft (0.2 L/second sq meter), maximum, when tested at intended thickness in accordance with ASTM E2178 or ASTM E283 at 1.5 psf (75 Pa).
4. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Mask and protect adjacent surfaces from over spray or dusting.

3.02 APPLICATION

- A. Apply insulation in accordance with manufacturer's instructions.
- B. Apply insulation by spray method, to a uniform monolithic density without voids.
- C. Trim excess away for applied trim or remove as required for continuous sealant bead.

END OF SECTION

SECTION 07 2500
WEATHER BARRIERS**PART 1 – GENERAL****1.01 GENERAL PROVISIONS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 SECTION INCLUDES

- A. Air and Vapor Retarders: Materials to make exterior walls, joints between exterior walls and roof, and joints around frames of openings in exterior walls, water vapor resistant and air tight.
- B. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups.

1.03 RELATED REQUIREMENTS

- A. Section 01 4339 – Mockups.
- B. Section 06 1000 – Rough Carpentry: Water-resistive barrier over exterior blocking at trim and wall openings for doors and windows.
- C. Section 06 6600 – Cellular PVC Fabrications: Air and vapor retarder installed in conjunction with cellular PVC trimboard.
- D. Section 07 4646 – Fiber Cement Siding: Air and vapor retarder installed in conjunction with fiber cement siding.
- E. Section 07 6200 – Sheet Metal Flashing and Trim: metal flashings installed in conjunction with weather barriers.
- F. Section 08 1000 – Door and Frames.
- G. Section 08 4113 – Aluminum-Framed Storefronts.
- H. Section 08 5113 – Aluminum Windows.

1.04 DEFINITIONS

- A. Air Barrier: Assemblies that form either water-resistive barriers, or air and vapor retarders.
- B. Air and Vapor Retarder: Air tight barrier made of material that is relatively water vapor impermeable, to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
 - 1. Water Vapor Permeance: For purposes of conversion, $57.2 \text{ ng}/(\text{Pa s sq m}) = 1 \text{ perm.}$
- C. Water-Resistive Barrier: Water-shedding barrier made of material that is moisture resistant, to the degree specified, intended to be installed to shed water without sealed seams.

1.05 REFERENCE STANDARDS

- A. AATCC Test Method 127 - Water Resistance: Hydrostatic Pressure Test; 2014.

- B. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.
- C. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2006a (Reapproved 2013).
- D. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2013.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- F. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- G. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2011.
- H. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials; 2013.
- I. ICC-ES AC308 - Acceptance Criteria for Water-Resistive Barriers; ICC Evaluation Service, Inc.; 2013.
- J. ICC-ES AC148 - Acceptance Criteria for Flexible Flashing Materials; ICC Evaluation Service, Inc.; 2011.

1.06 SUBMITTALS

- A. Product Data: Provide data on material characteristics.
- B. Manufacturer's Installation Instructions: Indicate preparation.

1.07 MOCK-UP

- A. Install air and vapor retarder, and water-resistive barrier materials in a mock-up of all typical wall transition assemblies such as: wall sill jamb; window blocking; corner trim conditions; and top of wall conditions concealed by eave framing and trim.

1.08 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

PART 2 – PRODUCTS

2.01 AIR AND VAPOR RETARDER MATERIALS (AIR BARRIER AND WATER-RESISTIVE)

- A. Air and Vapor Retarder Sheet: ASTM D1970/D1970M.
 - 1. Type: Rubberized asphalt bonded to thermoplastic sheet, self-adhesive.
 - 2. Thickness: 40 mil (0.040 inch), nominal.
 - 3. Roll Width: 18 inches, and 36 inches.
 - 4. Water Vapor Permeance: 0.05 perm, maximum, when tested in accordance with ASTM E96/E96M.
 - 5. Seam and Perimeter Tape: As recommended by sheet manufacturer.

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6. Products:
 - a. Henry Company; Blueskin SA: www.henry.com.
 - b. Carlisle Coatings and Waterproofing, Inc.; CCW-705 Air and Vapor Barrier Sheet: www.carlisle-ccw.com.
 - c. W.R. Meadows, Inc.; Air-Shield: www.wrmeadows.com.

2.02 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.
- B. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement is waived if not installed on a roof.
 1. Composition: Modified bituminous sheet laminated to polyethylene sheet.
 2. Thickness: 40 mil nominal; exception from ASTM D1970.
 3. Products:
 - a. DuPont Building Innovations; FlexWrap NF: www.dupont.com.
 - b. Fortifiber Building Systems Group; Fortiflash Commercial: www.fortifiber.com.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Provide surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives in accordance with manufacturer's instructions.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Air and Vapor Retarders: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Self-Adhesive Sheets:
 1. Prepare substrate in manner recommended by sheet manufacturer; fill and tape joints in substrate and between dissimilar materials.
 2. Lap sheets shingle-fashion to shed water and seal laps air tight.
 3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that all laps are firmly adhered with no gaps or fishmouths.
 4. Use same material, or other material approved by sheet manufacturer for the purpose, to seal to adjacent construction and as flashing.
- D. Openings and Penetrations in Exterior Weather Barriers:

1. Install flashing to cover entire sill, jamb and head blocking members, extending at least 8 inches onto sill and at least 6 inches into jambs and head of openings; mechanically fasten stretched edges.
2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with at least 4 inches wide; do not seal sill flange.
3. At openings to be filled with non-flanged frames, seal weather barrier to all sides of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.
4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 FIELD QUALITY CONTROL

- A. Do not cover installed weather barriers until required inspections have been completed.
- B. Obtain approval of installation procedures by the weather barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.
- C. Take digital photographs of each portion of the installation prior to covering up.

3.05 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07 4646
FIBER CEMENT SIDING

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 SECTION INCLUDES

- A. Wood-fiber cement siding.
- B. Self-adhered air/vapor retarder, and ice and water shield membrane (synthetic underlayment).
- C. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups.

1.03 RELATED REQUIREMENTS

- A. Section 01 4339 – Mockups.
- B. Section 06 1000 – Rough Carpentry: Siding substrate.
- C. Section 06 6600 – Cellular PVC Fabrications.
- D. Section 07 2500 – Weather Barriers.
- E. Section 07 6200 – Sheet Metal Flashing and Trim.
- F. Section 07 9200 – Joint Sealants: sealing of siding joints and joints to trim.
- G. Section 09 9000 – Painting and Coatings: Field painting.

1.04 REFERENCE STANDARDS

- A. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets; 2008 (Reapproved 2012).

1.05 SUBMITTALS

- A. See Section 01 3000 – Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Manufacturer's requirements for related materials to be installed by others.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods, including nail patterns.
- C. Warranty: Submit copy of manufacturer's warranty, made out in Owner's name, showing that it has been registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section with minimum 3 years of experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store products under waterproof cover and elevated above grade, on a flat surface.

PART 2 – PRODUCTS**2.01 SIDING**

- A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
 - 1. Style: Standard lap style.
 - 2. Texture: Simulated rough sawn grain.
 - 3. Length: 12 ft (3.7 m), nominal.
 - 4. Width (Height): 5-1/4 inches (133 mm).
 - 5. Thickness: 5/16 inch (8 mm), nominal.
 - 6. Finish: Prefinished Primer and Two Coats Paint. Standard Color White
 - 7. Warranty: 50 year limited; transferable.
 - 8. Lap Siding Manufacturers:
 - a. Allura, a division of Plycem USA, Inc: www.allurausa.com.
 - b. James Hardie Building Products, Inc: www.jameshardie.com.
 - c. Nichiha USA, Inc: www.nichiha.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

- A. Fasteners: Galvanized or corrosion resistant; length as required to penetrate minimum 1-1/4 inch (32 mm).
- B. Sealant: Elastomeric, polyurethane or silyl-terminated polyether/polyurethane, and capable of being painted.

PART 3 – EXECUTION**3.01 PREPARATION**

- A. Examine substrate and clean and repair as required to eliminate conditions that would be detrimental to proper installation.
- B. Verify that water-resistive barrier has been installed over substrate completely and correctly.
- C. Do not begin until unacceptable conditions have been corrected.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions and recommendations.
 - 1. Read warranty and comply with all terms necessary to maintain warranty coverage.
 - 2. Touch up all field cut edges before installing.
 - 3. Pre-drill nail holes if necessary to prevent breakage.
- B. Over Wood and Wood-Composite Sheathing: Fasten siding through sheathing into studs.
- C. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.
- D. Do not install siding less than 6 inches (150 mm) from surface of ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect.
- E. After installation, seal all joints except lap joints of lap siding. Seal around all penetrations. Paint all exposed cut edges.

3.03 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 6200**SHEET METAL FLASHING AND TRIM****PART 1 – GENERAL CONDITIONS****1.01 GENERAL PROVISIONS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Sheet metal flashing and trim for the following applications:
 - a. Formed flashings
 - 2. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 01 4339 Mockups.
 - 2. Section 06 1000 – Rough Carpentry
 - 3. Section 06 6600 – Cellular PVC Fabrications
 - 4. Section 07 2500 – Weather Barriers
 - 5. Section 07 4646 – Fiber Cement Siding
 - 6. Section 08 1000 – Doors and Frames
 - 7. Section 08 4113 – Aluminum-Framed Storefronts
 - 8. Section 08 5113 – Aluminum Windows

1.03 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.04 SUBMITTALS

- A. Provide electronic copies to be sent simultaneously to the OPM, Commissioning Agent, and Architect. The General Contractor will be required to furnish authorized hard copies to the Clerk of Works (CoW) and Town of Halifax for their records. Refer to Section 01 3300 - Submittal Procedures.

- B. The Contractor must make a complete submittal to the Architect, prior to the Architect's review. The Architect will not review incomplete submittals, i.e. shop drawings field verified by the Contractor, product data, product test reports, color selector, certification letters from the manufacturer, and certification from the contractor that submittal is complete and correct.
- C. The Contractor shall apply a stamp or certify in writing that submittal has been reviewed by them as complete and correct.
- D. Product Data: For each type of product specified.
- E. Samples for Initial Selection: For each type of metal indicated.
- F. Samples for Verification: For the products specified.
- G. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:
 - 1. Identify material, thickness, weight, and finish for each item and location in Project.
 - 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 - 3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
 - 4. Details of expansion-joint covers, including showing direction of expansion and contraction.

1.05 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.
- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.07 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak-proof, secure, and noncorrosive installation.

PART 2 – PRODUCTS

2.01 SHEET METAL AND PERFORMED FLASHINGS

- A. Aluminum Sheet: ASTM B 209, Alloy 3003, 3004, 3105, or 5005. Thickness as specified in this Section. Temper suitable for forming and structural performance required, but not less than H14, finished as follows:

1. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Fluoropolymer 3-Coat System: Manufacturer's standard 3-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight, with a minimum total dry film thickness of 1.5 mil; complying with AAMA 2605.
 - 1) Color and Gloss: As selected by Designer from manufacturer's full range, including metallics.

2.02 ACCESSORIES

- A. Accessories, including but not limited to nails, screws and clip strips, shall be compatible with surrounding metal so as to prevent galvanic corrosion.
- B. Sheet metal to wood blocking connections shall be completed with No. 12 Stubbs gauge stainless steel nails (thread shank), minimum 1-1/2 inches long.
- C. Sealant for sheet metal flashings shall be a one-part polyurethane, conforming to ASTM C 920-86, such as "Dymonic" by Tremco.

2.03 FABRICATION SCHEDULE

- A. Aluminum (.040)
 1. Finish to a Kynar 500 Shop Applied Three Coat Resin Based, High Performance Thermoplastic Organic Coating
 2. Miscellaneous Flashing and Drip caps.

PART 3 – EXECUTION

3.01 SHEET METAL FLASHING

- A. Refer to publication "Architectural Sheet Metal Manual" by SMACNA concerning methods and materials to be used in the fabrication and construction of sheet metal flashings.
- B. Sheet metal flashings shall be shop fabricated. Breaks, bends and hems shall be uniform, clean, and straight lines.
- C. Metal Flashings
 1. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:

Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.
 2. Complete all metal work in conjunction with windows, doors, siding and trim so that a watertight condition exists daily.
 3. Metal shall be installed to provide adequate resistance to bending to allow for normal thermal expansion and contraction.
 4. Metal joints shall be watertight.

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5. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch (25 mm).

END OF SECTION

SECTION 07 9200**JOINT SEALANTS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Joint backings and accessories.
- C. Joint sealant at removed and reset light fixtures, electrical devices, louvers, unit ventilator grills, etc. as marked on demolition drawings.
- D. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups.
- E. The Aluminum Window and Storefront installers shall perform all joint sealant work indicated in this Section for the work associated with that Section of Work.

1.03 RELATED REQUIREMENTS

- A. Section 01 4339 – Mockups.
- B. Section 06 6600 – Cellular PVC Fabrications
- C. Section 07 4646 – Fiber Cement Siding
- D. Section 07 6200 – Sheet Metal Flashing and Trim.
- E. Section 08 1000 – Doors and Frames.
- F. Section 08 4113 – Aluminum-Framed Storefronts.
- G. Section 08 5113 – Aluminum Windows.

1.04 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2006 (Reapproved 2011).
- B. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants; 2010.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.
- E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- F. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2010.

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- G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2002 (Reapproved 2013).
- H. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2013.
- I. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2005 (Reapproved 2010).
- J. SWRI (VAL) - SWR Institute Validated Products directory; Sealant, Waterproofing and Restoration Institute; online at <http://www.swrionline.org/ValidatedSealants>.

1.05 SUBMITTALS

- A. See Section 01 3300 – Submittal Procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
 - 6. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 7. Sample product warranty.
 - 8. Certification by manufacturer indicating that product complies with specification requirements.
 - 9. SWRI Validation: Provide currently available sealant product validations as published by SWRI for specified sealants.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.06 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience and approved by manufacturer.

1.07 WARRANTY

- A. See Section 01 7000 – Execution and Closeout Requirements, for additional warranty requirements.
- B. Correct defective work within a ten year period after date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 – PRODUCTS**2.01 MANUFACTURERS**

- A. Nonsag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. Dow Corning Corporation: www.dowcorning.com.
 - 2. Pecora Corporation: www.pecora.com.
 - 4. Substitutions: See Section 01 6000 – Product Requirements.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on the Drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between different exposed materials.
 - b. Joints between new hollow metal frame cover and trim.
- B. Exterior Joints: Use nonsag non-staining silicone sealant, unless otherwise indicated.

2.03 JOINT SEALANTS – GENERAL

- A. Sealants and Primers: Provide products with low levels of volatile organic compound (VOC) content.

2.04 NONSAG JOINT SEALANTS

- A. Type A – Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 50 percent, minimum.
 - 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 - 4. Color: To be selected by Architect from manufacturer's standard range.
 - 5. Cure Type: Single-component, neutral moisture curing.
 - 6. Service Temperature Range: Minus 65 to 180 degrees F.

