PROJECT MANUAL

Roof Replacement

Halifax Elementary School
464 Plymouth Street
Halifax, MA 02338

MSBA Accelerated Repair Program
Project # 201601180005

Construction Documents
June 21, 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 1614.02

1 Indicates Section was modified by Addendum # 1

2 Indicates Section was modified by Addendum # 2

3 Indicates Section was modified by Addendum # 3

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.

NOTE: Triangles indicate that items in the section have been modified by Addendum.

DOCUMENT 00 0110

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INVITATION TO BID

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

Roof Replacement
Halifax Elementary School
464 Plymouth Street, Halifax, MA 02338

Nature and scope of work: replacement of approximately 71,900 sq.ft. of roofing. The project has an estimated construction cost of $1.9 Million.

SUB-BIDS: Filed Sub-Bidders must be certified by Division of Capital Asset Management and Maintenance (DCAMM) in the following sub-trade categories:

HVAC	*(Specification Section – 23 0001)*
Electrical	*(Specification Section – 26 0001)*

Sealed bids for Filed Sub-Bids are invited and will be received up until **11:00 AM** (local legal time) **Wednesday, June 7, 2017** by the Awarding Authority and at that time will be publicly opened and read aloud shortly thereafter in the Selectmen's Meeting Room, Town Hall, 499 Plymouth Street, Halifax, MA 02338. Late bids will be rejected.

Sub-Bids shall be sent to the attention of: Charlie Seelig, Town Administrator
Town of Halifax
499 Plymouth Street, Halifax, MA 02338

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 *Roofing*.

Sealed General Bids will be received up until **4:00 PM** (local legal time) on **Wednesday, June 14, 2017** by the Awarding Authority and at that time will be publicly opened and read aloud shortly thereafter in Selectmen's Meeting Room, Town Hall, 499 Plymouth Street, Halifax, MA. Late bids will be rejected.

General Bids shall be sent to the attention of: Charlie Seelig, Town Administrator
Town of Halifax
499 Plymouth Street, Halifax, MA 02338

BID SECURITY: All Bids must be sealed 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, May 24, 2017** There is a plan deposit of $50.00 per set (maximum of 2 sets) payable to BidDocs ONLINE Inc.

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 mailing costs.

General and Sub-Filed 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 80 00 - 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, May 30, 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:

Jon Lemieux, The Vertex Companies, jlemieux@vertexeng.com

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

Bidding procedures shall be in accordance with M.G.L. c. 149, SS44A-44J, as most recently amended, and all other applicable laws.

Bids are subject to minimum wage rates as required by MGL c. 149, SS 26 to 27D. 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 and may reject any sub-bid if the Awarding Authority (Town of Halifax) determines that such sub-bid does not represent the bid of a person competent to perform the work as specified or if fewer than three sub-bids are received for a sub-trade.

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.

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

1. Receipt and Opening of Bids

The Town of Halifax, Massachusetts, herein called the Owner, acting by and through its Purchasing Department, will receive sealed Bids for the Halifax Elementary School Roof Replacement Project, 464 Plymouth Street, Halifax, MA 02338

All bids for this Project are subject to the provisions of Massachusetts General Laws, M.G.L., c.30, § 39F - 39R, as amended and c.149, § 44A through 44L inclusive and c.149, §26 through 27D inclusive and C.193 of the Acts of 2004, the provisions of which are incorporated herein by reference and shall control in the event of any conflict among these provisions and the provisions of the bid documents. It is the responsibility of every bidder and sub-bidder to know the applicable provisions.

General bids and Sub-bids are being solicited for this project. All bids shall be addressed as follows: Charlie Seelig, Town Administrator, 499 Plymouth Street, Halifax, MA 02338. All general bidders and all filed sub-bidders shall provide with their bids a Certificate of Eligibility and Update Statement, as required by G.L.c.149.§§44D.

General Bidders must be certified by the Division of Capital Asset Management and Maintenance (DCAMM) as a prime contractor in the category of *Roofing*.

General bids must be endorsed "Halifax Elementary School Roof Replacement Project", and must be received at the address listed above no later than **4:00 PM** prevailing time, on **Wednesday, June 14, 2017.**

Filed Sub-Bidders must be certified by Division of Capital Asset Management and Maintenance (DCAMM) in the sub-trades listed below.

Sub-bids must be endorsed "Sub-bid for Halifax Elementary School Roof Replacement Project: Filed Sub-bid for [Name of Sub-trade]", and must be received at the address listed above no later than **11:00 AM** prevailing time, on **Wednesday June 7, 2017**. Sub-bidders that submit bids for more than one filed sub-bid class of work must submit the bid for each class of work in a separate envelope.

The sub-trades for which sub-bids are solicited are as follows:

HVAC	*(Specification Section – 23 0001)*
Electrical	*(Specification Section – 26 0001)*

Sub-bids: Every sub-bid shall be for the complete work of the sub-trade as specified, and must be submitted on the Form of Sub-bid furnished by the Awarding Authority and as prescribed by G.L.c.149 § 44F, a sample of which is included in these Contract Documents.

1. Every such sub-bid shall be accompanied by a bid deposit in the amount of 5% of the Bid.
2. Every sub-bidder duly filing a sub-bid with the Awarding Authority shall be bound thereby to every general bidder not excluded therein from the use thereof; and any variance from such sub-bid communicated to a general bidder shall be of no effect.
3. Every sub-bid for a sub-trade designated in Item 2 of the FORM FOR GENERAL BID shall be publicly opened and read by the Awarding Authority at the time and place specified in the advertised Invitation to Bid. Not later than the second day, Saturdays, Sundays and legal holidays excluded, prior to the

advertised General Bid Deadline, the Awarding Authority shall mail to every person on record as having taken a set of Contract Documents, a list of sub-bidders. The list shall be arranged by sub-trades and listing for each sub-trade the name, address and sub-bid price of every sub-bidder who has submitting a sub-bid which has not been rejected by the Awarding Authority.

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 FORM FOR GENERAL BID or if a rejection of all sub-bids for such a sub-trade occurs, 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 FORM FOR GENERAL BID 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.

Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified will not be considered. The bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids.

2. Location and Work to be Done:

The Work consists of the Halifax Elementary School Roof Replacement Project, 464 Plymouth Street, Halifax, MA 02338, as more specifically described in the attached contract specifications.

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.

3. Preparation of Bid

Each bid must be submitted on the prescribed form. All blank spaces for bid prices must filled in, in ink or typewritten, in both words and figures. If the “Form of Bid” has more blank spaces for Alternates are listed in the Schedule of Alternates in Division 01 Section “Alternates”, bidders are to write “Not Applicable” in the blank spaces for which a bid price is not applicable.

Each bid shall show the full business name and address of the bidder and must be signed by a person authorized to do so on the bid form issued by the Town.

Each bid 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.

Also, each bid is required to provide certification of the Clerk's Certificate form (Certification of Corporate Authority to Sign Contract), Conflict of Interest Certification form, and the W-9 Request for Taxpayer Identification Number form. These forms can be found in Section 00 8000 – Other Forms.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, address, and endorsed with the name of the project as specified in Receipt and Opening of Bids, above. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in Receipt and Opening of Bids, above.

4. Bid Opening Procedure

The following list of requirements shall apply to each bid. Bids not meeting all the requirements for timeliness and security will be rejected without opening; bids not meeting signature and addenda requirements will be rejected prior to checking of bid amounts.

Bids shall be filed at the place and before the time specified in Receipt and Opening of Bids, above.

If, for any reason, Halifax Town Hall is closed on the day of this bid opening, the opening shall be postponed until the next normal business day at the stated time. Submittals will be accepted until that day at the stated time.

Properly executed bid security shall be placed in a sealed envelope and shall be attached to the outside of the envelope containing the bid.

Bid signatures will be checked.

BidDocs Online will email notification of addenda posting to all planholders registered for the project on the BidDocs Online website. All bidders shall include with their bids the written acknowledgment form provided in the FORM OF GENERAL BID or the FORM OF SUB-BID, as applicable.

The total dollar amount of each bid will be read, and the three apparent lowest bids will be selected for further consideration. These three apparent low bids will be read aloud for the benefit of the other bidders and the bid opening procedure will be closed. All those present at the bid opening may examine all bids after the bid opening and after the reading of the three apparent low bids.

5. Bid Modification

Any bidder may withdraw or modify his bid in a signed writing at any time prior to the scheduled closing time for receipt of bids, provided such writing is received by the Owner prior to the bid closing time. Written bid withdrawals and modifications must be sealed and submitted in the same manner as the original bid. Bidders may not withdraw their bid after the bid opening except as may otherwise by expressly provided by law.

6. Ability and Experience of Bidder

No award will be made to any bidder who cannot satisfy the Owner 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 Owner's decision or judgment on these matters will be final, conclusive, and binding.

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

7. Conditions of Work

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.

8. Addenda and Interpretations

No interpretation of the meaning of the drawings, specifications or other pre-bid documents will be made to any bidder orally. All information given to bidders other than by means of the plans, specifications, or by addenda, as described below, is given informally and shall not be used as the basis of a claim against the Owner.

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, Jon Lemieux, and Charlie Seelig. Send each request to Scott Bancroft at Habeeb & Associates Architects, (email) sbancroft@habeebarch.com, Jon Lemieux, The Vertex Companies, (email) jlemieux@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." Requests for interpretation related to the submission of General bids must be received no later than **noon on June 7, 2017**. Requests for interpretation related to the submission of Filed Sub-bids must be received no later than **noon on May 31, 2017**. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications. All plan-holders registered on BidDocs Online's's web-site will receive email notification of addenda, not later than two days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

9. Security for Faithful Performance

Simultaneously with his delivery of the executed Contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this contract, in the form of a 100% Performance Bond and for the payment of all persons performing labor and materials, in the form of a 100% Labor and Material Payment Bond, under this contract as specified in AIA-A201, General Conditions of the Contract for Construction included herein. 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.