7. Products:
 - a. Pecora Corporation; NST Ultra Low Modulus Architectural Silicone Sealant: www.pecora.com.
 - b. Substitutions: See Section 01 6000 – Product Requirements.
- B. Type B – Silyl-Terminated Polyether (STPE) and Polyurethane (STPU) Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: Plus and minus 35 percent, minimum.
 2. Color: To be selected by Architect from manufacturer's standard range.
 3. Service Temperature Range: Minus 40 to 180 degrees F.
 4. Products:
 - a. Pecora Corporation: Dynatrol 1-XL One-Part Non-Staining, Non Yellowing Sealant: www.pecora.com
 - b. Substitutions: See Section 01 6000 – Product Requirements.
- C. Type C – Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
 3. Color: To be selected by Architect from manufacturer's standard range.
 4. Service Temperature Range: Minus 40 to 180 degrees F.
 5. Products:
 - a. Pecora Corporation; Dynatrol I-XL General Purpose One Part Polyurethane Sealant: www.pecora.com.
 - b. Substitutions: See Section 01 6000 – Product Requirements.

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O – Open Cell Polyurethane.
 2. Open Cell: 40 to 50 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

- A. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

3.05 POST-OCCUPANCY

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at the low temperature in the thermal cycle. Report failures immediately and repair.

END OF SECTION

SECTION 08 1000**DOORS AND FRAMES****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included - Provide all doors and door frames as shown and/or scheduled on the Drawings, complete with all stops, anchors and accessories.
 - 1. Flush FRP (Fiberglass Reinforced Polyester) Glazed Doors
 - 2. Aluminum Stile and Rail Insulated Panel Doors
 - 3. Aluminum Tube Frames
- B. Related Work - Items of work in the following sections are related to work performed under this section:
 - 1. Section 06 1000 – Rough Carpentry.
 - 2. Section 07 9200 – Joint Sealants.
 - 3. Section 08 4113 – Aluminum-Framed Storefronts.
 - 4. Section 08 7100 – Door Hardware.
 - 5. Section 08 8000 – Glazing.
 - 6. Section 09 9000 – Painting and Coating.

1.03 SUBMITTALS

- A. Submit shop drawings indicating details of each frame type, schedule of doors and frames, door elevations and details, conditions at openings with various wall thicknesses and materials, location and installation requirements for hardware, thickness of materials, joints, and connections.
- B. The contractor shall verify all dimensions, rough openings and head, jamb and sill conditions as part of the shop drawing submission. Fabrication of frames shall be coordinated with the existing conditions.
- C. All shop drawings submitted shall be checked by the General Contractor and indicated as such on the Shop Drawings.
- D. Provide all Product Data, MSDS and Test Reports from the manufacturers.

1.04 JOB CONDITIONS

- A. Coordinate installation of door and frames so that the installation of other work may be properly executed to fulfill the design requirements. Check shop drawings of other sections to ensure proper installation.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Immediately upon delivery to job site, place materials in area protected from weather and construction operations.
- B. Deliver, store and handle all materials in a manner to prevent damage and deterioration. Provide standard protective covers.
- C. Store doors upright in a protected dry area off the ground or floor with at least 1/3 inch space between pieces.
- D. Follow storage and handling requirements of the manufacturer.

1.06 QUALITY ASSURANCE:

- A. Installer Qualifications: An employer or workers trained and approved by the manufacturer.
- B. Source Limitations: Obtain doors and frames from a single-source manufacturer.
- C. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Section 01 3119.

1.07 PERFORMANCE REQUIREMENTS:

- A. General: Provide door assemblies that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturer's corresponding standard systems. All doors shall meet or exceed the requirements of the MA Stretch Energy Code, latest edition.
- B. Air Infiltration: For a single door 3'-0" x 7'-0", test specimen shall be tested in accordance with ASTM E 283 at pressure differential of 6.27 psf. Door shall not exceed 0.58 cfm/ft².
- C. Water Resistance: For a single door 3'-0" x 7'-0", test specimen shall be tested in accordance with ASTM E 331 at pressure differential of 7.50 psf. Door shall not have water leakage.
- D. Indoor air quality testing per ASTM D 6670-01: GREENGUARD Environmental Institute Certified including GREENGUARD for Children and Schools Certification.
- E. Hurricane Test Standards, Single Door:
 - 1. Uniform Static Load, ASTM E 330: Plus or minus 195 pounds per square foot.
 - 2. Forced Entry Test, 300 Pound Load Applied, SFBC 3603.2 (b)(5).
 - 3. Cyclic Load Test, SFBC PA 203: Plus or minus 53 pounds per square foot.
 - 4. Large Missile Impact Test, SFBC PA 201.
- F. Hurricane Test Standards, Pair of Doors with single point latching:
 - 1. Uniform Static Load, ASTM E 330: Plus or minus 112.5 pounds per square foot.
 - 2. Forced Entry Test, 300 Pound Load Applied, AAMA 1304.
 - 3. Cyclic Load Test, ASTM E 1886: Plus or minus 75 pounds per square foot.
 - 4. Large Missile Impact Test, ASTM E 1886.
- G. Swinging Door Cycle Test, Doors and Frames, ANSI A250.4: Minimum of 25,000,000 cycles.

- H. Cycle Slam Test Method, NWWDA T.M. 7-90: Minimum 5,000,000 Cycles.
- I. Swinging Door Assembly, Doors and Frames, ASTM F 476: Grade 40.
- J. Salt Spray, Exterior Doors and Frames, ASTM B 117: Minimum of 500 hours.
- K. Sound Transmission, Exterior Doors, STC, ASTM E 90: Minimum of 25.
- L. Thermal Transmission, Exterior Doors, U-Value, AAMA 1503-98: Maximum of 0.29 BTU/hr x s.f. x degrees F. Minimum of 55 CRF value.
- M. Surface Burning Characteristics, FRP Doors, ASTM E 84:
 - 1. Flame Spread: Maximum of 200, Class C.
 - 2. Smoke Developed: Maximum of 450, Class C.
- N. Surface Burning Characteristics, Class A on Interior Faces of FRP Exterior Panels and both faces of FRP Interior Panels, ASTM E 84:
 - 1. Flame Spread: Maximum of 25.
 - 2. Smoke Developed: Maximum of 450.
- O. Impact Strength, FRP Doors, Nominal Value, ASTM D 256: 14.0 foot-lbs per inch of notch.
- P. Tensile Strength, FRP Doors, Nominal Value, ASTM D 638: 13,000 psi.
- Q. Flexural Strength, FRP Doors, Nominal Value, ASTM D 790: 21,000 psi.
- R. Water Absorption, FRP Doors, Nominal Value, ASTM D 570: 0.20 percent after 24 hours.
- S. Indentation Hardness, FRP Doors, Nominal Value, ASTM D 2583: 55.
- T. Gardner Impact Strength, FRP Doors, Nominal Value, ASTM D 5420: 120 in-lb.
- U. Abrasion Resistance, Face Sheet, Taber Abrasion Test, 25 Cycles at 1,000 Gram Weight with CS-17 Wheel: Maximum of 0.029 average weight loss percentage.
- V. Stain Resistance, ASTM D 1308.
- W. Chemical Resistance, ASTM D 543.
- X. Compressive Strength, Foam Core, Nominal Value, ASTM D 1621: 79.9 psi.
- Y. Compressive Modulus, Foam Core, Nominal Value, ASTM D 1621: 370 psi.
- Z. Tensile Adhesion, Foam Core, Nominal Value, ASTM D 1623: 45.3 psi.
- AA. Thermal and Humid Aging, Foam Core, Nominal Value, 158 Degrees F and 100 Percent Humidity for 14 Days, ASTM D 2126.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Gauges
 - 1. Gauges shown on the drawings or specified herein are U.S. Standard for ferrous metals, and Brown and Sharp for non-ferrous metals. Gauges and thickness of materials shown or

specified are minimums. Materials shall conform to the requirements specified for the particular item; and where these requirements are not specified in detail, the materials shall be suitable for the intended usage of the item.

B. Doors

1. Doors shall be prepared and reinforced to receive door hardware in accordance with the approved door hardware schedule and template.
 - a. Doors shall be mortised, reinforced, drilled and tapped at the factory for fully templated hardware only, in accordance with the approved hardware schedule and templates. Where surface-mounted hardware is to be applied, doors shall have reinforcing plates only. All drilling and tapping shall be done in the field.
 - b. Minimum gauges for hardware reinforcing plates shall be as follows:

1) Hinge and pivot reinforcements	7 gauge
2) Reinforcements for lock face, flush bolts, concealed holders, concealed or surface mounted closers	12 gauge
3) Reinforcements for all other surface-mounted hardware	16 gauge
2. Indoor Air Quality: All new doors shall be GREENGUARD Environmental Institute Certified per ASTM D6670-01, including GREENGUARD for Children and Schools Certification.

C. Flush Fiberglass Reinforced Polyester (FRP) Doors

1. Flush FRP Doors shall be Special-Lite FRP Doors with poured-in place urethane core with SL-20 Sandstone textured finish and SpecLite 3 FRP face panels or an approved equal. Face panels shall rabbet into extruded aluminum reglets at the stiles and rails.
2. Construct frame of extruded 60663-T6 aluminum alloy. Provide closed top and bottom rails, sealed seams and foam filled stiles and rails.
3. Finish all exposed surfaces of aluminum door rail edge trim, frames for glass lites and hardware components with a Kynar 500 resin-based two-coat fluoropolymer paint color finish.
4. Color shall be selected by the Owner from the manufacturer's full range of colors.

D. Aluminum Stile and Rail Manual Swing – Insulated Panel Doors

1. Door Construction: Mechanical clip fastening, SIGMA deep penetration plus welds and 1-1/8 inch long fillet welds inside and outside of all four corners. Stops for 1" metal faced polyisocyanurate insulated panels shall be hook-in type with reinforced EPDM glazing gaskets.
2. 1-3/4" depth tube framing for Medium Stile profile, with min. 5-1/2" wide stiles. Doors shall have reinforcement for all fixed and operating hardware, meeting all opening-force requirements of door and hardware manufacturers.
3. Air infiltration Performance: Maximum air leakage shall not exceed 1.0 cfm/sf. for entrance door units.
4. Doors shall comply with Massachusetts Architectural Access Board and the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)

5. Provide doors and door frame openings with compression type ASTM D-2000 molded neoprene weather-stripping and standard exterior bottom sweeps.
6. Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying finishes, to match framing system color. High-Performance Organic Finish (3-Coat Fluoropolymer): AA-C12C40R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: conversion coating; Organic Coating: manufacturer's standard 3-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with AAMA 2605 and with coating and resin manufacturers' written instructions.

E. Aluminum Tube Frames

1. Frames shall be fabricated of extruded 60663-T6 aluminum alloy formed or rolled into tubes to the size and profile shown on the drawings.
2. Corners of frames shall be accurately coped and mitered.
3. Frames shall be prepared and reinforced to receive door hardware in accordance with the approved door hardware schedule and templates.
 - a. Frames shall be mortised, reinforced, drilled and tapped at the factory for fully templated mortised hardware only, in accordance with approved hardware schedule and templates. Where surface-mounted hardware is to be applied, frames shall have reinforcing plates only. All drilling and tapping shall be done in the field.
 - b. Minimum thickness of hardware reinforcing plates shall be as follows;

Hinge and pivot reinforcements	7 gauge
Strike reinforcements	12 gauge
Flush bolt reinforcements	12 gauge
Closer reinforcements	12 gauge
Reinforcements for surface mounted hardware	12 gauge
4. Anchors shall be not less than 16 gauge stainless steel. The number of anchors provided on each side shall be as follows:

Frames up to 7'-6" height	3 anchors
Frames up to 12'-0" height	4 anchors
5. Frames for installation in stud partitions shall be provided with 18 gauge steel anchors welded inside jambs. Anchors spaced as required for masonry work.
6. All frames shall be provided with a steel spreader temporarily attached to the feet of both jambs to serve as a brace during the shipping and handling.
7. Provide all anchors, clips and trim as shown and detailed.
8. Finish all exposed surfaces of aluminum frames and components with a Kynar 500 resin-based two-coat fluoropolymer paint color finish.
9. Color shall be selected by the Owner from the manufacturer's full range of colors
10. Glazing for lites in doors, transoms, sidelights and storefront is specified in Section 08 8000 – Glazing.

PART 3 – EXECUTION**3.01 INSPECTION**

- A. Openings to receive doors and frames shall be examined and work shall not be started until defects have been corrected.

3.02 INSTALLATION**A. Protection**

- 1. Protect installed doors and frame work against damage from other construction work. Scratches or disfigurement caused in shipping, handling or installation shall be promptly cleaned and touched up with a rust-inhibitive enamel.
- 2. Refinish or replace doors damaged during installation.
- 3. Rehang or replace doors which do not swing or operate freely.

B. Erection:

- 1. Install door and frame work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

C. Frames:

- 1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set.
 - a. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations; attach and splice smooth with flush fasteners invisible on exposed faces.
 - b. Remove temporary braces necessary for installation only after frames have been properly set and secured.
- 2. Floor Anchors: Provide floor anchors for each mullion at floor, and secure with post-installed expansion anchors. Floor anchors may be set with powder-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.
- 3. In-Place Masonry Construction:
 - a. Secure frames in place with post-installed expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
- 4. Installation Tolerances: Shim and adjust door frames for square, alignment, twist, and plumb to the following tolerances:
 - a. Square: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumb: Plus or minus 1/16 inch, measured at jambs at floor.

D. Doors:

- 1. Fit doors accurately in frames, within clearances specified below. Shim as necessary.
 - a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch .

- c. Between Door Bottom and Top of Threshold: Maximum 3/8 inch.
- d. Between Door Bottom and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

3.03 FIELD QUALITY CONTROL

- A. Contractor shall set up field inspection by door manufacturer to review and approve installation.

3.04 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including door or frame work that is warped, bowed, or otherwise unacceptable.
- B. Remove excess sealants or other bonding material from work immediately after installation.
- C. Pre-finished Metallic Surfaces: Clean and check doors and frames for damage or abraded areas. Repairs and recoating of damaged areas shall be performed with repair paint according to manufacturer's written instructions to the satisfaction of the manufacturer and Building Enclosure Commissioning Agent.