10. Power of Attorney

Attorneys-in-fact who sign Contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

11. Laws and Regulations

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.

12. Liquidated Damages for Failure to Enter into Contract

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 Owner, 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.

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.

13. Obligation of Bidder

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect of his bid.

14. Information Not Guaranteed

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 Owner 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 Owner 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.

15. Bid Security

As stated in G.L.c.149. § 44B, each bid must be accompanied by a certified check, a bid bond, or a cashier's check, payable to the Town of Halifax, MA, in the amount stated the INVITATION TO BID. Such checks will be returned to all except the three lowest responsible and eligible bidders within five days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids, and the remaining checks will be returned promptly after the Owner and the accepted bidder have executed the Contract, or if no notice of intent to award has been presented to the selected contractor within 30 days, Saturdays, Sundays and holidays excluded, after the date of the opening of bids, upon demand of the bidder at any time thereafter.

16. Right to Reject Bid

The Owner reserves the right to waive any informalities in the bids, and to reject any and all bids, should the Owner deem it to be in the public interest to do so, and for any other reason as may be allowed by law.

The Owner may also reject bids which in its sole judgment are either incomplete, conditional, obscure or not responsive or which contain additions not called for, erasures not properly initialed, alterations, or similar irregularities, or the Owner may waive such omissions, conditions or irregularities. Erasures or other changes to the Bid Form must be noted and explained over the signature of the Bidder.

17. Time for Completion

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.

18. Comparison of Bids

Bids will be compared on the basis of the quantities and unit and lump sum prices set forth in the bid forms.

In the event that there is a discrepancy in the FORM OF GENERAL BID between the lump sum or unit prices written in words and figures, the prices written in words will govern.

19. Award of Contract

The Contract will be awarded to "the lowest responsible and eligible bidder" pursuant to General Laws Chapter 149, Section 44A(2), as amended. Such a bidder shall possess the skill, ability and integrity necessary for the faithful performance of the work, shall be able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, in the work, and shall otherwise comply with all applicable provisions of law, including satisfaction of the OSHA requirements as stated in the Form of General Bid included herein and prescribed by G.L.c.149.§ 44E.

Notice of Award and the Actual Award of this contract will be done solely by the Purchasing Agent. A contract for the supply of goods or services to the Town awarded by someone other than the Purchasing Agent, either verbally or in writing, will not be honored.

The Awarding Authority reserves the right to waive any informalities in bids, or to reject any and all bids if it be in the public interest to do so.

20. Statutes Regulating Competitive Bidding

Any bid which does not comply with the provisions of Massachusetts General Laws, need not be accepted and the Owner may reject every such bid.

21. Certificate of Eligibility and Update Statement

In accordance with G.L. c.149, § 44D, every general bid and every sub-bid must be accompanied by a copy of a certificate of eligibility issued by the Division of Capital Asset Management showing that the bidder has the classification and capa Town rating to perform the work required. An appropriate update statement must also be provided with each general bid and sub-bid. Any bid or sub-bid submitted without an appropriate certificate of eligibility or update statement shall be invalid.

22. Wage Rates

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.

23. Contractor Records

The Contractor shall comply with the provisions of Massachusetts General Laws, Chapter 149, Section 39R and Chapter 149, Section 27B concerning Contractor records.

24. Insurance

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.

25. Affirmative Action/Equal Employment Opportunity Laws and Regulations

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:

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

26. Town of Halifax Inquiry About Criminal Record (CORI) Regulations

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. Forms are located under Section 00 8000 - Other Forms of the Project Manual.

27. Form of Subcontract

The successful General Bidder in such General Bidder's bid shall be required to execute the form of subcontract prescribed by G.L.c.149. § 44F.

END OF SECTION

SECTION 00 3126

EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 – GENERAL

1.01 DESCRIPTION

A. *Report for Asbestos Containing Materials*
By Universal Environmental Consultants, Dated December 9, 2016

B. SKA-1.0 ROOF TEST CUT LOCATIONS

END OF SECTION

UEC universal environmental consultants

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

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)

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

OrderID: 131605901

131605901

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@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 joints
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 Berek Date: 12/8/16 Due Date: 24 Hr

Received By: Date:

RECEIVED
DEC 08 2016
By 13:18

PLM

OrderID: 131605901

131605901

CHAIN OF CUSTODY

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

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

Sample	Result	Description of Material	Sample Location
21		Caulking	roof chimney
22		stucco	Roof base

Reported By: George Bereh Date: 12/8/16 Due Date: 24 HR PLM

Received By: Date:

RECEIVED DEC 08 2016 By 13:18

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% 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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% 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)

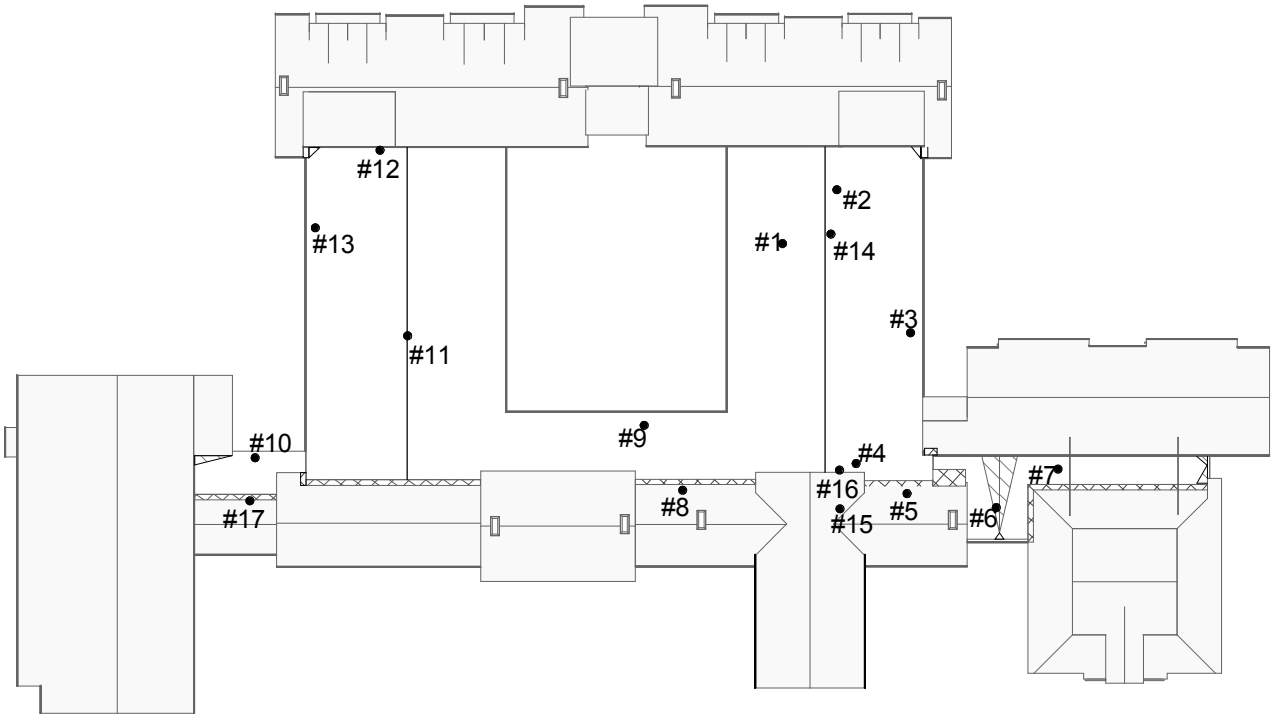
Steve Grise, Laboratory Manager
or Other Approved Signatory

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

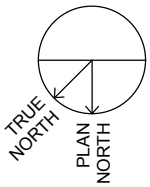
Initial report from: 12/09/2016 13:57:04

NOTE:
TEST LOCATION NUMBERS ON THIS PLAN CORRESPOND TO THE ASBESTOS BULK SAMPLE NUMBERS INDICATED IN UNIVERSAL ENVIRONMENTAL CONSULTANTS' REPORT DATED DECEMBER 9, 2016. (REFER TO PROJECT MANUAL).



A1 ROOF PLAN - ROOF TEST LOCATIONS

NOT TO SCALE



DATE: 05/19/17	ROOF TEST CUT LOCATIONS	HABEEB & ASSOCIATES ARCHITECTS
JOB NO: 1614.02	HALIFAX ELEMENTARY SCHOOL	150 LONGWATER DR. NORWELL,MA 02061-1618 OFFICE: 781-871-9804 FAX: 781-871-980 habeebarch.com
SKA-1.0	464 PLYMOUTH STREET HALIFAX, MA, 02338	

SECTION 00 4123

FORM FOR GENERAL BID

Date _____

To: Town of Halifax, 499 Plymouth Street, Halifax, MA 02338

A. The Undersigned, (hereinafter called the General Contractor), proposes to furnish all labor and materials required for the Roof Replacement at the Halifax Elementary School in Halifax, Massachusetts in accordance with the accompanying plans and specifications prepared by Habeeb & Associates Architects, Inc. for the amounts listed below, subject to additions and deductions in accordance with the terms of the specifications. It being understood that the Town of Halifax, (hereinafter called the Awarding Authority), will be the sole judge as to acceptance of bids and award of the Contract.

B. The General Contractor must be certified by the Division of Capital Asset Management and Maintenance (DCAMM) as a prime contractor in the category of Roofing.

C. This Bid includes Addenda:

Schedule of Addenda	
Number	**Date**

D. The proposed contract amount is:

_____ **Dollars, ($)**

E. The subdivision of the proposed Base Bid contract price is as follows:

Item 1 Base Bid General Contractor:
The work of the General Contractor, being all work other than that covered by Item 2-3:

$_____.

Item 2 Base Bid Sub-Bid Section 23 0000 – HVAC:
The work of the HVAC Filed Sub-Contractor:

$_____.

Item 3 Base Bid Sub-Bid Section 26 0000 – Electrical:
The work of the Electrical Filed Sub-Contractor:

$_____.