END OF SECTION

SECTION 08 4113**ALUMINUM-FRAMED STOREFRONTS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes:
1. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups.
 2. Provide new aluminum storefront framing complete with entrance doors and operable sash openings, transoms, sidelights, glazing, insulated panels, trim, weather-stripping and related components as shown on the Drawings and specified in this Section.
 3. Provide new aluminum enclosure covers and panning, as shown on the Drawings and specified in this Section.
 4. Provide new membrane flashings as shown on the Drawings and specified in this Section.
 5. Provide all services necessary for the concealment of new door security hardware wiring within new door framing at exterior doors shown to receive security equipment. Coordinate locations with the Owner.
 6. Identification, removal, salvage, extension, and reconnection of the Owner's existing: Security Alarm devices and wiring; and Security Access Control devices and wiring. The Contractor shall remove and replace the work. Equipment removed shall be tested in the presence of the Owner to show that equipment is functioning after reinstallation and reconnection. The extension and reconnection of equipment shall be performed in accordance with the Commonwealth of Massachusetts State Building Code and by licensed HVAC, Plumbing, and Electrical contractors.
- B. Related Work - Items of work in the following sections are related to work performed under this Section:
1. Section 01 4339 – Mockups
 2. Section 06 1000 – Rough Carpentry
 3. Section 07 2500 – Weather Barriers
 4. Section 07 9200 – Joint Sealants
 5. Section 08 1000 – Doors & Frames
 6. Section 08 7100 – Door Hardware
 7. Section 08 8000 – Glazing

1.03 SUBMITTALS

- A. Provide electronic copies to be sent simultaneously to the Owner and Architect, or send one hard copy to the Owner and six hard copies to the Architect.

The Contractor must make a complete submittal to the Architect, prior to the Architect's review. The Architect will not review incomplete submittals, i.e. shop drawings which have not been field verified by the Contractor, or do not have color selectors, window samples, glazing samples, product data, product test reports, certification letters from the manufacturer, or a certification from the contractor that submittal is complete and correct.

- B. The Contractor shall apply a stamp or certify in writing that submittal has been reviewed by them as complete and correct.

- C. Product Data: Include construction details, material descriptions, fabrication method, dimensions of individual components and profiles, finishes, and operating instructions for each type of aluminum window indicated.

- a. Shop Drawings: The contractor shall verify all dimensions, rough openings and head, jamb and sill conditions as part of the shop drawing submission. Fabrication of frames shall be coordinated with existing conditions. Include plans, elevations, sections, details, attachments to other Work, operational clearances, and the following:

1. Mullion details, including reinforcement and stiffeners.
2. Joinery details.
3. Expansion provisions.
4. Flashing and drainage details.
5. Weather-stripping details.
6. Thermal-break details.
7. Glazing details.

- D. Field Quality-Control Test Reports: From a qualified testing and inspecting agency engaged by the Contractor.

- E. Product Test Reports: Based on evaluation of comprehensive tests performed within the last four years by a qualified testing agency, for each type, grade, and size of aluminum window.

- F. Performance Reports: Based on systems, components and glazing methods proposed for use on this project, provide proof that the windows as glazed for this project meet or exceed Code requirements for the following:

1. U-value.
2. Solar heat-gain coefficient.
3. Air, water, and structural
4. Performance Class and Grade
5. Condensation Resistance Reports

- G. Maintenance Data: For doors, hardware, and door and frame finishes.

- H. Letters of certification from manufacturer that:
 - 1. Product systems, frames and glazing, and fastening methods meet or exceed wind resistance standards.
 - 2. Product systems, frames and glazing, meet or exceed U-values, Solar Heat-Gain Coefficient, air, water, and structural requirements.
- I. Color selection samples: For each finish product specified, three complete sets of color chips representing the manufacturers full range of available standard colors and finishes.
- J. Color verification samples: For each finish selected, three samples minimum size 6-inches square representing actual product color and patterns.
- K. Manufacturer's fastening instructions/method to meet wind resistance standards.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Store and handle products, and all pertinent items in strict compliance with the manufacturer's instructions.
- B. Protect units adequately against damage from the elements, construction activities and other hazards before, during and after installation.

1.05 WARRANTY

- A. The contractor shall assume full responsibility and warrant for three years the satisfactory performance of the total installation which includes that of the glass, glazing, insulated panels, doors, anchorage and setting system, sealing, flashing, etc. as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
- B. Manufacturer's standard form in which manufacturer agrees to repair or replace products that fails in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
 - 1. Failure to meet performance requirements.
 - 2. Structural failures including excessive deflection.
 - 3. Water leakage, air infiltration, or condensation.
 - 4. Faulty operation of moveable sash and hardware.
 - 5. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 6. Insulating glass failure.
- C. Warranty Period for Frames: Ten years from date of Substantial Completion.
- D. Warranty Period for Metal Finishes: Twenty years from date of Substantial Completion.
- E. Warranty Period for Glass: Ten years from date of Substantial Completion.

1.06 PROJECT CONDITIONS

- A. Field Measurements: Verify openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.07 QUALITY ASSURANCE

- A. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance. To comply with performance requirements specified herein, it may be necessary for the specified manufacturers to customize referenced products.
- B. Fenestration Standard: Comply with AAMA/NWWDA 101/I.S.2, "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors," for minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
 - 1. Provide AAMA certified aluminum doors and frames with an attached label.
- C. Glazing Publications: Comply with published recommendations of glass manufacturers and GANA's "Glazing Manual" unless more stringent requirements are indicated.
- D. Pre-installation Conferences: Conduct conferences at Project site to review methods and procedures related to entrances and storefronts including, but not limited to, the following:
 - 1. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
 - 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review required testing and inspecting procedures.
- E. Installer's and Manufacturer's Qualifications:
 - 1. Manufacturing of doors, similar to type specified, with a minimum of 25 years' experience.
 - 2. Door and frame components from same manufacturer.
 - 3. Installer with min. 10 years of experience and certified by door and frame manufacturer.
 - 4. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Section 013119.

1.08 COMMISSIONING REQUIREMENTS

- A. The Contractor shall coordinate and assist in all commissioning activities, as directed by the WCA, and as indicated in Section 01 91 19 – Building Envelope Commissioning. The Contractor shall include the cost of all Commissioning Requirements in their contract price.
- B. Perform water testing for two (2) separate days at the completed storefront assemblies in accordance with AAMA 501.2 – Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts. Testing shall be performed on the storefronts at completion of first door area to be installed, and at the completion of all door installations. The WCA shall direct and observe all tests and the manufacturer's technical representative shall be present for all testing.
- C. Submit results of ASTM E1105, ASTM E783 and/or AAMA 501.2 testing for the specified and approved systems.
- D. Perform sealant adhesion tests in accordance with ASTM C1521 – Standard Practice for Evaluation of Adhesion of Installed Weatherproofing Sealant Joints and WK 21464 – Standard

Practice for Non-Destructive Evaluation of Adhesion of Installed Weatherproofing Sealant Joints Using a Rolling Device. Contractor shall perform tests as a part of their quality control process and maintain a log for submission as part of the closeout documentation. Additional testing may be required and shall be performed as directed by the WCA.

- E. Submit results of ASTM C1521 testing for the specified and approved sealants.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. EFCO Corporation
 2. Kawneer, an Arconic Company
 3. Peerless

2.02 PRODUCT DESCRIPTION

- A. Aluminum Storefront: 2" x 4 ½" aluminum tube thermally broken framing system, EFCO 403 Series storefront frame and glazing systems, or an approved equal.
- B. Aluminum Entrance Doors: 1 ¾" depth tube framing for wide stile profile, with minimum 5 ½" wide stiles, EFCO Series D502 Wide Stile, or an approved equal.
- C. Snap Trim: Provide interior and exterior aluminum snap trim with finish to match aluminum frames at jambs where existing caulking remains exposed.

2.03 PERFORMANCE REQUIREMENTS

- A. Aluminum Storefronts: U-Factor: 0.42 maximum.
- B. Solar Heat Gain Coefficient (SHGC): 0.40 maximum.
- C. Aluminum Entrances and Storefronts: Air Leakage: maximum rate of 0.06 cfm/ft² @ 6.24 psf (75Pa) for fenestration area as determined in accordance with ASTM E283 by an accredited, independent laboratory, and labeled and certified by the manufacturer.
- D. Aluminum Entrance Doors: Air Leakage: maximum rate of 0.1 cfm/ft² @ 6.24 psf (75Pa) for door area as determined in accordance with AAMA 501-1 by an accredited, independent laboratory, and labeled and certified by the manufacturer.
- E. Basic Wind Speed of site location (V): 110 mph, with a minimum design wind pressure of 45. Water Infiltration performance shall meet or exceed ASTM E331 at 12.0 psf pressure differential.
- F. Aluminum Extrusions: Alloy and temper recommended by window manufacturer for strength, corrosion resistance and application of required finish, but not less than 22,000 psi ultimate tensile strength, a yield of 16,000 psi. Comply with ASTM B 221. Wall Thickness: Nominal 0.125 frame and vent.
- G. Fasteners: Aluminum, stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.

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1. Do not use exposed fasteners on exterior except where unavoidable for application of hardware. Match finish of adjoining metal.
 2. Provide non-magnetic stainless steel, tamper-proof screws for exposed fasteners, where required, or special tamper-proof fasteners.
 3. Locate fasteners so as not to disturb the thermal barrier construction of windows.
- H. Anchors, Clips, and Accessories: Depending on strength and corrosion-inhibiting requirements, fabricate units of aluminum, non-magnetic stainless steel or hot-dip zinc coated steel or iron complying with ASTM A 123.
- I. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- J. Compression Glazing Strips and Weather-stripping: At manufacturer's option, provide neoprene gaskets complying with ASTM D 2000 Designation 2BC415 to 3BC415, PVC gaskets complying with ASTM D2287, or expanded neoprene gaskets complying with ASTM C 509, Grade 4
- K. Sliding-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.
1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semirigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.
- L. Replaceable Weather Seals: Comply with AAMA 701/702.
- M. Sealant: For sealants required within fabricated windows, provide window manufacturer's standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- N. Thermally Improved Construction: Fabricate aluminum frames with an integral, concealed (products with exposed thermal barriers will not be acceptable), low-conductance thermal barrier; located between exterior materials and frame members exposed on interior side; in a manner that eliminates direct metal to metal contact.
1. All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions.
 2. No thermal short circuits shall occur between the exterior and interior.
 3. The thermal barrier shall be that which will meet the total storefront system U-value.
- O. Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length at design pressure. Provide aluminum windows capable of withstanding the wind loads based on passing AAMA/NWWDA 101/I.S.2, Uniform Load Structural Test, at basic wind speed indicated and as required by the Massachusetts State Building Code:
1. Deflection: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length at design pressure based on structural computations.
 2. Wind and Seismic Loads: Not less than that required by Code.

3. Movements of supporting structure including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads as required by Code. Deflection may require special considerations including but not limited to head receptors.
- P. Closure trim angles as indicated on the drawings with a minimum 0.062 inch wall thickness.
- Q. Provide products, including anchorage, that accommodate thermal movements of units resulting from the following maximum change (range) in ambient and surface temperatures without buckling, distortion, opening of joints, failure of joint sealants, damaging loads and stresses on glazing and connections, and other detrimental effects. Engineering calculations shall be based upon actual surface temperatures of materials due to solar heat gain and nighttime-sky heat loss.
 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.

2.04 GLAZING

- A. Glazing System: See Section 088000 Glazing for glazing systems for Aluminum-Framed Storefronts
- B. Glazing System shall be designed to meet Massachusetts Energy Stretch Code.
- C. Provide obscure glass as part of insulating glass system in locations indicated on the drawings. The Owner shall select from the manufacturer's standard obscure glass selector.

2.05 FABRICATION

- A. Fabricate aluminum, in sizes indicated, that comply with AAMA/NWWDA 101/I.S.2 for performance class and performance grade indicated. Include a complete system for assembling components and anchoring frames.
- B. Fabricate aluminum with an integral, concealed, low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact.
- C. Provide concealed weep holes and internal passages to conduct infiltrating water to exterior. A 1-inch wide by 1/8-inch high weep flap shall be located 3-inches from each end of the sill for drainage. Provide additional weeps at sill where drainage is blocked by shims or other obstructions.
- D. Provide cover plates as shown on drawings, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide muntins and mullions and cover plates capable of withstanding design loads of window units.
- E. Glaze aluminum in the factory where practical and possible for applications indicated. Comply with AAMA/NWWDA 101/I.S.2-08.

2.06 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish system for all aluminum components shall be factory applied after proper preparation. Thoroughly clean all surfaces; remove all blemishes, dents, abrasions, scratches, and tool

marks from surfaces which will be exposed to view.

- C. On clean extrusions free from serious surface blemishes; on exposed surfaces visible when installed product's operating sash are closed.
- D. Finish all exterior areas of aluminum frames, operable sash and components with an Arkema, Inc., 70% Kynar 500 resin-based two-coat fluoropolymer paint color finish in accordance with American Architectural Manufacturers Association Designation AAMA 2605, or approved equal.
 - 1. Color: Chosen from window manufacturer's standard colors. The Owner/Architect will select the final color finish.
- E. Finish all interior areas of aluminum frames, operable sash and components with a baked enamel finish.
 - 1. Color: Chosen from window manufacturer's standard colors. The Owner/Architect will select the final color finish.

2.07 PRODUCT LABELING

- A. Exterior frame systems shall be tested and labeled as conforming to AMA/WDMA/CSA101/I.S.2/A440. The label shall state the name of the manufacturer, the approved labeling agency and the product designation as specified in AAMA AMA/WDMA/CSA101/I.S.2/A440.

2.08 MEMBRANE FLASHINGS

- A. Membrane flashings shall be Vycor Butyl self-adhered flashings as manufactured by Grace Construction Products or approved equal.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings, vapor retarders, and other built-in components; operational clearances; and other conditions affecting performance of work.
 - 1. Masonry and Concrete Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
 - 2. Metal or Wood Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General: Comply with manufacturers' written instructions for installing doors and frames, accessories, and other components; Drawings; and Shop Drawings.
- B. Install doors and storefront frames level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to flashing and other adjacent construction.
- C. Set thresholds and sill members in bed of sealant or with gaskets, as indicated, for weather-tight construction.

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- D. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, specified wind loads, and cyclic reaction.
- E. Install frames and components to drain condensation, water penetrating joints, and moisture migrating within frames to the exterior.
- F. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified in "Dissimilar Materials" Paragraph in Appendix B in AAMA/NWWDA 101/I.S.2.
- G. Separate all wood blocking in contact with aluminum with membrane flashing. Membrane flashings shall be Vycor Butyl self-adhered flashings as manufactured by Grace Construction Products or approved equal. Install self-adhering membrane flashings continuously at perimeter of rough openings to cover all new or existing wood blocking. Lap all flashing onto adjacent head, jamb and sill construction to within ½-inch of outermost face of framing. Flashing shall bridge all gaps in blocking and existing wall assemblies to provide a complete air barrier across existing wall cavities and between the existing wall construction and the window openings.
- H. Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications.
- I. Doors shall be securely anchored in place to a straight, plumb and level condition, without distortion. Weather-stripping contact and hardware movement shall be checked and final adjustments made for proper operation and performance of units.
- J. Furnish and apply sealing materials to provide a weather tight installation at all joints and intersections and at opening perimeters.
- K. Sealing materials specified shall be used in strict accordance with the manufacturer's printed instructions, and shall be applied only by mechanics specially trained or experienced in their use. All surfaces must be clean and free of foreign matter before applying sealing materials. Sealing compounds shall be tooled to fill the joint and provide a smooth finished surface.