Sub-trade Sections	Name of Sub-bidder	Amount	Bonds Required Indicated by "Yes" or "No"
230000 – HVAC			
26 0000 – Electrical			

F. Unit Prices:
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 and profit. 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.	05 3100	Remove existing damaged perlite gypsum roof deck and replace with 1 ½" Type B 22 gauge metal decking fastened to existing steel joists.	1,200	SF	$_____	$_____
2.	05 3100	Remove and replace deteriorated 1 ½" Type B 20 gauge metal decking.	500	SF	$_____	$_____
3.	06 1000	Remove and replace deteriorated ¾" CDX plywood decking.	1,000	SF	$_____	$_____
4.	06 1000	Remove and replace deteriorated 2x6 T&G wood roof planking at gym.	500	SF	$_____	$_____
5.	06 1000	Remove and replace 100 damaged/stained Acoustical Panel Ceiling Tiles (2x4 tile).	100	Per Tile	$_____	$_____
6.	06 1000	Remove deteriorated nominal 2x6 wood blocking and replace with pressure treated wood blocking, at locations not indicated on the Architectural Drawings.	200	LF	$_____	$_____
					TOTAL	$_____

G. The undersigned 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 and that they will comply fully with all laws and regulations applicable to awards made subject to M.G.L. c. 149, section 44A.

H. The undersigned certifies 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.

I. The undersigned 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 any natural person, joint venture, partnership, corporation or other business or legal entity.

J. The undersigned certifies under penalty of perjury that the undersigned is not currently debarred from doing public construction work in the commonwealth under the provisions of M.G.L. c. 29, section 29F, or any other applicable debarment provisions of any other chapter of the General Laws, or any rule or regulation promulgated thereunder.

K. The undersigned agrees that if he is selected as the General Contractor he will, within five (5) days, Saturday, Sundays, and legal holidays excluded, after presentation thereof by the Owner, execute a Contract in accordance with the terms of this Bid and furnish a performance bond and 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 amount.

_____
Name of General Contracting Firm

_____
Address of General Contracting Firm

_____
Name of Person Authorized to Sign

_____
Title of Person Authorized to Sign

_____
Telephone Number of General Contracting Firm

_____
Signature of Person Authorized to Sign

END OF SECTION

SECTION 00 4124

FORM FOR FILED SUB-BID

Date _____

To: Town of Halifax, 499 Plymouth Street, Halifax, MA 02338

A. The Undersigned, (hereinafter called the Contractor), proposes to furnish all labor and materials required for the Roof Replacement at the Halifax Elementary School in Halifax, Massachusetts in accordance with the accompanying plans and specifications prepared by Habeeb & Associates Architects. for the amounts listed below, subject to additions and deductions in accordance with the terms of the specifications. It being understood that the Town of Halifax, (hereinafter called the Awarding Authority), will be the sole judge as to acceptance of bids and award of the Contract.

B. The Contractor must be certified by the Division of Capital Asset Management and Maintenance (DCAMM) in the sub-trade category they are bidding under.

C. This Sub-Bid includes Addenda:

Schedule of Addenda	
Number	**Date**

D. The Sub-Bid is for _____
(List Sub-Trade Category)

E. The proposed contract amount is:

Dollars, ($) _____

F. 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.]

G. The undersigned agrees that, if selected as a sub-bidder, they 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 on 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, 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.

H. The undersigned submits the following list for the names of all persons, firms, and corporations furnishing labor or labor and materials for the class, classes, or parts 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 own payroll and in the absence of a contrary provision in the specification the name of each such class of work or part and the bid price for such class of work or part are:

NAME	CLASS OF WORK	BID PRICE
		$
		$
		$
		$

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

I. The undersigned agrees that the above list of bids of the undersigned represents bona fide bids based on 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.

J. 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.

K. 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 sub-contractor for work of similar character as required for the above-named building.

Building	Architect	General Contractor	Amount of Contract
(a)			
(b)			
(c)			

4. Bank reference: _____ .

L. The undersigned hereby certifies it can furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that it will comply fully with all laws and regulations applicable to awards of sub-contracts subject to M.G.L. c.149, §44F.

The undersigned certifies 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.

The undersigned certifies under the penalties 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 natural person, joint venture, partnership, corporation, or other business or legal entity. The undersigned further certifies under penalty of perjury that the undersigned is not currently debarred from doing public construction work in the commonwealth under the provisions of M.G.L. c.29, §29F, or any other applicable debarment provisions of any other chapter of the General Laws, or any rule or regulation promulgated thereunder.

In submitting this bid, the undersigned understands and acknowledges that the Owner reserves the right and authority to reject any or all bids, or any part thereof, and/or to waive any informalities in the bidding if it is deemed by the Owner to be in the public interest to do so. The undersigned further understands and acknowledges that pursuant to such right and authority, the Owner may, for example reject the bid of any Bidder which has exhibited a pattern or tendency of failing to complete projects in a timely manner or to comply with applicable laws such as the Occupational Safety and Health Act of 1970, 29 U.S.C. section 651 et seq., and the Massachusetts Prevailing Wage Law, M.G.L. c. 149, section 26H-27H, or whose bid is inaccurate or incomplete in any way.

The undersigned further certifies that it has read and understands the applicable bidding and contract requirements and that its bid is complete, accurate, and in compliance with such bidding and contract requirements.

Name of Sub-Contracting Firm

Address of Sub-Contracting Firm

Name of Person Authorized to Sign

Title of Person Authorized to Sign

Telephone Number of Sub-Contracting Firm

Signature of Person Authorized to Sign

END OF SECTION

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. This price includes the following* alternates (and other items set forth in the sub-bid):

   Alternate No(s): _____, _____, _____, _____, _____.

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)

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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User Notes: (1281634099)

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

	« »
	(Contractor as Principal) *(Seal)*
	« »
(Witness)	*(Title)*
	« »
	(Surety) *(Seal)*
	« »
(Witness)	*(Title)*

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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

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.

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

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4 CONTRACT SUM

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6 DISPUTE RESOLUTION

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.)

« »

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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.

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§ 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.

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(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)

« »
« »
« »
« »

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« »
« »

§ 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

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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)*	**CONTRACTOR** *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

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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 2

ARTICLE 2 – THE WORK OF THIS CONTRACT

The Contractor shall perform all the Work required by the Contract Documents for providing Roof 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 21, 2017,"

3.3- Replace first sentence with "The Contractor shall achieve Substantial Completion of the entire Work on or before August 18, 2017."

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 five hundred dollars ($500.00) 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 3

ARTICLE 5 –PAYMENTS

5.1 PROGESS 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."

1 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."

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 61 13.13

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.

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

_____ By _____
(Principal Secretary)

_____

_____

_____
(Address-Zip Code)

_____ (SEAL)
Witness as to Principal

_____

_____
(Address-Zip Code)

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.

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)

_____ (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 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.

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

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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.

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§ 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.

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§ 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.

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§ 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.

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§ 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,

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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.

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§ 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

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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

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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

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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.

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§ 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.

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§ 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.

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§ 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.

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§ 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

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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

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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.

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§ 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.

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§ 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.

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§ 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.

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§ 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.

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§ 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

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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.

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§ 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.

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§ 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.

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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.

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§ 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

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.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.

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§ 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.

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§ 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

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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.

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SECTION 00 7300

1

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 Sub-subcontractor shall be 10% of any net increase or decrease of Cost of any Work performed by the Sub-subcontractor's own forces plus 5% of any aggregate net increase or decrease in Cost of any Work performed for the Sub-subcontractor by other contractors. Percentage for a Subcontractor shall be such percentage allowances for overhead and profit as are set forth in the Subcontract between such Subcontractor and the Contractor. 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 covered by the change.

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 apparat 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 the by 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 cause 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 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 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-maid 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. 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

The following forms are bound in this section of the Project Manual for reference:

- Massachusetts - Supplier Diversity Office - Municipalities General Guidelines
- Massachusetts Prevailing Wage Rates
- Weekly Payroll Records Report & Statement of Compliance
- Weekly Payroll Report Form
- Excerpts from Applicable State Laws
- Declaration Form: Non-Collusion, Debarment & Tax Attestation
- Conflict of Interest Certificate
- Clerk's Certificate
- W-9 Tax ID Form
- AIA Document G702 - Application and Certificate for Payment
- AIA Document G703 - Continuation Sheet
- Town of Halifax Inquiry About Criminal Record (CORI) Forms

OPERATIONAL SERVICES DIVISION
SUPPLIER DIVERSITY OFFICE

Reginald Nunnally
Executive Director

THE COMMONWEALTH OF MASSACHUSETTS
Executive Office for Administration and Finance
OPERATIONAL SERVICES DIVISION
One Ashburton Place, Suite 1017
Boston, MA 02108-1552

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kristen Lepore
Secretary

Gary J. Lambert
Assistant Secretary for
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.

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[1] *See generally,* MG.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)**

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

CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

RONALD L. WALKER, II
Secretary

WILLIAM D MCKINNEY
Director

Awarding Authority: Town of Halifax

Contract Number:

City/Town: HALIFAX

Description of Work: Renovation and repairs to the Halifax Elementary School including roof, windows, doors, and siding.