3.03 FIELD QUALITY CONTROL

- A. The Contractor shall engage a qualified independent testing and inspecting agency to perform the required field tests and inspections of installed systems. Contractor shall include the cost for the field quality control in his bids.
- B. Perform air, water and sealant testing as indicated in paragraph 1.08 COMMISSIONING REQUIREMENTS, of this section. The WCA shall direct and observe all tests and the manufacturer's technical representative shall be present for all testing.
- C. Submit results of ASTM E1105, ASTM E783, AAMA 501.2 and/or ASTM C1521 testing as applicable for the specified and approved systems.
- D. Remove, repair or replace the applicable systems, where test results indicate that they do not comply with the specified requirements.
- E. Additional testing and inspection shall be performed at the Contractor's expense to determine compliance of replaced or repaired work, following the completion of repairs or replacement.

3.04 ADJUSTING

- A. Adjust all door operating hardware and accessories for a tight fit at contact points and weather-stripping for smooth operation and weather-tight closure. Lubricate hardware and moving parts.

3.05 PROTECTION AND CLEANING

- A. Protect surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor frame surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact frame surfaces, remove contaminants immediately according to manufacturer's written recommendations.
- B. Clean surfaces immediately after installation. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Clean glass immediately after installation. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.
- D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION

SECTION 08 5113**ALUMINUM WINDOWS****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.



1.02 DESCRIPTION OF WORK

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this Section and as indicated on the Drawings. Generally, this includes:
1. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups.
 2. Contractor shall provide compatible products from the same manufacturer for all Aluminum Window systems, and all components shall meet the same specified performance and finish requirements.
 3. Provide new factory glazed, thermally-broken, aluminum windows complete with glazing, trim, sills, sash operating hardware and related components as shown on the Drawings and specified in this Section.
 4. Provide new pre-formed aluminum sills, jamb and head panning and fastened snap-on mullion cover enclosures as shown on the Drawings and specified in this Section.
 5. Provide new self-adhering membrane flashings and low-expanding foam insulation as shown on the Drawings and specified in this Section.
 6. Provide new aluminum-framed heavy duty Insect Screens at all operable sash openings as indicated on the Drawings and specified in this Section.
- B. Product and Testing Standards:
1. AAMA/WDMA/CSA 101/I.S.2/A440-11 NAFS – North American Fenestration Standard/Specification for windows, doors and skylights.
 2. AAMA 701/702-11 Voluntary Specification for Pile Weatherstripping and Replacement Fenestration Weatherseals.
 3. AAMA 502-12 Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
 4. ASTM E283-12 Standard Test Method for Determining Rate of Air Leakage Through Windows.
 5. ASTM E330-14 Standard Test Method for Structural Performance of Exterior Windows.
 6. ASTM E331-09 Standard Test Method for Water Penetration for Exterior Windows.

- C. Related Work - Items of work in the following sections are related to work performed under this Section.
1. Section 01 4339 – Mockups.
 2. Section 06 1000 – Rough Carpentry
 3. Section 06 2000 – Finish Carpentry
 4. Section 07 2500 – Weather Barriers
 5. Section 07 9200 – Joint Sealants
 6. Section 08 8000 – Glazing
 7. Section 09 9000 – Painting and Coating
 8. Section 12 2123 – Window Shades

1.03 SUBMITTALS

- A. Provide electronic copies to be sent simultaneously to the Owner and Architect.
- B. The Contractor must make a complete submittal to the Architect, prior to the Architect's review. The Architect will not review incomplete submittals, i.e. shop drawings which have been field verified by the Contractor, color selectors, window sample, glazing sample, product data, product test reports, color selector, certification letters from the manufacturer, and certification from the Contractor that submittal is complete and correct.
- C. The Contractor shall apply a stamp or certify in writing that submittal has been reviewed by them as complete and correct.
- D. Product Data: Include construction details, material descriptions, fabrication method, dimensions of individual components and profiles, finishes, and operating instructions for each type of aluminum window indicated.
- E. Shop Drawings: The Contractor shall verify all dimensions, rough openings and head, jamb and sill conditions as part of the shop drawing submission. Fabrication of frames shall be coordinated with existing conditions. Include plans, elevations, sections, details, attachments to other Work, operational clearances, and the following:
1. Mullion details, including cover plates and fasteners.
 2. Joinery details with thermal insulation in mullion cavities.
 3. Expansion provisions.
 4. Flashing and drainage details.
 5. Weather-stripping details.
 6. Thermal-break details.
 7. Glazing details.
 8. Screens.
- F. Field Quality-Control Test Reports: From a qualified testing and inspecting agency engaged by Contractor.

- G. Product Test Reports: Based on evaluation of comprehensive tests performed within the last four years by a qualified testing agency, for each type, grade, and size of aluminum window.
- H. Performance Reports: Based on systems, components and glazing methods proposed for use on this Project, proof that windows as glazed for this Project meet or exceed Code requirements for the following:
 - 1. U-value.
 - 2. Solar heat-gain coefficient.
 - 3. Air, water, and structural
 - 4. Performance Class and Grade
- I. Maintenance Data: For operable window sash, operating window hardware, weather stripping, and finishes.
-  J. Color selection samples: For each finish product specified, three complete sets of color chips representing manufacturers full range of available colors and patterns.
- K. Color verification samples: For each finish selected, three samples minimum size 6-inches square representing actual product color and patterns.
-  L. Product samples: For each product specified, one full size sample.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Store and handle windows glazing, mullions, panels, and all pertinent items in strict compliance with the manufacturer's instructions.
- B. Protect units adequately against damage from the elements, construction activities and other hazards before, during and after installation.

1.05 WARRANTY

- A. The Contractor shall assume full responsibility and warrant for two years the satisfactory performance of the total window installation which includes that of the windows, glass, glazing, anchorage and setting system, sealing, flashing, etc. as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
- B. Manufacturer's standard form in which manufacturer agrees to repair or replace aluminum windows that fails in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
 - 1. Failure to meet performance requirements.
 - 2. Structural failures including excessive deflection.
 - 3. Water leakage, air infiltration, or condensation.
 - 4. Faulty operation of moveable sash and hardware.
 - 5. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 6. Insulating glass failure.
- C. Warranty Period Frames: Ten years from date of Substantial Completion.

- D. Warranty Period for Metal Finishes: Twenty years from date of Substantial Completion.
- E. Warranty Period for Glass: Ten years from date of Substantial Completion.

1.06 PROJECT CONDITIONS

- A. Field Measurements: Verify openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.07 QUALITY ASSURANCE

- A. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance. To comply with performance requirement specified, herein, it may be necessary for the specified manufacturers to customize referenced products.
- B. Fenestration Standard: Comply with AAMA/NWWDA 101/I.S.2, "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors," for minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
 - 1. Provide AAMA certified aluminum windows and frames with an attached label.
- C. Glazing Publications: Comply with published recommendations of glass manufacturers and GANA's "Glazing Manual" unless more stringent requirements are indicated.
- D. Pre-installation Conferences: Conduct conferences at Project site to review methods and procedures related to aluminum windows including, but not limited to, the following:
 - 1. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
 - 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review required testing and inspecting procedures.
- E. Installer's and Manufacturer's Qualifications:
 - 1. Manufacturing of windows, similar to type specified, with a minimum of 25 years of experience.
 - 2. Sash and frame components from same manufacturer.
 - 3. Installer with min. 10 years of experience and certified by window manufacturer.

1.08 COMMISSIONING REQUIREMENTS

- A. The Contractor shall coordinate and assist in all commissioning activities, and as indicated in Section 01 9119 – Building Envelope Commissioning. The Contractor shall include the cost of all Commissioning Requirements in their contract price.
- B. Perform air and water testing on four (4) complete window assemblies, at various stages of the installation, in accordance with ASTM E1105 – Field Determination of Water Penetration of

Installed Exterior Windows, by Uniform or Cyclic Static Air Pressure Difference and ASTM E783 – Standard Test Method for Field Measurement of Air Leakage Through Installed Existing Windows. Window testing shall be performed on windows at 25% completion (mockup testing) and 75% completion. The Cx Agent shall direct and observe all window tests and the manufacturer's technical representative shall be present for all window testing.

- C. Submit results of ASTM E1105, ASTM E783 and/or AAMA 501.2 testing for the specified and approved systems.
- D. Perform sealant adhesion tests in accordance with ASTM C1521 – Standard Practice for Evaluation of Adhesion of Installed Weatherproofing Sealant Joints and WK 21464 – Standard Practice for Non-Destructive Evaluation of Adhesion of Installed Weatherproofing Sealant Joints Using a Rolling Device. Contractor shall perform tests as a part of their quality control process and maintain a log for submission as part of the closeout documentation. Additional testing may be required and shall be performed as directed by the Cx Agent.
- E. Submit results of ASTM C1521 testing for the specified and approved sealants.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. EFCO Corporation
 - 2. Graham Architectural Products
 - 3. Peerless Architectural Windows and Doors
 - 4. Architectural Window Manufacturing Corporation

2.02 PRODUCT DESCRIPTION

- A. Basis of Design shall be as follows:
 - 1. Projected Windows with matching fixed units:
EFCO Series 450X Thermal AW-PG120-AP Grade.
- B. Panning Trim: Panning shall be extruded aluminum square corner profile head, jamb and sill panning enclosures at window opening perimeter. Provide independent recessed reveal edge sealant receptor trim at head panning for opening height variations. Panning profile to be manufacturer's standard units, and sized to approximate depth and width of existing panning and to cover existing areas of sealants.
- C. Snap Trim: Provide interior aluminum snap trim with finish to match aluminum frames at jambs head and sill to cover unpainted areas of existing wood trim.
- D. Exterior Mullion Covers: Provide exterior aluminum 2" wide by ¼" deep mullion cover snap trim with matching finish secured onto fastened backplate.

2.03 PERFORMANCE REQUIREMENTS

- A. Aluminum Window: U-Factor: 0.45 maximum.
- B. Solar Heat Gain Coefficient (SHGC): 0.40 maximum.

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- C. Aluminum Window Air Leakage: not-to-exceed 0.1 cfm/ft² @ 6.24 psf (75Pa) for operable sash and for fixed sash 0.3 cfm/ft² @ 6.24 psf (300Pa) as determined in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 or NFRC 400 by an accredited, independent laboratory, and labeled and certified by the manufacturer.
- D. Water Penetration: No uncontrolled water leakage when tested per ASTM E331 and ASTM E547 at a static air pressure difference of 15 psf.
- E. Condensation Resistance Factor: no less than 42 when tested in accordance with AAMA 1503.1.
- F. Moisture infiltration shall be per AAMA/WDMA/CSA 101/1.52/A440 at 6.75 minimum PSF. Failure will be deemed as moisture that passes the interior plane of prime window assembly, excluding snap trim
- G. Basic Wind Speed of site location (V): 110 mph, with a minimum design wind pressure of 50 PSF. Windows, glazing, components and anchorage to substrate must be designed to withstand this pressure.
- H. Performance Class and Grade: AW-PG50-H minimum.
- I. Aluminum Extrusions: Alloy and temper recommended by window manufacturer for strength, corrosion resistance and application of required finish, but not less than 22,000 psi ultimate tensile strength, a yield of 16,000 psi. Comply with ASTM B 221. Wall Thickness: Nominal 0.125 frame and vent.
- J. Fasteners: Aluminum, stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.
 - 1. Do not use exposed fasteners on exterior except where unavoidable for application of hardware. Match finish of adjoining metal.
 - 2. Provide non-magnetic stainless steel, tamper-proof screws for exposed fasteners, where required, or special tamper-proof fasteners.
 - 3. Locate fasteners so as not to disturb the thermal barrier construction of windows.
- K. Anchors, Clips, and Accessories: Depending on strength and corrosion-inhibiting requirements, fabricate units of aluminum, non-magnetic stainless steel or hot-dip zinc coated steel or iron complying with ASTM A 123.
- L. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- M. Compression Glazing Strips and Weatherstripping: At manufacturer's option, provide neoprene gaskets complying with ASTM D 2000 Designation 2BC415 to 3BC415, PVC gaskets complying with ASTM D2287, or expanded neoprene gaskets complying with ASTM C 509, Grade 4
- N. Sliding-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.

1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semirigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.
- O. Replaceable Weather Seals: Comply with AAMA 701/702.
- P. Sealant: For sealants required within fabricated windows, provide window manufacturers' standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- Q. Thermally Improved Construction: Fabricate aluminum windows with an integral, concealed (products with exposed thermal barriers will not be acceptable), low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal to metal contact.
 1. All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions. Thermal break shall be cast in place, high strength, high density polyurethane with a minimum tensile strength of 4000 psi and maximum thermal conductivity of 0.60 BTU per hour/square foot/°F.
 2. No thermal short circuits shall occur between the exterior and interior.
 3. The thermal barrier shall be that which will meet the total window system U-value.
- R. Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch whichever is less, at design pressure. Provide aluminum windows capable of withstanding the wind loads based on passing AAMA/NWWDA 101/I.S.2, Uniform Load Structural Test, at basic wind speed indicated and as required by the Massachusetts State Building Code:
 1. Deflection: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length at design pressure based on structural computations.
 2. Wind and Seismic Loads: Not less than that required by Code.
 3. Movements of supporting structure including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads as required by Code. Deflection may require special considerations including but not limited to head receptors.
- S. Attachment plates shall be 6063-T5 extruded aluminum, 0.125" thick minimum. Prepunched holes shall be provided in the attachment plates to permit fastening to windows and substrates.
- T. Provide windows, including anchorage, that accommodate thermal movements of units resulting from the following maximum change (range) in ambient and surface temperatures without buckling, distortion, opening of joints, failure of joint sealants, damaging loads and stresses on glazing and connections, and other detrimental effects. Base the engineering calculations on actual surface temperatures of materials due to solar heat gain and nighttime-sky heat loss.
 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.

2.04 GLAZING

- A. Glazing System: See Section 088000 Glazing for glazing systems for Aluminum Windows.
- B. Provide obscure and tempered glass as part of insulating glass system in locations indicated on the Drawings.