Job Location: 464 Plymouth Street

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 *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	12/01/2016	$32.15	$10.91	$10.89	$0.00	$53.95
(3 AXLE) DRIVER - EQUIPMENT *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	12/01/2016	$32.22	$10.91	$10.89	$0.00	$54.02
(4 & 5 AXLE) DRIVER - EQUIPMENT *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	12/01/2016	$32.34	$10.91	$10.89	$0.00	$54.14
ADS/SUBMERSIBLE PILOT *PILE DRIVER LOCAL 56 (ZONE 1)*	08/01/2015	$88.29	$9.80	$19.23	$0.00	$117.32
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR *LABORERS - ZONE 2*	12/01/2016	$32.65	$7.60	$13.00	$0.00	$53.25
	06/01/2017	$33.65	$7.60	$13.00	$0.00	$54.25
	12/01/2017	$34.28	$7.60	$13.00	$0.00	$54.88
	06/01/2018	$35.12	$7.60	$13.00	$0.00	$55.72
	12/01/2018	$35.96	$7.60	$13.00	$0.00	$56.56
	06/01/2019	$36.83	$7.60	$13.00	$0.00	$57.43
	12/01/2019	$37.69	$7.60	$13.00	$0.00	$58.29
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. *HEAT & FROST INSULATORS LOCAL 6 (BOSTON)*	12/01/2016	$33.90	$11.50	$7.10	$0.00	$52.50
	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 *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$45.38	$10.00	$15.25	$0.00	$70.63
	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 *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$45.38	$10.00	$15.25	$0.00	$70.63
	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"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BARCO-TYPE JUMPING TAMPER *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER *LABORERS - ZONE 2*	12/01/2016	$32.65	$7.60	$13.00	$0.00	$53.25
	06/01/2017	$33.65	$7.60	$13.00	$0.00	$54.25
	12/01/2017	$34.28	$7.60	$13.00	$0.00	$54.88
	06/01/2018	$35.12	$7.60	$13.00	$0.00	$55.72
	12/01/2018	$35.96	$7.60	$13.00	$0.00	$56.56
	06/01/2019	$36.83	$7.60	$13.00	$0.00	$57.43
	12/01/2019	$37.69	$7.60	$13.00	$0.00	$58.29
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER *BOILERMAKERS LOCAL 29*	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) *BRICKLAYERS LOCAL 3 (QUINCY)*	03/01/2017	$50.76	$10.75	$19.22	$0.00	$80.73

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *BRICK/PLASTER/CEMENT MASON - Local 3 Quincy*

Effective Date - 03/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$25.38	$10.75	$19.22	$0.00	$55.35
2	60	$30.46	$10.75	$19.22	$0.00	$60.43
3	70	$35.53	$10.75	$19.22	$0.00	$65.50
4	80	$40.61	$10.75	$19.22	$0.00	$70.58
5	90	$45.68	$10.75	$19.22	$0.00	$75.65

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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"						
CAISSON & UNDERPINNING BOTTOM MAN *LABORERS - FOUNDATION AND MARINE*	12/01/2016	$37.45	$7.60	$14.35	$0.00	$59.40
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER *LABORERS - FOUNDATION AND MARINE*	12/01/2016	$36.30	$7.60	$14.35	$0.00	$58.25
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN *LABORERS - FOUNDATION AND MARINE*	12/01/2016	$36.30	$7.60	$14.35	$0.00	$58.25
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
CARPENTER *CARPENTERS -ZONE 2 (Eastern Massachusetts)*	03/01/2017	$38.77	$9.90	$17.00	$0.00	$65.67
	09/01/2017	$39.78	$9.90	$17.00	$0.00	$66.68
	03/01/2018	$40.78	$9.90	$17.00	$0.00	$67.68
	09/01/2018	$41.82	$9.90	$17.00	$0.00	$68.72
	03/01/2019	$42.85	$9.90	$17.00	$0.00	$69.75

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *CARPENTER - Zone 2 Eastern MA*

Effective Date - 03/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$19.39	$9.90	$1.63	$0.00	$30.92
2	60	$23.26	$9.90	$1.63	$0.00	$34.79
3	70	$27.14	$9.90	$12.11	$0.00	$49.15
4	75	$29.08	$9.90	$12.11	$0.00	$51.09
5	80	$31.02	$9.90	$13.74	$0.00	$54.66
6	80	$31.02	$9.90	$13.74	$0.00	$54.66
7	90	$34.89	$9.90	$15.37	$0.00	$60.16
8	90	$34.89	$9.90	$15.37	$0.00	$60.16

Effective Date - 09/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$19.89	$9.90	$1.63	$0.00	$31.42
2	60	$23.87	$9.90	$1.63	$0.00	$35.40
3	70	$27.85	$9.90	$12.11	$0.00	$49.86
4	75	$29.84	$9.90	$12.11	$0.00	$51.85
5	80	$31.82	$9.90	$13.74	$0.00	$55.46
6	80	$31.82	$9.90	$13.74	$0.00	$55.46
7	90	$35.80	$9.90	$15.37	$0.00	$61.07
8	90	$35.80	$9.90	$15.37	$0.00	$61.07

Notes:

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING *BRICKLAYERS LOCAL 3 (QUINCY)*	01/01/2017	$45.67	$12.20	$19.41	$1.30	$78.58
	07/01/2017	$46.30	$12.20	$19.41	$1.30	$79.21
	01/01/2018	$46.54	$12.20	$19.41	$1.30	$79.45
	07/01/2018	$46.79	$12.20	$19.41	$1.30	$79.70
	01/01/2019	$47.03	$12.20	$19.41	$1.30	$79.94
	07/01/2019	$47.27	$12.20	$19.41	$1.30	$80.18
	01/01/2020	$47.52	$12.20	$19.41	$1.30	$80.43

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *CEMENT MASONRY/PLASTERING - Eastern Mass (Quincy)*

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$22.84	$12.20	$12.41	$0.00	$47.45
2	60	$27.40	$12.20	$14.41	$1.30	$55.31
3	65	$29.69	$12.20	$15.41	$1.30	$58.60
4	70	$31.97	$12.20	$16.41	$1.30	$61.88
5	75	$34.25	$12.20	$17.41	$1.30	$65.16
6	80	$36.54	$12.20	$18.41	$1.30	$68.45
7	90	$41.10	$12.20	$19.41	$1.30	$74.01

Effective Date - 07/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$23.15	$12.20	$12.41	$0.00	$47.76
2	60	$27.78	$12.20	$14.41	$1.30	$55.69
3	65	$30.10	$12.20	$15.41	$1.30	$59.01
4	70	$32.41	$12.20	$16.41	$1.30	$62.32
5	75	$34.73	$12.20	$17.41	$1.30	$65.64
6	80	$37.04	$12.20	$18.41	$1.30	$68.95
7	90	$41.67	$12.20	$19.41	$1.30	$74.58

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$46.38	$10.00	$15.25	$0.00	$71.63
	06/01/2017	$47.38	$10.00	$15.25	$0.00	$72.63
	12/01/2017	$48.38	$10.00	$15.25	$0.00	$73.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$31.17	$10.00	$15.25	$0.00	$56.42
	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"						
DELEADER (BRIDGE) *PAINTERS LOCAL 35 - ZONE 2*	01/01/2017	$51.41	$7.85	$16.10	$0.00	$75.36

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

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*	12/01/2016	$36.50	$7.60	$14.15	$0.00	$58.25
	06/01/2017	$37.50	$7.60	$14.15	$0.00	$59.25
	12/01/2017	$38.35	$7.60	$14.15	$0.00	$60.10
	06/01/2018	$39.30	$7.60	$14.15	$0.00	$61.05
	12/01/2018	$40.25	$7.60	$14.15	$0.00	$62.00
	06/01/2019	$41.25	$7.60	$14.15	$0.00	$63.00
	12/01/2019	$42.25	$7.60	$14.15	$0.00	$64.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR *LABORERS - ZONE 2*	12/01/2016	$37.50	$7.60	$14.15	$0.00	$59.25
	06/01/2017	$38.50	$7.60	$14.15	$0.00	$60.25
	12/01/2017	$39.35	$7.60	$14.15	$0.00	$61.10
	06/01/2018	$40.30	$7.60	$14.15	$0.00	$62.05
	12/01/2018	$41.25	$7.60	$14.15	$0.00	$63.00
	06/01/2019	$42.25	$7.60	$14.15	$0.00	$64.00
	12/01/2019	$43.25	$7.60	$14.15	$0.00	$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS *LABORERS - ZONE 2*	12/01/2016	$37.25	$7.60	$14.15	$0.00	$59.00
	06/01/2017	$38.25	$7.60	$14.15	$0.00	$60.00
	12/01/2017	$39.10	$7.60	$14.15	$0.00	$60.85
	06/01/2018	$40.05	$7.60	$14.15	$0.00	$61.80
	12/01/2018	$41.00	$7.60	$14.15	$0.00	$62.75
	06/01/2019	$42.00	$7.60	$14.15	$0.00	$63.75
	12/01/2019	$43.00	$7.60	$14.15	$0.00	$64.75
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: CONCRETE CUTTER/SAWYER *LABORERS - ZONE 2*	12/01/2016	$37.50	$7.60	$14.15	$0.00	$59.25
	06/01/2017	$38.50	$7.60	$14.15	$0.00	$60.25
	12/01/2017	$39.35	$7.60	$14.15	$0.00	$61.10
	06/01/2018	$40.30	$7.60	$14.15	$0.00	$62.05
	12/01/2018	$41.25	$7.60	$14.15	$0.00	$63.00
	06/01/2019	$42.25	$7.60	$14.15	$0.00	$64.00
	12/01/2019	$43.25	$7.60	$14.15	$0.00	$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR *LABORERS - ZONE 2*	12/01/2016	$37.25	$7.60	$14.15	$0.00	$59.00
	06/01/2017	$38.25	$7.60	$14.15	$0.00	$60.00
	12/01/2017	$39.10	$7.60	$14.15	$0.00	$60.85
	06/01/2018	$40.05	$7.60	$14.15	$0.00	$61.80
	12/01/2018	$41.00	$7.60	$14.15	$0.00	$62.75
	06/01/2019	$42.00	$7.60	$14.15	$0.00	$63.75
	12/01/2019	$43.00	$7.60	$14.15	$0.00	$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER *LABORERS - ZONE 2*	12/01/2016	$36.50	$7.60	$14.15	$0.00	$58.25
	06/01/2017	$37.50	$7.60	$14.15	$0.00	$59.25
	12/01/2017	$38.35	$7.60	$14.15	$0.00	$60.10
	06/01/2018	$39.30	$7.60	$14.15	$0.00	$61.05
	12/01/2018	$40.25	$7.60	$14.15	$0.00	$62.00
	06/01/2019	$41.25	$7.60	$14.15	$0.00	$63.00
	12/01/2019	$42.25	$7.60	$14.15	$0.00	$64.00
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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 *PILE DRIVER LOCAL 56 (ZONE 1)*	08/01/2015	$58.86	$9.80	$19.23	$0.00	$87.89
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER *PILE DRIVER LOCAL 56 (ZONE 1)*	08/01/2015	$42.04	$9.80	$19.23	$0.00	$71.07
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) *PILE DRIVER LOCAL 56 (ZONE 1)*	08/01/2015	$63.06	$9.80	$19.23	$0.00	$92.09
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) *PILE DRIVER LOCAL 56 (ZONE 1)*	08/01/2015	$88.23	$9.80	$19.23	$0.00	$117.26
For apprentice rates see "Apprentice- PILE DRIVER"						
ELECTRICIAN *ELECTRICIANS LOCAL 223*	09/01/2016	$39.21	$8.90	$11.51	$0.00	$59.62