2.05 WINDOW HARDWARE

- A. Hardware Requirements: Provide hardware that complies with AAMA/NWWDA 101/I.S.2.
- B. Sweep latches shall be of white bronze with a US25D brushed finish. An optional extruded aluminum spring catch shall be provided at the sill of the lower sash. Windows with spring latches shall also have standard sweep latches at the meeting rail.
- C. Hardware shall include releasable stay arms located in jamb and limit-stop with custodial override.
- D. Hardware shall have the capability to be repaired and replaced in the field without disassembly of sash and frame.
- E. Weather-Strip: Provide weather-stripping for all operable sash to meet water and air infiltration design parameters.
- F. Provide project-in locking hardware at high operable windows with pole ring cam handle and pole hook hanger.

2.06 FABRICATION

- A. Fabricate aluminum windows, in sizes indicated, that comply with AAMA/NWWDA 101/I.S.2 for performance class and performance grade indicated. Include a complete system for assembling components and anchoring windows.
- B. Fabricate aluminum windows with an integral, concealed, low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact.
- C. Provide exterior mullion cover plates as shown on drawings, matching window elevations shown, complete with anchors for support to structure and installation of window units.
- D. Provide full-perimeter weather stripping for each operable sash.
- E. Provide concealed weep holes and internal passages to conduct infiltrating water to exterior. A 1-inch wide by 1/8-inch high weep flap shall be located 3-inches from each end of the sill for drainage. Provide additional weeps at sill where drainage will be blocked by other obstructions.
- F. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design loads of window units.
- G. Glaze aluminum windows in the factory where practical and possible for applications indicated. Comply with AAMA/NWWDA 101/I.S.2. Operable sash and fixed glazed openings shall be re-glazable without dismantling or removing the sash without the use of special tools.

2.07 INSECT SCREENS

- A. Provide heavy duty insect screens in pre-finished aluminum tamperproof frames at all operable sash locations on the Drawings, to match frame finish. Screen frames to be provided with manual hardware for removal from the interior only. Heavy-Duty screens to be constructed of .014 stainless steel mesh.

2.08 SCREEN FABRICATION

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- A. Screen frame corners shall be mitered, fitted with an internal tension coupling assembly and fastened. Provide integral groove in screen frame with a cushioning strip/insect shield. Provide screens with a removable concealment plate of nominal thickness of .050-inch extruded 6063-T6 aluminum alloy attached to the main frame using tamper resistant screws.
- B. Wire cloth infill shall be retained in frame by a removable concealment plate and tamper resistant screws that penetrate the concealment plate, infill and main frame approximately 4" on center.
- C. Each screen shall come fully assembled and tested from the factory, complete with all mounting hardware.

2.09 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish system for all aluminum components shall be factory applied after proper preparation. Thoroughly clean all surfaces; remove all blemishes, dents, abrasions, scratches, and tool marks from surfaces which will be exposed to view.
- C. On clean extrusions free from serious surface blemishes; on exposed surfaces visible when installed product's operating sash are closed.
- D. Finish all exterior areas of aluminum frames, operable sash and components with an Arkema, Inc., 70% Kynar 500 resin-based two-coat fluoropolymer paint color finish in accordance with American Architectural Manufacturers Association Designation AAMA 2605, or approved equal.
 - 1. Exterior Finish Color: All sash and perimeter frame colors shall be chosen from window manufacturer's standard colors. The Owner/Architect will select the final color finish.
- E. Finish all interior areas of aluminum frames, operable sash and components with a baked enamel finish.
 - 1. Interior Finish Color: Chosen from window manufacturer's standard colors. The Owner/Architect will select the final color finish.

2.10 PRODUCT LABELING

- A. Exterior windows shall be tested and labeled as conforming to AMA/WDMA/CSA101/I.S.2/A440. The label shall state the name of the manufacturer, the approved labeling agency and the product designation as specified in AAMA AMA/WDMA/CSA101/I.S.2/A440.

2.11 MEMBRANE FLASHINGS

- A. Membrane flashings shall be Vycor V40 Butyl self-adhered flashings as manufactured by Grace Construction Products or approved equal.

2.12 INSULATING FOAM

- A. Provide non-expanding foam insulation to fill all voids between new frames and existing and new blocking and existing wall construction to render wall cavity air tight. Foam insulation shall be a product specifically designed for door and window applications.

2.13 MINERAL-WOOL FIBER INSULATION

- A. ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings, vapor retarders, and other built-in components; operational clearances; and other conditions affecting performance of work.
 - 1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
 - 2. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Verify that screens fit to window openings with allowable tolerances, are plumb, level, provide a solid anchoring surface and comply with approved shop drawings.

3.02 INSTALLATION

- A. General: Comply with manufacturer's written instructions for installing windows, accessories, and other components; Drawings; and Shop Drawings.
- B. Install windows and panning level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Set sill members in bed of sealant or with gaskets for weather-tight construction.
- D. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- E. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified in "Dissimilar Materials" Paragraph in Appendix B in AAMA/NWWDA 101/I.S.2.
- F. Separate all wood blocking in contact with aluminum with a membrane flashing. Membrane flashings shall be Vycor Butyl self-adhered flashings as manufactured by Grace Construction Products or approved equal.
- G. Install window screens in accordance with approved shop drawings and manufacturer's installation instructions. Plumb and align faces in a single plane and erect screens square and true, adequately anchored. After completion of installation, screens shall be adjusted, in working order and clean.
- H. Provide Mineral Wool insulation to fill all voids and cavities within window frame head and jamb extrusions. Leave lower 1'-0" of frame at jambs uninsulated to allow for weeping. Install insulation without compression and for full depth of frames.

- I. Provide non-expanding foam insulation to fill all voids found in existing wood frame and trim cavities at locations where existing trim or panning is removed from window opening.

3.03 ADJUSTING

- A. Adjust operating sashes and ventilators, screens, hardware, operators, and accessories for a tight fit at contact points and weather stripping for smooth operation and weather-tight closure. Lubricate hardware and moving parts.

3.04 PROTECTION AND CLEANING

- A. Protect product surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants.
- B. Clean surfaces immediately after installation. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Clean glass immediately after installation. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.
- D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

3.05 FIELD QUALITY CONTROL

- A. The Contractor shall engage a qualified independent testing and inspecting agency to perform the required field tests and inspections of installed systems. Contractor shall include the cost for the field quality control in his bids.
- B. Perform air, water and sealant testing as indicated in paragraph 1.08 COMMISSIONING REQUIREMENTS, of this section. The Cx Agent shall direct and observe all tests and the manufacturer's technical representative shall be present for all testing.
- C. Submit results of ASTM E1105, ASTM E783, AAMA 501.2 and/or ASTM C1521 testing as applicable for the specified and approved systems.
- D. Remove, repair or replace the applicable systems, where test results indicate that they do not comply with the specified requirements.
- E. Additional testing and inspection shall be performed at the Contractor's expense to determine compliance of replaced or repaired work, following the completion of repairs or replacement.

END OF SECTION

SECTION 08 7100**DOOR HARDWARE****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Remove and salvage to the Owner, all existing lock cores from exit devices, lever or cylindrical locksets from doors to be replaced. Box and label salvaged lock cores with the school name, room or door lock core number.
 2. Provide continuous surface-mounted hinges on new exterior doors.
 3. Provide interior rim type exit devices, keyed on both the interior and exterior of the door, with interchangeable lock cores compatible with the school's lock system on scheduled doors.
 4. Provide strike plates on existing or new frame jambs at new exterior doors.
 5. Provide surface mounted exterior door pulls and pull plates on scheduled new exterior doors.
 6. Provide surface-mounted door closers and mounting plates on new exterior doors.
 7. Provide keyed removable electrified mullions at pairs of doors at scheduled openings.
 8. Provide removable mullions at pairs of aluminum stile and rail doors at scheduled openings.
 9. Provide surface-mounted kickplates on new exterior doors.
 10. Provide concealed adjustable bottom brush door weather-seal sweeps on new exterior doors. Coordinate type and installation with Aluminum-Framed AMP and FRP exterior doors specified in Section 08 1000 Doors and Frames.
 11. Provide door bottom sweeps on aluminum stile and rail doors.
 12. Provide flat saddle thresholds set in bed of mastic at scheduled new exterior doors.
 13. Provide adhesive-applied door numeral vinyl signage on both sides of doors.
 14. Provide electric strikes and wire transfer inside of removable mullions at selected openings.

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- B. Related Work Specified in Other Sections:
 - 1. Section 02 4100 – Demolition
 - 2. Section 01 3543 – Environmental Procedures
 - 3. Section 06 1000 – Rough Carpentry
 - 4. Section 06 2023 – Finish Carpentry
 - 5. Section 07 9200 – Joint Sealants
 - 6. Section 08 1000 – Doors and Frames
 - 7. Section 08 4113 – Aluminum-Framed Storefronts
 - 8. Section 08 8000 – Glazing

1.03 SUBMITTALS

- A. Hardware Schedules and Product Data: Submit electronic copies of hardware schedule and catalog cuts for all hardware. Submit in vertical format, a typed finish hardware schedule including catalog cuts. The Architect's approval will not relieve the contractor of the responsibility of providing required hardware needed to complete the project.
- B. Furnish templates needed by door and frame manufacturer(s) to enable proper machining for the required template hardware.
- C. Closeout Submittals - Furnish the following for inclusion in the Owner's Operation and Maintenance Manual, specified in Section 01 7000. Place in a three (3) ring binder as specified in Section 01 7000.
 - 1. Catalog cuts for each item used in the project.
 - 2. Parts list and numbers for each item used.
 - 3. Maintenance and installation instructions for all items.
 - 4. Warranty information and contact information.

1.04 QUALITY ASSURANCE

- A. Manufacturer's model numbers listed in sets are to establish the standard of quality for this project. Similar items by manufacturers other than those listed that conform to this quality standard may be accepted by Architect provided required data are submitted.
- B. Hardware supplier must be engaged in regularly contracting work and be staffed to expedite the work. The firm shall have been furnishing finish hardware on similar projects in the vicinity of this project for no less than five years.
- C. After verification of quantities delivered a proof-of-delivery document shall be signed by both the supplier's representative and an authorized representative from the contracting firm confirming receipt of materials.

1.05 WARRANTIES

- A. Supply written manufacturer's warranties, agreeing to repair or replace door hardware which is defective in manufacture or installation, or which fails to operate in accordance with the specifications during the warranty period. Warranty shall be for 10-years minimum from the date of Substantial Completion.
- B. Supply written contractor's warranties, agreeing to repair or replace door hardware which is defective in manufacture or installation, or which fails to operate in accordance with the specifications during the warranty period. Warranty shall be for 2-year minimum from the date of Substantial Completion.
- C. Both manufacturer's and contractor's warranties shall run concurrently.

1.06 DELIVERY, STORAGE, HANDLING, AND SCHEDULING


- A. Hardware shall be delivered to the job site in the manufacturer's original packages, marked to correspond with the approved hardware schedule door numbers.
- B. After verification of quantities delivered a proof-of-delivery document shall be signed by both the supplier's representative and an authorized representative from the contracting firm confirming receipt of materials.

PART 2 – PRODUCTS**2.01 MATERIALS**

- A. Hardware locations are indicated on the Drawings and Details, and hardware shall be as listed in the Hardware Sets of this Specification Section.
- B. Hinges:
 - 1. Continuous, Heavy Duty, concealed leaf, aluminum, geared, with rain caps painted to match door edge trim.
 - a. Special-Lite, SL-17
 - b. Roton – 780-112HD
 - c. Ives – 224HD.
- C. Exit devices shall be rim type and have keyed dogging feature with all cores removable 1-1/4" straight cam mortise cylinders and be compatible with the school's Schlage Primus lock core systems, Model XP98-CD-RX by Von Duprin or an approved equal. Exit devices on scheduled single doors and one of a pair of doors shall have keyed locks on both sides but no exterior hardware, except for door pulls or security pull plates noted in Hardware Sets. Second exit device on pairs of doors shall not have exterior keyed locks and be an exit-only device. Provide 954 or 9094 Strikes for installation at frame or mullion jambs. (Note: Exit devices shall be of type capable of receiving future battery-powered exit alarm kits.)
- D. Latchlocks on exterior shall be compatible with exit device. Latchlocks shall be Lever Handle design Model XP98L-06 with 996L-R/V trim by Von Duprin or an approved equal.
- E. Electric Strikes: Provide 9400 Series electric strike by HES/ABBA Abloy. Electric Strike to be operated by Owner's existing exterior access controller. Provide electric transfer within electrified removable mullion and all equipment, devices and wiring to connect and activate system in conjunction with new access devices.
- F. U-Shaped Pulls: Rockwood/Assa Abloy, TB157, stainless steel, 3/4-inch diameter, 10-inch centers with 1-1/2 inch clearance, or approved equal.

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- G. Security Pull Plate: Model 122L by Hager or approved equal.
- H. Closers: ANSI/BHMA grade 1 closers, LCN 4040XP Parallel Surface Closers with 4040-3049 Hold-Open Parallel Arms and 4040-62PA shoes for push side mounting and Cush-N-Stop feature. Closers complete with Torex drivers as recommended by manufacturer. Door closers shall be 100% forged high strength cast iron. Covers shall be non-metallic. Provide units with ten year manufacturer's warranty
- I. Removable Mullions:
 - 1. Keyed Removable Mullions for Special-Lite AMP and FRP double doors shall be Model SL-60 constructed of 3/16" thick x 2" x 3" extruded aluminum with top and bottom keyed cylinders or approved equal.
 - 2. Removable Mullions for aluminum stile and rail doors shall be Kawneer RM86 or units compatible with rim exit devices.
 - 3. Install mullions behind inner face of double doors to allow mounting of rim exit device strikes
- J. Keyed Electrified Removable Mullions: Provide a keyed removable electrified aluminum mullion, Special-Lite Electrified Removable Mullions, model SL-60E constructed of 3/16" thick x 2" x 3" extruded aluminum to be used in conjunction with the electric strike for Special-Lite AMP and FRP doors. Install behind the inner face of double doors to allow mounting of rim exit device strikes.
- K. Adjustable Bottom Brush and Adjustable Astragal: Model SL-301 with concealed bottom brush by Special-Lite Doors, or an approved equal.
- L. Door Bottom Rail Weathering Sweeps: Kawneer surface-mounted aluminum strip bottom seal with vinyl sweep, finished to match doors or approved equal.
- M. Kickplates: 2 inches less door width by 10 inch high or as otherwise noted in the hardware sets, 18 gauge, Type 304, Satin #4 finished stainless steel.
- N. Thresholds shall be mill-finished extruded aluminum with thermal barrier.
 - 1. National Guard Products, Inc. – 8429, 1/2" x 9" thermal barrier flat saddle threshold or approved equal.
- O. Weatherstripping: Door manufacturer's standard neoprene compressible bulb type strip weatherstripping at the door head and jambs.
- P. Door Stops: Deltana SAHW325U10B solid brass Bumper Door Stops, wall mounted with matching screws set in 3-inch masonry expansion sleeves or approved equal.
-  Q. Door Numerals: Provide 4" wide x 8" high adhesive-applied vinyl signage with 6" high numerals for installation on interior and exterior of doors. Exterior Door Signage as manufactured by Avery Graphics, High Performance Calendared series 7000, Translucent with color, die-cut vinyl film with removable adhesive.
- R. Keying for cylinders shall match Halifax Elementary School Schlage Primus keying system. Contact Owner's Representative for final cylinder and keying requirements based on existing keying system to be continued for the school.