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *ELECTRICIAN - Local 223*

Effective Date - 09/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$15.68	$0.00	$0.47	$0.00	$16.15
2	42	$16.47	$0.00	$0.49	$0.00	$16.96
3	45	$17.64	$8.90	$0.53	$0.00	$27.07
4	48	$18.82	$8.90	$3.42	$0.00	$31.14
5	50	$19.61	$8.90	$3.55	$0.00	$32.06
6	55	$21.57	$8.90	$3.83	$0.00	$34.30
7	60	$23.53	$8.90	$4.12	$0.00	$36.55
8	65	$25.49	$8.90	$4.39	$0.00	$38.78
9	70	$27.45	$8.90	$4.68	$0.00	$41.03
10	75	$29.41	$8.90	$4.96	$0.00	$43.27

Notes:

Steps are 750 hours

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR *ELEVATOR CONSTRUCTORS LOCAL 4*	01/01/2017	$55.86	$15.28	$15.71	$0.00	$86.85

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 *ELEVATOR CONSTRUCTORS LOCAL 4*	01/01/2017	$39.10	$15.28	$15.71	$0.00	$70.09

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY *OPERATING ENGINEERS LOCAL 4*	05/01/2017	$42.15	$10.00	$15.25	$0.00	$67.40
	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 *OPERATING ENGINEERS LOCAL 4*	05/01/2017	$43.61	$10.00	$15.25	$0.00	$68.86
	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 *OPERATING ENGINEERS LOCAL 4*	05/01/2017	$22.41	$10.00	$15.25	$0.00	$47.66
	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 *ELECTRICIANS LOCAL 223*	09/01/2016	$39.21	$8.90	$11.51	$0.00	$59.62
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING*ELECTRICIANS LOCAL 223*	09/01/2016	$33.33	$8.90	$9.78	$0.00	$52.01
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$37.65	$10.00	$15.25	$0.00	$62.90
	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 *LABORERS - ZONE 2*	12/01/2016	$20.50	$7.60	$13.00	$0.00	$41.10
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER *FLOORCOVERERS LOCAL 2168 ZONE 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 *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$45.38	$10.00	$15.25	$0.00	$70.63
	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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$31.17	$10.00	$15.25	$0.00	$56.42
	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) *GLAZIERS LOCAL 35 (ZONE 2)*	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 *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$45.38	$10.00	$15.25	$0.00	$70.63
	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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *OPERATING ENGINEERS - Local 4*

Effective Date - 12/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	$24.96	$10.00	$0.00	$0.00	$34.96
2	60	$27.23	$10.00	$15.25	$0.00	$52.48
3	65	$29.50	$10.00	$15.25	$0.00	$54.75
4	70	$31.77	$10.00	$15.25	$0.00	$57.02
5	75	$34.04	$10.00	$15.25	$0.00	$59.29
6	80	$36.30	$10.00	$15.25	$0.00	$61.55
7	85	$38.57	$10.00	$15.25	$0.00	$63.82
8	90	$40.84	$10.00	$15.25	$0.00	$66.09

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

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) *SHEETMETAL WORKERS LOCAL 17 - A*	02/01/2017	$43.72	$11.45	$23.07	$2.35	$80.59
	08/01/2017	$44.82	$11.45	$23.07	$2.35	$81.69
	02/01/2018	$45.97	$11.45	$23.07	$2.35	$82.84
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) *ELECTRICIANS LOCAL 223*	09/01/2016	$39.21	$8.90	$11.51	$0.00	$59.62
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) *SHEETMETAL WORKERS LOCAL 17 - A*	02/01/2017	$43.72	$11.45	$23.07	$2.35	$80.59
	08/01/2017	$44.82	$11.45	$23.07	$2.35	$81.69
	02/01/2018	$45.97	$11.45	$23.07	$2.35	$82.84
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) *PLUMBERS & PIPEFITTERS LOCAL 51*	03/01/2016	$37.38	$11.00	$16.10	$0.00	$64.48
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC *PLUMBERS & PIPEFITTERS LOCAL 51*	03/01/2016	$37.38	$11.00	$16.10	$0.00	$64.48
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HYDRAULIC DRILLS *LABORERS - ZONE 2*	12/01/2016	$32.65	$7.60	$13.00	$0.00	$53.25
	06/01/2017	$33.65	$7.60	$13.00	$0.00	$54.25
	12/01/2017	$34.28	$7.60	$13.00	$0.00	$54.88
	06/01/2018	$35.12	$7.60	$13.00	$0.00	$55.72
	12/01/2018	$35.96	$7.60	$13.00	$0.00	$56.56
	06/01/2019	$36.83	$7.60	$13.00	$0.00	$57.43
	12/01/2019	$37.69	$7.60	$13.00	$0.00	$58.29
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) *HEAT & FROST INSULATORS LOCAL 6 (BOSTON)*	09/01/2016	$45.09	$11.75	$14.20	$0.00	$71.04
	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 - 09/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$22.55	$11.75	$10.45	$0.00	$44.75
2	60	$27.05	$11.75	$11.20	$0.00	$50.00
3	70	$31.56	$11.75	$11.95	$0.00	$55.26
4	80	$36.07	$11.75	$12.70	$0.00	$60.52

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

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER *IRONWORKERS LOCAL 7 (BOSTON AREA)*	03/16/2017	$44.65	$7.80	$20.85	$0.00	$73.30

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 *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
LABORER *LABORERS - ZONE 2*	12/01/2016	$31.90	$7.60	$13.00	$0.00	$52.50
	06/01/2017	$32.90	$7.60	$13.00	$0.00	$53.50
	12/01/2017	$33.53	$7.60	$13.00	$0.00	$54.13
	06/01/2018	$34.37	$7.60	$13.00	$0.00	$54.97
	12/01/2018	$35.21	$7.60	$13.00	$0.00	$55.81
	06/01/2019	$36.08	$7.60	$13.00	$0.00	$56.68
	12/01/2019	$36.94	$7.60	$13.00	$0.00	$57.54

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *LABORER - Zone 2*

Effective Date - 12/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$19.14	$7.60	$13.00	$0.00	$39.74
2	70	$22.33	$7.60	$13.00	$0.00	$42.93
3	80	$25.52	$7.60	$13.00	$0.00	$46.12
4	90	$28.71	$7.60	$13.00	$0.00	$49.31

Effective Date - 06/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$19.74	$7.60	$13.00	$0.00	$40.34
2	70	$23.03	$7.60	$13.00	$0.00	$43.63
3	80	$26.32	$7.60	$13.00	$0.00	$46.92
4	90	$29.61	$7.60	$13.00	$0.00	$50.21

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER *LABORERS - ZONE 2*	12/01/2016	$31.90	$7.60	$13.00	$0.00	$52.50
	06/01/2017	$32.90	$7.60	$13.00	$0.00	$53.50
	12/01/2017	$33.53	$7.60	$13.00	$0.00	$54.13
	06/01/2018	$34.37	$7.60	$13.00	$0.00	$54.97
	12/01/2018	$35.21	$7.60	$13.00	$0.00	$55.81
	06/01/2019	$36.08	$7.60	$13.00	$0.00	$56.68
	12/01/2019	$36.94	$7.60	$13.00	$0.00	$57.54
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER *LABORERS - ZONE 2*	12/01/2016	$31.90	$7.60	$13.00	$0.00	$52.50
	06/01/2017	$32.90	$7.60	$13.00	$0.00	$53.50
	12/01/2017	$33.53	$7.60	$13.00	$0.00	$54.13
	06/01/2018	$34.37	$7.60	$13.00	$0.00	$54.97
	12/01/2018	$35.21	$7.60	$13.00	$0.00	$55.81
	06/01/2019	$36.08	$7.60	$13.00	$0.00	$56.68
	12/01/2019	$36.94	$7.60	$13.00	$0.00	$57.54
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER *LABORERS - ZONE 2*	12/01/2016	$32.10	$7.60	$12.95	$0.00	$52.65
	06/01/2017	$33.10	$7.60	$12.95	$0.00	$53.65
	12/01/2017	$33.73	$7.60	$12.95	$0.00	$54.28
	06/01/2018	$34.57	$7.60	$12.95	$0.00	$55.12
	12/01/2018	$35.41	$7.60	$12.95	$0.00	$55.96
	06/01/2019	$36.28	$7.60	$12.95	$0.00	$56.83
	12/01/2019	$37.14	$7.60	$12.95	$0.00	$57.69
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MASON TENDER *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER *LABORERS - ZONE 2*	12/01/2016	$31.90	$7.60	$13.00	$0.00	$52.50
	06/01/2017	$32.90	$7.60	$13.00	$0.00	$53.50
	12/01/2017	$33.53	$7.60	$13.00	$0.00	$54.13
	06/01/2018	$34.37	$7.60	$13.00	$0.00	$54.97
	12/01/2018	$35.21	$7.60	$13.00	$0.00	$55.81
	06/01/2019	$36.08	$7.60	$13.00	$0.00	$56.68
	12/01/2019	$36.94	$7.60	$13.00	$0.00	$57.54
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER *LABORERS - ZONE 2*	12/01/2016	$31.90	$7.60	$13.00	$0.00	$52.50
	06/01/2017	$32.90	$7.60	$13.00	$0.00	$53.50
	12/01/2017	$33.53	$7.60	$13.00	$0.00	$54.13
	06/01/2018	$34.37	$7.60	$13.00	$0.00	$54.97
	12/01/2018	$35.21	$7.60	$13.00	$0.00	$55.81
	06/01/2019	$36.08	$7.60	$13.00	$0.00	$56.68
	12/01/2019	$36.94	$7.60	$13.00	$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 *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
MARBLE & TILE FINISHERS *BRICKLAYERS LOCAL 3 - MARBLE & TILE*	02/01/2017	$38.78	$10.75	$17.67	$0.00	$67.20

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *MARBLE & TILE FINISHER - Local 3 Marble & Tile*

Effective Date - 02/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$19.39	$10.75	$17.67	$0.00	$47.81
2	60	$23.27	$10.75	$17.67	$0.00	$51.69
3	70	$27.15	$10.75	$17.67	$0.00	$55.57
4	80	$31.02	$10.75	$17.67	$0.00	$59.44
5	90	$34.90	$10.75	$17.67	$0.00	$63.32

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS,TILELAYERS & TERRAZZO MECH *BRICKLAYERS LOCAL 3 - MARBLE & TILE*	02/01/2017	$50.80	$10.75	$19.22	$0.00	$80.77

Apprentice - *MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile*

Effective Date - 02/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$25.40	$10.75	$19.22	$0.00	$55.37
2	60	$30.48	$10.75	$19.22	$0.00	$60.45
3	70	$35.56	$10.75	$19.22	$0.00	$65.53
4	80	$40.64	$10.75	$19.22	$0.00	$70.61
5	90	$45.72	$10.75	$19.22	$0.00	$75.69

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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"						
MECHANICS MAINTENANCE *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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"						
MILLWRIGHT (Zone 2) *MILLWRIGHTS LOCAL 1121 - Zone 2*	04/01/2017	$35.47	$9.90	$18.50	$0.00	$63.87
	10/01/2017	$36.32	$9.90	$18.50	$0.00	$64.72
	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

Apprentice - *MILLWRIGHT - Local 1121 Zone 2*

Effective Date - 04/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	$19.51	$9.90	$5.31	$0.00	$34.72
2	65	$23.06	$9.90	$15.13	$0.00	$48.09
3	75	$26.60	$9.90	$16.10	$0.00	$52.60
4	85	$30.15	$9.90	$17.06	$0.00	$57.11

Effective Date - 10/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	$19.98	$9.90	$5.31	$0.00	$35.19
2	65	$23.61	$9.90	$15.13	$0.00	$48.64
3	75	$27.24	$9.90	$16.10	$0.00	$53.24
4	85	$30.87	$9.90	$15.06	$0.00	$55.83

Notes:

Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES,GRADALLS) *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$22.96	$10.00	$15.25	$0.00	$48.21
	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*	12/01/2016	$26.94	$10.00	$15.25	$0.00	$52.19
	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*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

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) *PAINTERS LOCAL 35 - ZONE 2*	01/01/2017	$40.37	$7.85	$16.10	$0.00	$64.32

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) *LABORERS - ZONE 2*	12/01/2016	$31.90	$7.60	$13.00	$0.00	$52.50
	06/01/2017	$32.90	$7.60	$13.00	$0.00	$53.50
	12/01/2017	$33.53	$7.60	$13.00	$0.00	$54.13
	06/01/2018	$34.37	$7.60	$13.00	$0.00	$54.97
	12/01/2018	$35.21	$7.60	$13.00	$0.00	$55.81
	06/01/2019	$36.08	$7.60	$13.00	$0.00	$56.68
	12/01/2019	$36.94	$7.60	$13.00	$0.00	$57.54

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) * * If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.*PAINTERS LOCAL 35 - ZONE 2*	01/01/2017	$40.91	$7.85	$16.10	$0.00	$64.86

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER / TAPER (BRUSH, REPAINT) *PAINTERS LOCAL 35 - ZONE 2*	01/01/2017	$38.97	$7.85	$16.10	$0.00	$62.92

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
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
PILE DRIVER *PILE DRIVER LOCAL 56 (ZONE 1)*	08/01/2015	$42.04	$9.80	$19.23	$0.00	$71.07

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 *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
PLUMBER & PIPEFITTER *PLUMBERS & PIPEFITTERS LOCAL 51*	03/01/2016	$37.38	$11.00	$16.10	$0.00	$64.48

Apprentice - *PLUMBER/PIPEFITTER - Local 51*

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$14.95	$11.00	$1.50	$0.00	$27.45
2	50	$18.69	$11.00	$1.50	$0.00	$31.19
3	60	$22.43	$11.00	$7.85	$0.00	$41.28
4	70	$26.17	$11.00	$11.66	$0.00	$48.83
5	80	$29.90	$11.00	$14.20	$0.00	$55.10

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.) *PLUMBERS & PIPEFITTERS LOCAL 51*	03/01/2016	$37.38	$11.00	$16.10	$0.00	$64.48
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
PNEUMATIC DRILL/TOOL OPERATOR *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER *LABORERS - ZONE 2*	12/01/2016	$32.90	$7.60	$13.00	$0.00	$53.50
	06/01/2017	$33.90	$7.60	$13.00	$0.00	$54.50
	12/01/2017	$34.53	$7.60	$13.00	$0.00	$55.13
	06/01/2018	$35.37	$7.60	$13.00	$0.00	$55.97
	12/01/2018	$36.21	$7.60	$13.00	$0.00	$56.81
	06/01/2019	$37.08	$7.60	$13.00	$0.00	$57.68
	12/01/2019	$37.94	$7.60	$13.00	$0.00	$58.54
For apprentice rates see "Apprentice- LABORER"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$45.38	$10.00	$15.25	$0.00	$70.63
	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"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PUMP OPERATOR (CONCRETE) *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$45.38	$10.00	$15.25	$0.00	$70.63
	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) *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$31.17	$10.00	$15.25	$0.00	$56.42
	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 *TEAMSTERS LOCAL 653*	08/01/2008	$19.76	$7.16	$4.21	$0.00	$31.13
RECLAIMERS *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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) *CARPENTERS -ZONE 2 (Residential Wood)*	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. *CARPENTERS -ZONE 2 (Residential Wood)*	04/01/2017	$26.31	$7.07	$7.18	$0.00	$40.56
	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 - 04/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$15.79	$7.07	$0.00	$0.00	$22.86
2	60	$15.79	$7.07	$0.00	$0.00	$22.86
3	65	$17.10	$7.07	$7.18	$0.00	$31.35
4	70	$18.42	$7.07	$7.18	$0.00	$32.67
5	75	$19.73	$7.07	$7.18	$0.00	$33.98
6	80	$21.05	$7.07	$7.18	$0.00	$35.30
7	85	$22.36	$7.07	$7.18	$0.00	$36.61
8	90	$23.68	$7.07	$7.18	$0.00	$37.93

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

Notes:

Apprentice to Journeyworker Ratio:1:5

RIDE-ON MOTORIZED BUGGY OPERATOR *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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.Roofer Waterproofng &Roofer Damproofg) *ROOFERS LOCAL 33*	02/01/2017	$41.36	$11.10	$13.80	$0.00	$66.26
	08/01/2017	$42.46	$11.10	$13.80	$0.00	$67.36
	02/01/2018	$43.61	$11.10	$13.80	$0.00	$68.51
	08/01/2018	$44.71	$11.10	$13.80	$0.00	$69.61
	02/01/2019	$45.86	$11.10	$13.80	$0.00	$70.76

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *ROOFER - Local 33*

Effective Date - 02/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$20.68	$11.10	$3.44	$0.00	$35.22
2	60	$24.82	$11.10	$13.80	$0.00	$49.72
3	65	$26.88	$11.10	$13.80	$0.00	$51.78
4	75	$31.02	$11.10	$13.80	$0.00	$55.92
5	85	$35.16	$11.10	$13.80	$0.00	$60.06

Effective Date - 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$21.23	$11.10	$3.44	$0.00	$35.77
2	60	$25.48	$11.10	$13.80	$0.00	$50.38
3	65	$27.60	$11.10	$13.80	$0.00	$52.50
4	75	$31.85	$11.10	$13.80	$0.00	$56.75
5	85	$36.09	$11.10	$13.80	$0.00	$60.99

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 *ROOFERS LOCAL 33*	02/01/2017	$41.61	$11.10	$13.80	$0.00	$66.51
	08/01/2017	$42.71	$11.10	$13.80	$0.00	$67.61
	02/01/2018	$43.86	$11.10	$13.80	$0.00	$68.76
	08/01/2018	$44.96	$11.10	$13.80	$0.00	$69.86
	02/01/2019	$46.11	$11.10	$13.80	$0.00	$71.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER *SHEETMETAL WORKERS LOCAL 17 - A*	02/01/2017	$43.72	$11.45	$23.07	$2.35	$80.59
	08/01/2017	$44.82	$11.45	$23.07	$2.35	$81.69
	02/01/2018	$45.97	$11.45	$23.07	$2.35	$82.84

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *SHEET METAL WORKER - Local 17-A*

Effective Date - 02/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$17.49	$11.45	$5.24	$0.00	$34.18
2	40	$17.49	$11.45	$5.24	$0.00	$34.18
3	45	$19.67	$11.45	$10.31	$1.24	$42.67
4	45	$19.67	$11.45	$10.31	$1.24	$42.67
5	50	$21.86	$11.45	$11.21	$1.34	$45.86
6	50	$21.86	$11.45	$11.46	$1.34	$46.11
7	60	$26.23	$11.45	$13.02	$1.52	$52.22
8	65	$28.42	$11.45	$13.93	$1.61	$55.41
9	75	$32.79	$11.45	$15.74	$1.80	$61.78
10	85	$37.16	$11.45	$17.05	$1.97	$67.63