PART 3 – EXECUTION**3.01 EXAMINATION**

- A. Installer shall examine doors, frames and conditions under which the work is to be performed and notify the Architect in writing of any detrimental conditions to the proper completion of the installation. Do not proceed until unsatisfactory conditions have been corrected. Starting the Work means the installer has accepted substrates and conditions and the responsibility.

3.02 INSTALLATION

- A. Comply with manufacturer's installation instructions. Install door-closing devices away from public view where possible.
- B. Mount the finish hardware at the recommended location listed in manufacturer's document on installation, except where required by law.
- C. Install hold-open surface closers with through bolts and/or grommet nuts.
- D. Install thresholds for full width of frame rough opening, notched around jamb frames on exterior and interior, to cover exterior foundation and interior floor finishes at jambs and across door opening width. Trim cut and adhere carpet at carpeted areas to line of interior edge of thresholds.

3.03 ADJUSTING AND CLEANING

- A. At completion of installation, hardware shall be left clean and free from disfigurement. Make final adjustments to closing devices for proper engagement of door latching devices. Where hardware is found defective, repair or replace as instructed by the Architect.

3.04 PROTECTION

- A. Provide proper protection of hardware items until the Architect accepts the project as complete and the building is being turned over to the owner.

3.05 FIELD QUALITY CONTROL

- A. After final installation and adjustments are made, confirm that the hardware has been installed properly and that it is operating as intended.
- B. Contractor shall set up field inspection by door manufacturer to review and approve installation.

3.06 HARDWARE SETS:

- A. Hardware sets indicated represent complete hardware for each door opening. The quantity of each set is the responsibility of the hardware supplier.

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Hardware Sets

HW-1

- 2 Continuous Hinges
- 2 Exit Devices
- 2 Lever Handle Keyed Latchlocks
- 2 Closers
- 1 Keyed Removable Mullion
- 4 Kickplates (5" high)
- 2 Adjustable Door Bottoms
- 2 Sets of Weatherstripping
- 1 Set of Door Numeral Signage
- 2 Aluminum thresholds

HW-2

- 2 Continuous Hinges
- 2 Exit Devices
- 1 Electric Strike and Wire Transfer (to existing electronic door access system)
- 1 Lever Handle Keyed Latchlock
- 2 Closers
- 1 Keyed Electrified Removable Mullion
- 2 Kickplates (5" high)
- 2 Adjustable Door Bottoms
- 2 Sets of Weatherstripping
- 1 Set of Door Numeral Signage

* Tie into existing card reader or provide new card reader as shown on plans.

HW-3

- 1 Continuous Hinge
- 1 Lever Handle and Lockset
- 1 Closer
- 1 Kickplate (5" high)
- 1 Door Bottom Sweeps
- 1 Set of Weatherstripping
- 1 Aluminum threshold, by full width of wall opening
- 1 Set of Door Numeral Signage

HW-4

- 1 Continuous Hinge
- 1 Lever Handle and Lockset
- 1 Closer
- 1 Door Bottom Sweeps
- 1 Set of Weatherstripping
- 1 Eye Hole
- 1 Armor plate 36" wide x 30" high
- 1 Closer with Hold Open
- 1 Aluminum threshold, by full width of wall opening
- 1 Set of Door Numeral Signage

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HW-5

(Aluminum Stile and Rail door with vision lite)

- 1 Continuous Hinge
- 1 Exit Device
- 1 Lever Handle Keyed Latchlock
- 1 Closer
- 1 Kickplate (5" high)
- 1 Door Bottom Sweeps
- 1 Set of Weatherstripping
- 1 Threshold, by full width of wall opening
- 1 Sets of Door Numeral Signage

HW-6

- 1 Continuous Hinge
 - 1 Exit Device
 - 1 Lever Handle Keyed Latchlock
 - 1 Closer
 - 1 Kickplate
 - 1 Adjustable Door Bottom (existing granite threshold)
 - 1 Set of Weatherstripping
 - 1 Set of Door Numeral Signage
 - 1 Electrical Strike and Wire Transfer
- * Provide new card reader

HW-7

- 1 Continuous Hinge
- 1 Exit Device
- 1 Lever Handle Keyed Latchlock
- 1 Closer
- 1 Kickplate (5" high)
- 1 Door Bottom Sweep
- 1 Set of Weatherstripping
- 1 Threshold, by full width of wall opening
- 1 Set of Door Numeral Signage

HW-8

- 2 Continuous Hinges
 - 1 Electric Strike and Wire Transfer on RH door latch side
 - 2 Closers
 - 1 Keyed Electrified Removable Mullion
 - 2 Kickplates
 - 2 Adjustable Door Bottoms (existing granite threshold)
 - 2 Sets of Weatherstripping
 - 1 Set of Door Numeral Signage
 - 1 Lever Handle with Latchlock
- * Provide new card reader

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HW-9

- 1 Continuous Hinge
- 1 Lever Handle and Lockset
- 1 Closer
- 1 Kickplate
- 1 Adjustable Door Bottom
- 1 Set of Weatherstripping
- 1 Threshold, by full width of wall opening

HW-10

- 2 Continuous Hinges
- 2 Lever Handles
- 1 Auto Flush Bolts
- 2 Closers with Hold Open
- 2 Kickplates (5" high)
- 2 Adjustable Door Bottoms
- 2 Sets of Weatherstripping
- 1 Aluminum threshold (6'-0" wide)
- 1 Astragal
- 1 Coordinator

END OF SECTION

SECTION 08 8000**GLAZING****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within the Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included - The work of this section includes, but is not limited to, glass and glazing for the following:
1. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups.
 2. Glass and glazing for Aluminum Windows, factory glazed, thermally broken, insulating glass units.
 3. Muntin grids within insulating glass units where indicated.
 4. Insulating glass units with clear, obscure (frosted), and tinted glazing as indicated on Drawings.
- B. Related Work - Carefully examine all of the Contract Documents for requirements which may affect the work of this section. Other specifications sections which relate to the work of this section include, but are not limited to:
1. Section 01 4339 – Mockups
 2. Section 08 1000 – Doors and Frames
 3. Section 08 4113 – Aluminum-Framed Storefronts
 4. Section 08 5113 – Aluminum Windows

1.03 INTENT AND PERFORMANCE REQUIREMENTS

- A. A major intent of the work of this section is to be weathertight, to keep the building dry, and to withstand normal loads due to wind, temperature and normal impact without failure, breakage of glass, or other defects.
1. Temperature Range -Glass and glazing shall function correctly and normally throughout an ambient temperature range of 100°F above and below installation temperature.
 2. Safety Glass - Provide Building code complying safety glass for all doors, entrances, sidelights, storefront transoms, curtain-wall, windows and other locations required by code or authorities having jurisdiction. Provide tempered glass for all glazing used on this project.

3. Insulated Glass - Provide insulated glass for all exterior glass and glazing work, except as indicated. Insulated units shall be free from internal dirt, moisture, condensation, fogging, deterioration of protected internal glass coating (if any), and visual evidence of seal failure throughout the warranty period.

1.04 QUALITY OF ASSURANCE

- A. Source - For each type of glass and glazing material required for the work of this section, provide primary materials which are the products of one manufacturer. Provide secondary materials which are acceptable to the manufacturers of the primary materials. All glass of each type shall exactly match others, as approved by the Architect.
- B. In-Place Samples - Before beginning primary work of this section, provide typical in-place samples of each item and work at locations acceptable to Architect and obtain Architect's acceptance of visual qualities.
 1. Size of Sample - Provide full size typical samples of each type of glass used on the project, except clear non-fabricated glass.
 2. Intent of Sample - The intent of the in-place sample is to obtain approval of typical installation as early as possible so that problems, if any, can be corrected before the problem is repeated.
 3. Sample Disposition - Acceptable in-place samples may be incorporated into the finished work. Protect and maintain acceptable in-place samples throughout the work of this section to serve as criteria for acceptance of the work.
- C. Glass Thicknesses - Thicknesses indicated throughout the Contract Documents are minimum thicknesses only.
 1. Determine thicknesses and types of glass in compliance with ASTM E1300.
 2. Comply with the applicability restrictions of ASTM E1300.
 3. When ASTM E1300 does not apply, provide project specific engineering of glass thickness and type.
 4. Comply with recommendations of the glass manufacturer of each type of glass used.
 5. Equivalent Design Loads: The greater of the design and wind load specified in the Aluminum Window specification section and the loads required by the Building Code.
- D. Standards - Comply with applicable provisions of the following reference standards, except where reference standards conflict or appear to conflict with other reference standards or with requirements of the Contract Documents or with requirements of authorities having jurisdiction, the most restrictive requirement is required. Where the language in any of the reference standards is in the form of a recommendation or suggestion, such recommendations or suggestions are mandatory and required under this Contract.
 1. General Glass and Glazing - Flat Glass Marketing Association "Glazing Manual" and "Sealant Manual."
 2. Safety Glass Standards - Provide tempered glass which complies with ANSI Z97.1 and requirements of CPSC 16 CFR Part 1201 (150 foot-pounds impact force for lites up to 9 square feet and 400 foot-pounds impact force for larger lites). Permanently mark all safety glass with certification label of Safety Glass Certification Council.

3. Insulating Glass Standards - Provide insulating glass assemblies which are permanently marked with certification label of either the Insulating Glass Certification Council or Associated Laboratories, Inc. Provide units which comply with ASTM E2190, Class A requirements and SIGMA Certification Standards.

1.05 SUBMITTALS

- A. Product Data - Submit manufacturer's product data, installation instructions, use limitations and recommendation for each material used. Provide certifications stating that materials comply with requirements.
 1. Warranties - Submit example copies of manufacturer's warranties before ordering materials.
- B. Glass Thicknesses - Provide project specific determination and certification of glass thicknesses.
 1. Provide table or schedule showing: each type of glass, glass location, largest glass size for each type and location, and design load for each.
 2. Provide comprehensive, notarized certification that all glass types and thicknesses provided on the project are adequate to meet the required loads and the requirements of authorities having jurisdiction.
- C. Verification Samples - Submit at least two representative samples of each glass and glazing material that is to be exposed in the finished work, showing the full range of color and finish variations expected.
 1. Glass - Provide glass samples having minimum area of 144 square inches.
 2. Glazing - Provide samples of sealant and glazing materials.

1.06 DELIVERY STORAGE AND HANDLING

- A. Deliver materials and products in labeled, protective cartons and crates. Store and handle in strict compliance with manufacturer's instructions and recommendations and FGMA 19800 Handbook.
 1. Protect from all possible damage.
 2. Protect materials during storage from moisture, sunlight, excess heat, sparks and flame.
 3. Use clean gloves and tools when handling materials. Avoid contamination.
 4. Sequence deliveries to avoid delays, but minimize on-site storage.
- B. Coordinate installation with demolition work so that the installation of other work may be properly executed to fulfill the design requirements. Check shop drawings of other sections to ensure proper installation.

1.07 WARRANTIES

- A. Glass - Provide written warranties signed by manufacturer, agreeing to repair or replace work which exhibits defects in materials or damage due to improper workmanship for the following periods. "Defects" is defined to include, but is not limited to, abnormal aging or deterioration, failure of hermetic seal in insulating units, edge separation or delamination of laminated glass, peeling, cracking, crazing or other failure of coatings in coated glass, and failure to meet requirements of Contract Documents.
 - 1. Insulating Glass - 10 years from date of Substantial Completion.
- B. The Contractor shall provide a two year Workmanship Warranty for Glazing provided in window, door, sidelight, transom, curtain-wall and storefront systems, covering damage or defects to glazing from installation operations.

PART 2 – PRODUCTS**2.01 GLASS MATERIALS AND PRODUCTS**

- A. Exterior Glass for Aluminum Windows and Storefront: Exterior glass panes shall be clear. All glazing shall be insulated glass units designed by the Manufacturer to meet the requirements for compliance with the U-Value of the total glazed assembly. The Manufacturer shall provide documentation to support compliance. All insulated glass units shall be 1 inch thick units consisting of 2 panes of 1/4 inch thick tempered safety glass, a soft coat Low-E (SolarBan 60 or Cardinal 272) film on the #2 surface, 90% (percent) argon gas fill, and a low conductive spacer.
 - 1. Clear Tempered Glass - Provide fully tempered safety glass complying with ASTM C1048, Condition A, Type I, Class 1, Quality q3, kind FT.
 - 2. Glazing noted as Obscure Glazing shall be clear and located on the interior pane of insulated glass units. Obscure glazing pattern to be selected by the Owner from the Manufacturer's standard obscure glazing patterns, equivalent to a No. 62 obscure pattern selection.
 - 3. Provide 1/4" tempered glass safety glazing in all locations required by Massachusetts State Building Code conforming to the quality and strength requirements of ASTM C1048 (FT). Tempered glass shall also conform to ANSI Z97.1. Shop drawings shall indicate locations of tempered/safety glazing.
 - 4. Glazing noted as Tinted Glazing shall be Solar Bronze 60 or equivalent, with tinted pane located on either the exterior or interior pane of insulated glass units, coordinated with the location of Low-E surface (#2 or #3) and glazing manufacturer recommendations.

2.02 GLASS MATERIALS AND PRODUCTS

- A. General Glazing Requirements -Provide sealants and glazing materials which have performance characteristics suitable for applications intended. Ensure that glazing sealants are compatible with sealants used in insulated glass fabrication, with laminated glass interlayer, and with all surfaces to be in contact including setting blocks, side blocks, glazing gaskets and tapes.
 - 1. Colors - Provide colors of sealants and gaskets as selected by Architect from manufacturer's complete range of options.
 - 2. Muntin Grids within Insulating Glass Units (IGU): Provide painted 7/8" wide aluminum muntins in IGU to grid layout indicated on Drawings.