Effective Date - 08/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$17.93	$11.45	$5.24	$0.00	$34.62
2	40	$17.93	$11.45	$5.24	$0.00	$34.62
3	45	$20.17	$11.45	$10.31	$1.26	$43.19
4	45	$20.17	$11.45	$10.31	$1.26	$43.19
5	50	$22.41	$11.45	$11.21	$1.35	$46.42
6	50	$22.41	$11.45	$11.46	$1.36	$46.68
7	60	$26.89	$11.45	$13.02	$1.54	$52.90
8	65	$29.13	$11.45	$13.93	$1.64	$56.15
9	75	$33.62	$11.45	$15.74	$1.82	$62.63
10	85	$38.10	$11.45	$17.05	$2.00	$68.60

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*	03/01/2017	$56.08	$8.77	$17.20	$0.00	$82.05

Apprentice - *SPRINKLER FITTER - Local 550 (Section A) Zone 1*

Effective Date - 03/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	$19.63	$8.52	$8.70	$0.00	$36.85
2	40	$22.43	$8.52	$8.70	$0.00	$39.65
3	45	$25.24	$8.52	$8.70	$0.00	$42.46
4	50	$28.04	$8.52	$8.70	$0.00	$45.26
5	55	$30.84	$8.52	$8.70	$0.00	$48.06
6	60	$33.65	$8.52	$10.20	$0.00	$52.37
7	65	$36.45	$8.52	$10.20	$0.00	$55.17
8	70	$39.26	$8.52	$10.20	$0.00	$57.98
9	75	$42.06	$8.52	$10.20	$0.00	$60.78
10	80	$44.86	$8.52	$10.20	$0.00	$63.58

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 *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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 *ELECTRICIANS LOCAL 223*	09/01/2016	$33.33	$8.90	$9.78	$0.00	$52.01

Apprentice - *TELECOMMUNICATION TECHNICIAN - Local 223*

Effective Date - 09/01/2016

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*	02/01/2017	$49.70	$10.75	$19.22	$0.00	$79.67

Apprentice - *TERRAZZO FINISHER - Local 3 Marble & Tile*

Effective Date - 02/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$24.85	$10.75	$19.22	$0.00	$54.82
2	60	$29.82	$10.75	$19.22	$0.00	$59.79
3	70	$34.79	$10.75	$19.22	$0.00	$64.76
4	80	$39.76	$10.75	$19.22	$0.00	$69.73
5	90	$44.73	$10.75	$19.22	$0.00	$74.70

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
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER *LABORERS - FOUNDATION AND MARINE*	12/01/2016	$36.42	$7.60	$14.35	$0.00	$58.37
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER *LABORERS - FOUNDATION AND MARINE*	12/01/2016	$36.30	$7.60	$14.35	$0.00	$58.25
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$44.94	$10.00	$15.25	$0.00	$70.19
	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 *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	12/01/2016	$33.02	$10.91	$10.89	$0.00	$54.82

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - COMPRESSED AIR *LABORERS (COMPRESSED AIR)* For apprentice rates see "Apprentice- LABORER"	12/01/2016	$48.58	$7.60	$14.75	$0.00	$70.93
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) *LABORERS (COMPRESSED AIR)* For apprentice rates see "Apprentice- LABORER"	12/01/2016	$50.58	$7.60	$14.75	$0.00	$72.93
TUNNEL WORK - FREE AIR *LABORERS (FREE AIR TUNNEL)* For apprentice rates see "Apprentice- LABORER"	12/01/2016	$40.65	$7.60	$14.75	$0.00	$63.00
TUNNEL WORK - FREE AIR (HAZ. WASTE) *LABORERS (FREE AIR TUNNEL)* For apprentice rates see "Apprentice- LABORER"	12/01/2016	$42.65	$7.60	$14.75	$0.00	$65.00
VAC-HAUL *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	12/01/2016	$32.44	$10.91	$10.89	$0.00	$54.24
WAGON DRILL OPERATOR *LABORERS - ZONE 2*	12/01/2016	$32.15	$7.60	$13.00	$0.00	$52.75
	06/01/2017	$33.15	$7.60	$13.00	$0.00	$53.75
	12/01/2017	$33.78	$7.60	$13.00	$0.00	$54.38
	06/01/2018	$34.62	$7.60	$13.00	$0.00	$55.22
	12/01/2018	$35.46	$7.60	$13.00	$0.00	$56.06
	06/01/2019	$36.33	$7.60	$13.00	$0.00	$56.93
	12/01/2019	$37.19	$7.60	$13.00	$0.00	$57.79
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR *OPERATING ENGINEERS LOCAL 4*	12/01/2016	$45.38	$10.00	$15.25	$0.00	$70.63
	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 *PLUMBERS & PIPEFITTERS LOCAL 51* For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"	03/01/2016	$37.38	$11.00	$16.10	$0.00	$64.48
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$26.61	$7.50	$1.80	$0.00	$35.91
	09/03/2017	$27.14	$7.75	$1.81	$0.00	$36.70
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$37.70	$7.50	$8.87	$0.00	$54.07
	09/03/2017	$38.45	$7.75	$9.53	$0.00	$55.73
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$31.05	$7.50	$8.89	$0.00	$47.44
	09/03/2017	$31.66	$7.75	$9.44	$0.00	$48.85
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$24.39	$7.50	$1.73	$0.00	$33.62
	09/03/2017	$24.88	$7.75	$1.75	$0.00	$34.38
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$37.70	$7.50	$12.95	$0.00	$58.15
	09/03/2017	$38.45	$7.75	$13.61	$0.00	$59.81
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$33.26	$7.50	$9.63	$0.00	$50.39
	09/03/2017	$33.92	$7.75	$10.21	$0.00	$51.88
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$24.39	$7.50	$1.73	$0.00	$33.62
	09/03/2017	$24.88	$7.75	$1.75	$0.00	$34.38

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$19.96	$7.50	$1.60	$0.00	$29.06
	09/03/2017	$20.35	$7.75	$1.61	$0.00	$29.71
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	08/28/2016	$44.35	$7.50	$15.83	$0.00	$67.68
	09/03/2017	$45.23	$7.75	$16.61	$0.00	$69.59

Apprentice - *LINEMAN (Outside Electrical) - East Local 104*

Effective Date - 08/28/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$26.61	$7.50	$3.30	$0.00	$37.41
2	65	$28.83	$7.50	$3.36	$0.00	$39.69
3	70	$31.05	$7.50	$3.43	$0.00	$41.98
4	75	$33.26	$7.50	$5.00	$0.00	$45.76
5	80	$35.48	$7.50	$5.06	$0.00	$48.04
6	85	$37.70	$7.50	$5.13	$0.00	$50.33
7	90	$39.92	$7.50	$7.20	$0.00	$54.62

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 *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	01/01/2016	$28.98	$4.25	$3.12	$0.00	$36.35
TELEDATA LINEMAN/EQUIPMENT OPERATOR *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	01/01/2016	$27.31	$4.25	$3.07	$0.00	$34.63
TELEDATA WIREMAN/INSTALLER/TECHNICIAN *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	01/01/2016	$27.31	$4.25	$3.07	$0.00	$34.63
TREE TRIMMER *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	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 *OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104*	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

Additional Apprentice 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:

Employee Name & Complete Address	Employee is OSHA 10 Certified (?)	Work Classification:	Appr. Rate (%)	Hours Worked Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.	Project Hours (A) / All Other Hours	Hourly Base Wage (B)	"Employer" Hourly Fringe Benefit Contributions: Health & Welfare Insurance (C')	ERISA Pension Plan (D)	Supp. Unemp. (E)	Total Hourly Prev. Wage (F) (B+C+D+E)	Project Gross Wages (G) (A x F) / Total Gross Wages	Check No. (H)

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

/ /

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:

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 generalcontractor 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 doe snot submit a periodic estimate for the value of the labor or materials performed or furnished by the subcontractor and the

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 on 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 even, 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

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

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

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

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

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

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:
☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
☐ 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.
☐ 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) _____
(Applies to accounts maintained outside the U.S.)

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:

1. 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
2. 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
3. I am a U.S. citizen or other U.S. person (defined below); and
4. 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 ▶**

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:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. 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

4. 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)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	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*
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.

DRAFT

AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:

PROJECT:

APPLICATION NO: 001
PERIOD TO:
CONTRACT FOR:
CONTRACT DATE:
PROJECT NOS: / /

Distribution to:
OWNER: ☐
ARCHITECT: ☐
CONTRACTOR: ☐
FIELD: ☐
OTHER: ☐

FROM CONTRACTOR:

VIA ARCHITECT:

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

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User Notes:

(2174043018)

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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: FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED: THIS PERIOD	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)
	GRAND TOTAL	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	0.00 %	$ 0.00	$ 0.00

DRAFT

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User Notes: (3539458254)

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 licenses 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 THE ENTIRE APPLICATION LEGIBLY. All information must be complete or the CORI is unable to be processed and ID must be attached

School Building(s) Location or Department _____ Requested Position (e.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 31 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

G-001	TITLE SHEET
G-002	SITE PLAN

ARCHITECTURAL

AD-140	OVERALL ROOF PLAN – EXISTING / DEMOLITION
A-140	OVERALL ROOF PLAN – NEW
A-141	ROOF PLAN – WING A – NEW
A-142	ROOF PLAN – WING B – NEW
A-143	ROOF PLAN – WING C – NEW
A-500	ROOF DETAILS
A-501	ROOF DETAILS
A-502	ROOF DETAILS
A-503	CHIMNEY DETAILS
A-504	ROOF DETAILS

PLUMBING

P-100	PLUMBING ROOF PLAN – DEMOLITION
P-101	PLUMBING ROOF PLAN – NEW WORK
P-102	PLUMBING DETAILS AND NOTES

MECHANICAL

H-100	MECHANICAL ROOF PLAN – DEMOLITION
H-101	MECHANICAL ROOF PLAN – NEW WORK

ELECTRICAL

E-100	ELECTRICAL ROOF PLAN – DEMOLITION
E-101	ELECTRICAL ROOF PLAN – NEW WORK

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 Roofing Systems at the Halifax Elementary School in Halifax, Massachusetts.