- B. Glazing Tape and Materials for Interior Work - Except as otherwise indicated provide PVC foam tape with self-adhering adhesive on one side. Provide tape width equal to bite on glass. Provide tape thickness as recommended by Tape manufacturer for joint size.
 - 1. Acceptable Product: Provide Norton "Norseal V-780" or approved equal.
 - 2. Interior Glazing Tape Color: Black, unless otherwise indicated or approved by Architect.
- C. Setting Blocks Shims and Jamb Blocks: Provide dense extruded neoprene or silicone with 85 ±5 Shore A Durometer hardness, minimum length of 4 inches, and minimum width equal to the glass thickness (total unit thickness for insulated glass) conforming to ASTM C864. Provide materials as recommended and approved by glass and sealant manufacturers. Provide products certified by their manufacturers to be "silicone compatible." Neoprene setting blocks are acceptable only if approved by the insulating glass fabricator.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Pre-Installation Examination Required - The Installer shall examine previous work, related work, and conditions under which this work is to be performed and notify Contractor in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Installer accepts substrates, previous work, and conditions.
- B. Manufacturer's Instruction - Strictly comply with manufacturer's instructions and recommendations, except where more restrictive requirements are specified in this section.
- C. Installation - Comply with FGMA "Glazing Manual" and Sealant Manual". Create water tight and air tight installations. Do not glaze when ambient temperature is below 40°F, unless specifically approved by Architect.
 - 1. Inspect all glass before installation and do not install defective glass. Check glass for proper size, squareness, edge bite, and clearances and make necessary corrections.
 - 2. Protect glass from all damage including edge damage. Use roller blocks when handling glass. Replace all damaged or weakened glass. Protect edges of insulating units from solvents, moisture, and damage.
 - 3. Thoroughly clean glazing channels and pockets immediately before glazing and keep them dry. Where sealants are to be adhered, remove coating which are not firmly bonded to substrates. Remove lacquer, if any, from framing.
 - 4. Center glass in opening. Provide minimum 1/2 inch glass bite and 1/8 inch minimum jamb edge clearances, unless other wise indicated.
 - 5. Glaze in a manner to permit simple replacement of glass without dismantling framing.
 - 6. Place glass with uniform pattern, draw, bow, and similar visual characteristics. For tempered glass, place roll wave distortion, if any, parallel to sill to minimize visual objects and conceal tong marks, if any, with framing and glazing materials.
 - 7. Install tapes and gaskets to eliminate dirt and moisture pockets. Miter and seal tapes and gaskets at corners and joints. Do not overlap tapes and gaskets at corners. Install tapes and gaskets to prevent pulling away corners. Do not stretch tapes and gaskets into place. Do not permit gaps at corners whether from stretching, shrinkage, or any other cause.

3.02 CLEANING, PROTECTION AND RESPONSIBILITY FOR BROKEN GLAZING

- A. Cleaning -Clean exposed surfaces using materials and methods recommended by glass manufacturers. Remove and replace work that cannot be successfully cleaned.
- B. Protection and Broken Glass - Provide temporary protection to ensure work is without damage or deterioration at time of final acceptance. Do not apply markers to surfaces of glass. Remove protection and reclean glass immediately before final acceptance. Remove and replace all broken, chipped, cracked, scratched or otherwise damaged glass from whatever cause.

END OF SECTION

SECTION 09 0009**PAINTING AND COATING TRADE CONTRACT REQUIREMENTS
(TRADE CONTRACT REQUIRED)****PART 1 – GENERAL****1.01 PUBLICLY BID TRADE CONTRACTOR**

- A. The work of this section is work of a Publicly Bid Trade Contractor and includes the following requirements:
 - 1. Specification requirements for the Trade Contract "Painting and Coating" include all of the following listed Specification Sections, in their entirety:
 - a. Section 09 0009 – Painting and Coating Trade Contract Requirements
 - b. Section 09 9000 – Painting and Coating
- B. Submit bid as directed by and in compliance with the Request for Bids, the Instructions to Bidders, and this Paragraph 1.01.
- C. Submit bid in the manner described in the Instructions to Bidders before the date and time indicated for submission of bids.
- D. The Trade Contractor shall perform the complete trade work, including the following listed sub-trade classes of work, with employees on its own payroll unless the Trade Contractor identifies on the bid form, the name of a sub-trade subcontractor that will perform each of the following classes of sub-trade work and the corresponding sub-trade subcontract sum.
 - 1. None Required.
- E. If the Trade Contractor intends to use sub-trade subcontractors to perform any portion of the trade work other than the customary sub-trade classes of work listed in Paragraph 1.01(E), above, the Trade Contractor shall list on the bid form the names of each such sub-trade subcontractor and each respective sub-trade subcontract sum unless: (a) the value of the sub-trade subcontract is less than Twenty-Five Thousand Dollars (\$25,000), or (b) the sub-trade subcontract is not subject to the provisions of M.G.L. c. 149, §§ 44A-J.
- F. The Bidding Requirements, Contract Forms, and Contract Conditions as listed in the Table of Contents, and applicable parts of Division 01 - General Requirements, shall be included in and made a part of this Section.

1.02 EXAMINATION OF SITE AND DOCUMENTS

- A. Bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which work will be carried out. The Awarding Authority (Owner) will not be responsible for errors, omissions and/or charges for extra work arising from Trade Contractor's failure to familiarize themselves with the Contract Documents or existing conditions. By submitting a bid, the Bidder agrees and warrants that he has had the opportunity to examine the site and the Contract Documents, that he is familiar with the conditions and requirements of both and where they require, in any part of the work a given result to be produced, that the Contract Documents are adequate and that he will produce the required results.
- B. Pre-Bid Conference: Bidders are strongly encouraged to attend the Pre-Bid conference; refer to Invitation to Bid for time and date.
- C. The work of this section is shown primarily in Drawings: AD-201, AD-202, AD-203, AD-204, A-101, A-201, A-202, A-203, A-204, A-210, A-502, A-511, A-512, A-513, and A-531.

1.03 QUALITY ASSURANCE

- A. Company specializing in work described in the above listed individual specification sections with minimum 5 years documented experience.

1.04 SEQUENCING

- A. Coordinate work of this Trade Contract with that of other trades, affecting or affected by this work, and cooperate with the other trades as is necessary to assure the steady progress of work.
- B. Do not order or deliver any materials until all submittals, required in the listed Specification Sections included as part of this Trade Contract, have been received and approved by the Architect.
- C. Before proceeding with installation work, inspect all project conditions and all work of other trades to assure that all such conditions and work are suitable to satisfactorily receive the work of this Section and notify the Architect in writing of any which are not. Do not proceed further until corrective work has been completed or waived.

1.05 INSTALLER'S WARRANTY

- A. In addition to other specified warranties, both in the Conditions of the Contract and in individual Sections of this Trade Contract, the Trade Contractor will be held responsible for the satisfactory performance of the all windows for a period of one year. The Trade Contractor shall provide a warranty which includes all products provided under this trade, including all paint materials, finishing systems, coatings and other related components, as they relate to specified installation integrity. All deficiencies in products provided under this Trade and related components which do not meet the specifications are to be corrected promptly at no expense to the Owner during the warranty period.

PART 2 – PRODUCTS**2.01 SCAFFOLDS AND STAGING**

- A. General: Painting and Coating Trade Contractor shall obtain required permits for, and provide scaffolds, staging, and other similar raised platforms, required to access their Work and all other Work requiring such equipment as specified in Section 01 5000 - Temporary Facilities and Controls and herein.
 - 1. Scaffolding and staging required pursuant to requirements of Section 01 5000 - Temporary Facilities and Controls shall be furnished, erected, maintained in a safe condition, and dismantled when no longer required, by this Trade Contractor.
 - 2. Painting and Coating Trade Contractor is responsible to provide, maintain and remove at dismantling, all tarpaulins and similar protective measures necessary to cover scaffolding for inclement weather conditions other than those required to be provided, maintained and removed by the Construction Manager pursuant to MGL (Refer to Section 01 5000 - Temporary Facilities and Controls and as additionally required for dust control).
 - 3. Furnishing portable ladders and mobile platforms of all required heights, which may be necessary to perform the work of this trade, are the responsibility this Trade Contractor.
 - 4. Enclose all exterior scaffolding outside of the construction fence with 8-foot high plywood enclosure at end of each work day to prohibit access to the scaffolding by unauthorized individuals.

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2.02 HOISTING MACHINERY AND EQUIPMENT

- A. All hoisting equipment, rigging equipment, crane services and lift machinery required for the work by this Trade Contractor shall be furnished, installed, operated and maintained in safe conditions by this Trade Contractor, as referenced under Section 01 5000 - Temporary Facilities and Controls.

PART 3 – EXECUTION

(Not Used)

END OF SECTION

SECTION 09 9000**PAINTING AND COATING
(TRADE CONTRACT REQUIRED AS PART OF SECTION 09 0009)****PART 1 – GENERAL****1.01 GENERAL REQUIREMENTS**

- A. Trade Contractor Requirements: As provided under Section 09 0009 – Painting Trade Contract Requirements and supplemented under the Bidding Requirements, Contract Forms, and Conditions of the Contract, and applicable parts of Division 01 – General Requirements.
 - 1. Work of this Trade Contract includes all individual specification sections listed in Section 09 0009.
 - 2. The work of this section is shown primarily in Drawings: AD-201, AD-202, AD-203, AD-204, A-101, A-201, A-202, A-203, A-204, A-210, A-502, A-511, A-512, A-513, and A-531.

1.02 DESCRIPTION OF WORK

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes the following:
 - 1. Provide mockup of two complete window systems and new siding system as per specification Section 01 4339 – Mockups
 - 2. Surface preparation for all painting.
 - 3. Field painting of existing stucco.
 - 4. Touch up Painting of surfaces disturbed by the work.
 - 5. Field painting of existing wood trim work.
 - 6. Paint existing unit ventilator grills.
- B. Related Work:
 - 1. Section 014339 – Mockups.
 - 2. Section 06 2023 – Finish Carpentry
 - 3. Section 06 6600 – Cellular PVC Fabrications
 - 4. Section 07 4646 – Fiber Cement Siding

1.03 DEFINITIONS AND EXTENT

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 - 1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 - 2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.

3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
 4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.
- B. This Section includes surface preparation and field painting of exposed exterior items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- C. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Designer will select from standard colors and finishes available.

1.04 JOB CONDITIONS

- A. Provide all necessary scaffolding, staging planks, etc., required for the execution of this work.
- B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.
- C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
- D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.05 SUBMITTALS

- A. Product Data: For each paint system indicated.
1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
- B. Color Selectors: complete line of paint color selectors. Owner will select colors.
- C. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
- D. Qualification Data: For Applicator.

1.06 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

- B. Mockups: Provide a benchmark finish sample for each type of coating and substrate required. Duplicate finish of approved sample Submittals.
 - 1. Final approval of colors will be from benchmark samples.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
- C. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, manufacturers and products listed in this Section or approved equal.
- B. Acceptable manufacturers:
 - 1. Sherwin-Williams Company.
 - 2. Benjamin Moore & Co.
 - 3. Behr Process Corporation.

2.02 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

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- C. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.
- D. Paint colors to match existing colors.

2.03 ACCESSORY MATERIALS

- A. Stucco Cracks Patching Material: Exterior latex filler for cracks and small holes. Portland cement based stucco.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
 - 1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 - 2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers. substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
 - 1. Notify Designer about anticipated problems when using the materials specified over substrates primed by others.

3.02 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
 - 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and re-prime.
 - 2. Provide new self-etching spray primers over existing anodized or painted aluminum window framing, mullions, sills and spandrel panels designated to be painted.

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3. Ferrous Metals: Clean un-galvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
 4. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3 or SSPC-SP 10/NACE No. 2.
 5. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 6. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.03 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications
 2. Omit primer over metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.

3. Spray Equipment: Use HVLP, high-velocity low-pressure airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- F. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- G. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.04 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.05 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Designer
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
- C. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.06 PAINT SCHEDULE

- A. Schedule: Provide products and number of coats specified. Use of manufacturer's proprietary product names to designate colors, materials, generic class, standard of quality and performance criteria and is not intended to imply that products named are required to be used to the exclusion of equivalent performing products of other manufacturers.



- B. Exterior Paint:
 1. Wood:
 - a. One Coat Sherwin-Williams Exterior Latex primer B42W8041
 - b. Two coats Sherwin Williams Exterior Latex satin A82 series.
 2. Stucco:
 - a. One Coat Sherwin-Williams Exterior Latex primer B42W8041

- b. Two coats Sherwin Williams Exterior Latex satin A82 series.



C. Interior Paint:

- 1. INTERIOR DRYWALL
 - a. Primer: Moore's Pristine Eco Spec Interior Latex Primer Sealer 231
 - b. Finish Coat 1: Moore's Pristine Eco Spec Interior Latex Semi-Gloss Enamel 224
 - c. Finish Coat 2: Moore's Pristine Eco Spec Interior Latex Semi-Gloss Enamel 224
- 2. INTERIOR WOOD - PAINTED
 - a. Primer: Moore's Pristine Eco Spec Interior Latex Primer Sealer 231
 - b. Finish Coat 1: Moore's Pristine Eco Spec Interior Latex Eggshell Enamel 223
 - c. Finish Coat 2: Moore's Pristine Eco Spec Interior Latex Eggshell Enamel 223
- 3. EXTERIOR FERROUS METAL
 - a. Primer: Moore's Corotech, 100% Solid Epoxy Pre-Primer V155
 - b. Finish Coat 1: Moore's Corotech Aliphatic Acrylic Urethane Gloss, V500
 - c. Finish Coat 2: Moore's Corotech Aliphatic Acrylic Urethane Gloss, V500

END OF SECTION

SECTION 12 2123**WINDOW SHADES****PART 1 – GENERAL****1.01 GENERAL PROVISIONS**

- A. Attention is directed to the Bidding and Contract Requirements, and all sections within the Division 01 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Manual roll-up fabric room-darkening blackout window shades with internal hem bars, chain-clutch operators and fascia to cover all window openings indicated on the Drawings.
 - 2. Accessories as needed for a complete installation including, but not limited to:
 - a. Mounting hardware and fasteners
 - b. 3" Aluminum Fascia and Finished Ends

1.03 RELATED REQUIREMENTS

- A. The Conditions of the Contract and General Requirements of the Project Manual apply to this Contractor, material suppliers, and all other persons furnishing labor and materials under this Section.
 - 1. Section 06 1000 – Rough Carpentry
 - 2. Section 08 4113 – Aluminum-Framed Storefronts
 - 3. Section 08 5113 – Aluminum Windows

1.04 REFERENCE STANDARDS

- A. ANSI. American National Standards Institute; www.ansi.org
 - 1. ANSI / WCMA A100.1 - 2012 American National Standard for Safety of Corded Window Covering Products
- B. ASTM. ASTM International; www.astm.org
 - 1. A228 - Standard Specification for Steel Wire, Music Spring Quality
 - 2. A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar
 - 3. A1008 - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
 - 4. A 1010 - Standard Specification for Higher-Strength Martensitic Stainless Steel Plate, Sheet and Strip

5. D 5034 - Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)
 6. D 5035 - Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)
 7. G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
- C. ATCC. American Type Culture Collection; www.atcc.org
- D. Greenguard Low Emitting Interior Products
- E. ETL. ETL Testing Laboratories, an Intertek Testing Services (ITS) Company;
<http://www.intertek.com/marks/etl/>
- F. NFPA. National Fire Protection Association; www.nfpa.org.
1. NFPA 701 - Fire Tests for Flame-Resistant Textiles and Films
- G. UL. Underwriters Laboratories Inc.; www.ul.org
1. UL (ECMD) - Electrical Construction Materials Directory

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation Meeting required per Section 01 3119.
- B. Scheduling per Section 01 3119, and as follows:
1. Provide job lifts and access during construction up to Final Completion.

1.06 SUBMITTALS

- A. Submittal Procedures: Section 01 3300.
- B. Product Data: Submit manufacturer's printed product literature including styles, material descriptions, dimensions of individual components, profiles, features, finishes, operating instructions, use limitations, and the following:
1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Fabric solar and optical performance.
- C. Shop Drawings: Submit indicating window rough openings, head-frame section, details, shade type, location, dimensions, clearance requirements and attachment method.
1. Field Measurements: Verify actual measurements for openings prior to fabrication, and after finish work is complete including window, window frame, trim installation.
 - a. Coordinate field measuring just prior to finish painting.
 - b. Indicate verified field measurements on Shop Drawings or Schedule.

2. Window Shade Schedule: Submit shade schedule coordinated with window numbers and window types, containing field verified window interior dimensions, shade type, quantities, fabric, hardware and color.
- D. Window Treatment Schedule: For all shades use room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.
- E. Verification Samples: Submit three (3), minimum 3 x 5 inch (76mm x 127mm), samples of fabrics and metal finishes for initial and final selections by Architect. Indicate on shade-cloth as to interior and exterior faces.
 1. Submit finish choices for each system component exposed to view including, but not limited to hand controls and retainer hardware.
 2. Provide proposed shade components, unassembled, demonstrating compliance with specified requirements.
- F. Certificates: Submit a certificate with manufacturer's signature certifying that each product and/or system meets the requirements of the performance characteristics, physical criteria, and applicable standards specified.
 1. Lead-free fabric products
- G. Manufacturers' Instructions: Indicate special procedures for preparation, installation instructions, cleaning and maintenance.
- H. Qualification Statements: Submit a letter, on printed letterhead and signed by an officer of the firm, for each listed quality assurance qualification listed, attesting to meeting each requirement called out.

1.07 CLOSEOUT SUBMITTALS

- A. Submittal Procedures: Section 01 3300.
 1. Warranty Documentation: Executed warranties.
 2. Operation and Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

1.08 MAINTENANCE MATERIAL SUBMITTALS

- A. Spare Parts: Submit no less than one percent additional clutches, brackets, fascias and other furnished items, plus two percent additional for each fabric band type on prepared tubes, with each item wrapped and labeled.

1.09 QUALITY ASSURANCE

- A. Regulatory Agency Approvals:
 1. Fire-Test-Response Characteristics: Passes NFPA 701 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.
 2. Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC 9644, ATCC9645.

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- B. Manufacturer / Fabricator Qualifications: Company with a minimum of twenty (20) years' experience specializing in manufacturing Products specified in this Section.
- C. Installer Qualifications: Installer trained and certified by the manufacturer with a minimum of ten (10) years' experience specializing in work of the type required by this Section.
- D. Single Source Responsibility: Furnish roller shade system materials from one manufacturer for entire Project, unless otherwise acceptable to Architect.
- E. Field Samples: Provide field samples of each different roller shade fabric selected by the Architect to demonstrate aesthetic effects of materials in situ, assisting in making final selections prior to fabrication.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions and recommendations, Section 016000, and as follows:
 - 1. Delivery and Acceptance Requirements:
 - a. Do not deliver window shades until building is enclosed and construction within spaces where shades will be installed is substantially complete.
 - b. Deliver products in original, unopened, clean, dry and undamaged containers with labels intact.
 - c. Label containers and shades according to room designations indicated on Drawings, Window Shade Schedule, and approved Shop Drawings. Mark with manufacturer and product name, fire-test-response characteristics, and location of installation.
 - 2. Storage and Handling Requirements:
 - a. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local AHJ.

1.11 FIELD CONDITIONS

- A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.12 WARRANTY

- A. Manufacturer / Special Warranty: Prepare and submit in accordance with Section 017000 - Closeout Submittals.
 - 1. Material Warranties. Provide manufacturer's material warranty as follows:
 - a. Hardware and Shade Fabric: Provide twenty-five (25) year limited warranty.
 - b. Roller Shade Components: Manufacturer's limited lifetime warranty against defects in materials and workmanship.
 - 2. Installation Warranty: Provide two (2) year manufacturer installation warranty from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer List. Subject to compliance with requirements, provide Window Shade system by one of the following:
 - 1. Hunter Douglas Architectural
 - 2. RollEase, Inc.
 - 3. MechoShade Systems, Inc.
 - 4. Gordon's Window Décor.
 - 5. Substitution Limitations: See Section 01 6000 – Product Requirements.
- B. Basis of Design: Hunter Douglas “Manual Roller Shades”
- C. Shade Fabric: Shade Fabric shall be inherently anti-static, flame retardant, fade and stain resistant, blackout fabrics providing 0% openness factor. Fabric weight 12.7 oz/sq.yd. containing fiberglass, PVC, polyester, acrylic, vinyl laminates, cotton, & vinyl coatings. Finish selected by architect from manufacturer's available contract colors, to match other existing shade fabric in the building.
 - 1. Fabric shall be woven, opaque, extruded; two-sided colored (white backing with face color by selection) acrylic-coated polyester yarn consisting of 100% polyester core yarns.
 - 2. The fabric shall be tensioned in the finishing range prior to heat setting to keep the warp ends straight, minimize or eliminate weave distortion, and keep the fabric flat. The fabric shall be finished with heat and pressure and be dimensionally stable.
 - 3. The fabric width shall not be narrower than each shade unit.
 - 4. The material shall hang flat without buckling or distortion. The edge, when trimmed, shall hang straight without raveling. The unguided shade-band shall roll true and straight, without shifting sideways more than $\pm 1/8$ in. in either direction due to warp distortion or weave design.
 - 5. Fabric shall be certified by an Independent Laboratory to pass the Large or Small Scale Vertical Burn Requirements of the NFPA, and per Massachusetts State Building Code.
 - 6. The fabric shall be woven of the same yarns, have similar weaves, and be color matched by dye lot.
 - 7. Color: To be selected from manufacturer's full range of standard and non-standard colors.

2.02 DESCRIPTION

- A. Regulatory Requirements:
 - 1. Flame Retardance: Passes NFPA 701 Small Scale vertical burn. Materials installed must be identical in composition and comparable structure to those tested.
 - 2. Shadecloth Total Lead Content per 16 CFR 1303: Below limits.

2.03 PERFORMANCE / DESIGN CRITERIA

- A. Performance Requirements:

1. Stretch Certification: Shadecloth materials shall be tested in accordance with UFS (Woven Upholstery Fabric Standards) 1979-12 at 27 pounds of no greater than 2.0 percent on the warp and 2.2 percent on the fill.
 2. UV Stability Xenotest on each shadecloth color shall be a minimum "6" passing rating on a grade scale of 1-8.
 3. Shadecloth Dimensional Stability tolerance shall be under 0.5 percent to ensure long-term stability.
 4. Shadecloth Anti-Microbial Characteristics Per:
 - a. ASTM G21: 'No Growth' results for fungi per ATCC 9642, ATCC 9644, and ATCC 9645.
 - b. ASTM G22: Minimum 5mm (0.197 inches) 'No Growth Contact Area' results for ATCC6538 (Staphylococcus aureus) and ATCC13388 (Pseudomonas aeruginosa).
- B. Design Criteria:
1. General System Description: Roller shade systems shall operate with a spring wrap mechanism, capable of accommodating a wide variety of shade sizes and fabric types. Manually operated system shall be chain operated with spring assist when required to reduce pull force to lift heavy or large shades.
 - a. Provide a no sew, no glue, no tape, no weld roller shade that uses a spline system to attach the fabric to the tube with a fabric wrapped bottom-bar.
 - b. Tubular head-rail made from aluminum alloy 6063-T5.
 - c. Tubular bottom bar made from aluminum alloy 6063-T5 or plastic.
 - d. Components: Made with UV stabilized plastics.
 - e. Brackets: Color coordinated with safety shade fabric locking feature.
 - f. Ceiling or wall mount fascia bracket 3 1/2" maximum width.

2.04 SHADE BAND

- A. Shade Bands: Construction of shade band includes the fabric, the hem weight, hem-pocket, shade roller tube, and the attachment of the shade to the roller tube.
1. Hem Pockets and Hem Weights: Fabric hem pocket with RF-welded seams and concealed hem weights. Wood hem weights shall be of appropriate size and weight for shade band. Hem weight shall be continuous inside hem pocket. Hem pocket construction and hem weights shall be similar, for all shades within one room.
 2. Shade Band and Shade Roller Attachment:
 - a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection. Roller tubes less than 1.55 inch (39.37 mm) in diameter for manual shades are not acceptable.
 - b. Provide for positive mechanical engagement with drive / brake mechanism.
 - c. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" spline mounting, without having to remove shade roller from shade brackets.
 - d. Mounting spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
 - e. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets are not acceptable.

2.05 COMPONENTS

- A. Access and Material Requirements:

1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end supports to be removed.
 2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube or operating support brackets.
- B. Manual Operated Chain Drive Hardware and Brackets:
1. Provide for universal, regular drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets.
 2. Provide hardware capable for installation of both regular and/or reverse roll, and for ceiling or wall mount, which shall be installed with exposed fastening devices.
 3. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connectors for drive mechanism connection to shade roller tube are not acceptable
 4. Provide shade hardware constructed of minimum 1/8 inch (3.18 mm) thick plated steel or heavier as required to support 150 percent of the full weight of each shade.
 5. Provide adjustment-free continuous qualified #10 stainless steel ball chain ((90-lb. test)) and pulley clutch operating system allows precise control and ensures a uniform look. Clutch will develop no more than ½ pound drag for ease of lifting. Glass reinforced polyester thermopolymer (PBT) plastic components conform to military specification MIL M-24519 and designed for smooth, trouble-free operation.
- C. Roller: Circular-shaped painted extruded aluminum tubes with thicker wall & ribs provide additional strength while locking into place the clutch & end plug. 3" outside diameter extruded tube to have a .090 wall thickness. 2" outside diameter extruded tube to have a .072" wall thickness (1 ½" & 1 1/8" tubes have .055" wall thickness) providing strength & durability.
- D. End Plug: Heat stabilized fiber reinforced plastic outside sleeve and center shaft provide bearing surfaces on which the roller rides ensuring smooth, wear resistant operation.
- E. Bottom Rod: Wood strip weight in a hem Bar, or Flat Bottom Bar for fabrics that are not Seamable. Bottom rod is for tracking adjustments and provides uniform look.
- F. Mounting Hardware: Manufacturer's standard .07" nickel-plated, C1008/1010 cold rolled steel universal brackets including end plug bracket with lock down retainer device.
- G. Provide 3" high fascia with bottom and end finished closure on all shades, constructed of painted steel or aluminum, white.

2.06 MANUAL SHADE FABRICATION

- A. General: Fabricate units according to submitted and approved Shop Drawings, and as follows:
1. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shade-bands.
 - a. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shade-cloth within specified standards.
 - b. Battens shall be roll-formed stainless steel or tempered steel, as required.

2.07 FINISHES

- A. Metal Finishes: Provide manufacturer's standard finish.
 - 1. AAMA 2603, Acrylic Coating (Baked Enamel)
 - a. Color: As selected by Architect from manufacturers' standard and custom range.
- B. Field Finishing: Field Touch-up: Provide matching touch-up paint for minor touch-up of small scratches, abrasions, and fasteners.
 - 1. Paint shall be applied with an artist brush and never spray applied.

2.08 SOURCE CONTROL

- A. Tests and Inspections:
 - 1. Manufacturer shall perform batch-to-batch random ten (10) year cycle tests on roller shade system to confirm complete compliance with manufacturer's operating matrix and to ensure longevity of use in application.

PART 3 – EXECUTION**3.01 EXAMINATION**

- A. Examination and Acceptance of Conditions per Section 01 6000 – Product Requirements, and as follows:
 - 1. Carefully examine installation areas with Installer/Applicator present, for compliance with requirements affecting Work performance.
 - a. Verify that field measurements, substrates, structural support, utility connections, tolerances, levelness, plumbness, humidity, moisture content level, cleanliness and other conditions are as required by the manufacturer, and ready to receive Work.

3.02 PREPARATION

- A. Surface Preparation: Refer to manufacturer's instructions and recommendations for preparation of substrates.
 - 1. Coordinate requirements for structural support to ensure proper shade system installation.
 - 2. Where applicable coordinate interface and installation of window shades with provisions of HVAC system, and window and door systems.
 - 3. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions. Clean surfaces thoroughly prior to installation.

3.03 INSTALLATION

- A. General: Install Window Shades with mounting brackets onto existing wood head trim where shown on the Drawings, approved submittals including Shop Drawings and the Window Treatment Schedule, manufacturer's instructions, and as follows:
 - 1. Window treatment shall be installed plumb, square, level and within allowable tolerances.
 - a. Maximum variation of gap at window opening perimeter: 1/4 inch, per 8 feet +/- 1/8 inch of shade height.

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- b. Maximum offset from level: 1/16 inch per 5 feet of shade width.
 - c. Closest distance to glass: 2 inches (50 mm) to interior face of glass
 - d. Allow proper clearances for window hardware and operation.
2. Adjust and balance each unit drive and brake mechanism for smooth operation that is easy, safe, and free from binding or malfunction throughout entire operational range.
 - a. Adjust shade and shadecloth to hang flat without buckling or distortion.
 - b. Replace each unit or component that does not hang properly or operate smoothly.
3. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
4. Engage Installer to train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.

3.04 FIELD QUALITY CONTROL

- A. Non-Conforming Work per General and Supplementary Conditions, and as follows: Remove, Repair and Reinstall or Restore in Place damaged items prior to inspection for Substantial Completion.
 1. Finish touch-up damaged surface finishes.
 2. Replace damaged materials and components with new if repair not acceptable to Architect.

3.05 CLEANING AND PROTECTION

- A. Comply with requirements as follows:
 1. Clean up and legally dispose of debris resulting from shade installation.
- B. Provide initial maintenance for shade assemblies, and protect from damage during construction operations as recommended by manufacturer.
- C. Protect installed work from damage from construction operations until date of Final Completion or Owner occupancy, whichever occurs first.
 1. Remove temporary coverings and protection of adjacent work areas.
 2. Protection: Remove fabricators and other installed protection immediately prior to Substantial Completion inspection, unless manufacturer requires otherwise.

3.06 CLOSEOUT ACTIVITIES

- A. Demonstration: Demonstrate operation of each shade system, proper adjustment, programming, usage, cleaning and maintenance procedures to Owner's designated representatives.

END OF SECTION