B. Without limiting the Contract Documents, the work generally consists of:

1. Removing and disposal of existing roofing shingles, membranes and flashing, insulation, and underlayments.

2. Provide new roofing systems.

3. Provide a safety rail at existing roof hatch.

4. Remove existing and provide new drain bowl and strainer.

5. Remove existing and provide gutters and downspout systems tied into existing storm drainage system.

6. Remove existing wood trim and replace with new cellulose PVC, and provide new PVC trim as indicated on Drawings.

7. Remove existing and provide snow guards.

8. Provide a non-penetrating safety guard railing system for fall protection at the courtyard roof edge and at equipment within 10’-0” of flat low-slope roof edges.

9. Provide new EIFS systems and repair of existing stucco at the existing false chimneys as indicated on the Drawings.

10. Removal of existing and replacement with new, or modification to, HVAC rooftop mechanical equipment and associated piping and electric wiring and conduit, for new roofing work and as indicated on the Drawings.

11. 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 roof systems.

f. Disconnection, extension, and reconnection of electric, energy management systems, and removal, disposal, and replacement of condenser refrigerant necessary for the roofing contractor to remove, raise, and reinstall new equipment and utilities. The disconnection, extension, and reconnection of the new 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 21, 2017. Work hours: 7:00 AM to 5:00 PM. All work shall be substantially complete no later than Friday, August 18, 2017.

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.

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.	05 3100	Remove existing damaged perlite gypsum roof deck and replace with 1 ½" Type B 22 gauge metal decking fastened to existing steel joists.	1,200	SF
2.	05 3100	Remove and replace deteriorated 1 ½" Type B 20 gauge metal decking.	500	SF
3.	06 1000	Remove and replace deteriorated ¾" CDX plywood decking.	1,000	SF
4.	06 1000	Remove and replace deteriorated 2x6 T&G wood roof planking at gym.	500	SF
5.	06 1000	Remove and replace 100 damaged/stained Acoustical Panel Ceiling Tiles (2x4 tile).	100	Per Tile
6.	06 1000	Remove deteriorated nominal 2x6 wood blocking and replace with pressure treated wood blocking, at locations not indicated on the Architectural Drawings.	200	LF

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

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.

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.

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.

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.
   d. Submittals.
   e. Closeout Documents.

4. For each line item, which has installed value of more than $20,000.00, 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. Asbestos Inspection Report. (See section 00 3126.)

B. Section 02 4100 – Demolition.

C. Section 07 0150 – Preparation for Re-Roofing.

D. Section 07 3113 – Asphalt Shingles.

E. Section 07 5400 – Thermoplastic Membrane Roofing.

1.03 HAZARDOUS MATERIALS PROCEDURE

A. Asbestos:

1. The Roofing Contractor shall refer to item 6 below for the removal of roofing materials.

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 Roofing Contractor discover or encounter any ACM during the performance of the work, the Roofing 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 Roofing 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 Roofing Contractor shall designate one of its senior on-site employees to be in charge of coordination between the Architect and the Roofing Contractor with respect to hazardous materials issues.

5. Responsibility for Hazardous Material Discovery: It is the sole responsibility of the Roofing Contractor 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. Roofing material was found to contain asbestos including but not limited to, curb tar/gravel flashing (6% Asbestos), old roof flashing mastic (4% Asbestos), old roof tar paper flashing (2% Asbestos), wood cornice caulking (5% Asbestos) and roof chimney caulking (2% Asbestos). The Roofing Contractor shall own the removal and disposal of all roofing materials as asbestos at no additional cost to the Owner in accordance with all federal and state regulations. The Roofing Contractor is solely responsible for notifications, means and methods, and techniques used to properly remove and dispose of the material. It is also the Roofing Contractor's responsibility to comply with DEP 310CMR 7.15 regulations, including the preparation of the non-traditional work abatement plan for DEP approval.

7. Indemnification: To the fullest extent permitted by law, the Roofing 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 if attributable to bodily injury, sickness, disease or death, or to damage to or destruction of tangible property (other than the Work itself) including the lose of use resulting therefrom; and is caused in whole or in part by any negligent act or omission of the Roofing 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 Roofing Contractor shall be made aware that Lead Based Paint exists on painted surfaces.

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 Roofing Contractor is solely responsible for means and methods, and techniques used for demolition and lead control. The Roofing Contractor shall collect and control lead contaminated debris and to properly remove and dispose of lead contaminated soil around the building due to removal activities.

4. The Roofing 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 Roofing 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 Roofing Contractor shall at own cost and expense perform all required testing of waste by the TCLP. The Roofing 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 Roofing 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.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

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 roof area 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.

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 cover open shelving, office and classroom equipment, and furniture, 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 designate 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.

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.

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.

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 and Filed Sub-bid Contractors 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.

4. Exterior door frame replacement.

5. Equipment support curbs and sleepers.

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.

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 9119

ROOFING COMMISSIONING 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 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
CxA	Building Enclosure Commissioning Agent
Cx	Commissioning
Cx Plan	Commissioning Plan
MSBA	Massachusetts School Building Authority
FPC	Functional Performance Testing
GC	General Contractor
OPM	Owner’s Project Manager
PFC	Prefunctional Checklist
Subs	Subcontractors to General Contractor

1.03 COORDINATION

A. Commissioning Team. The members of the commissioning team consist of the Halifax Public Schools, the Owner's Project Manager (OPM), Commissioning Agent (CxA), Massachusetts School Building Authority (MSBA), the architect and design engineers (DOR), the Contractor (GC) any other installing subcontractors.

B. Management. The CxA is hired by the Massachusetts School Building Authority (MSBA) directly. The CxA 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 CxA's responsibilities are the same regardless of who hired the CxA.

C. Scheduling. The CxA will work with the GC according to established protocols to schedule the commissioning activities. The CxA 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 CxA 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 CxA. The Commissioning Plan also provides a format for detailed schedules.

1.04 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 CxA 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 CxA where the commissioning process is reviewed with the commissioning team members. All commissioning tests are specified in the respective technical specification sections. Commissioning shall include testing specified below in 1.05 F. 2.

2. Additional meetings will be required throughout construction, attended by the CxA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.

3. Product documentation is submitted to the CxA during the normal submittals process, including detailed test procedures, shop drawings, and product literature.

4. The CxA 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 CxA witnessing testing of selected assemblies.

6. The CxA develops specific assembly performance test requirements. The GC and Subs develop the specific assembly performance test procedures for the CxA to review.

7. The procedures are executed and documented by the GC and Subs, under the direction of, and observed by the CxA.

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 CxA 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 CxA where the building envelope review process is reviewed with the team members.

2. Additional meetings will be required throughout construction, attended by the CxA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.

3. Building envelope documentation is submitted to the CxA during the normal submittals process, including detailed installation procedures, shop drawings and product literature.

4. The CxA 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 CxA 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 CxA 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 CxA. 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 CxA 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.

1.05 RESPONSIBILITIES

A. The responsibilities of various parties in the commissioning process and building envelope review process are provided in this section.

B. <u>All Parties</u>

1. Follow the Commissioning Plan.

2. Attend commissioning scoping meeting and additional meetings, as necessary.

C. <u>DOR</u> - 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 CxA.
   d. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to building envelope systems to the CxA.
   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 CxA as necessary in the deficiency corrections required by the specifications.

D. Building Envelope Commissioning Authority (CxA)

1. The CxA is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The CxA 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 CxA 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.

2. *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, CxA, OPM and of the GC.
   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 CxA and with the OPM and CxA, 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 CxA, 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 CxA 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.

2. *Testing*
   a. Set-up, perform and complete commissioning tests except any testing specifically designated as provided by the CxA. [The cost of fastener pullout testing, and system uplift testing of fully adhered roofing membrane systems shall be paid for by the contractor.]
      1) ASTM E907 - 96(2004) Standard Test Method for Field Testing Uplift Resistance of Fully Adhered Membrane Roofing Systems, shall be performed on roofing systems using adhesive to hold the roofing system to the deck.
      2) Prior to the start of the roofing work two (2) tests shall be performed at each roof area included in the scope of the project. The texts shall be performed at a mockup area of a “corner area” and an “edge area” at a Factor of Safety of 2.0, as well as on different roofing assemblies, to determine the effectiveness of the installation.
      3) Upon completion of the work, three (3) test shall be performed at a Corner, Edge and Field Area at each roof area included in the scope of the project. The tests shall be performed at Factor of Safety of 1.25 to verify that the roofing system is performing satisfactorily. These areas will be selected at random by the CxA.
      4) Testing costs, repairs to failed test areas and consequences of failed test results shall be borne solely by the Contractor at no additional cost to the owner.

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 CxA, 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 CxA 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.

1.06 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 (CxA) - 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 CxA directs and coordinates the day-to-day commissioning activities. The CxA does not take an oversight role like MSBA or the DOR. The CxA 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 CxA 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 CxA 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 CxA.

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.

1.07 SYSTEMS TO BE COMMISSIONED

A. The following systems will be commissioned in this project. See Commissioning Plan for additional information.

1. Membrane and Asphalt Shingle Roofs

1.08 BUILDING ENVELOPE COMPONENTS TO BE REVIEWED

A. The following components of the building envelope will be reviewed by the CxA in this project as may be applicable.

1. Membrane and Asphalt Shingle Roofs

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 system or material being tested. For example, the Contractors of Division 7 work shall ultimately be responsible for all roof alterations 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 CxA 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 CxA 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 CxA as construction progresses. These meetings will cover coordination, deficiency resolution and planning issues with particular Subs. The CxA will attended 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 CxA 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 CxA will provide a report to the OPM and MSBA.

C. The CxA 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 CxA 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 CxA in developing the procedures review (answering questions about equipment, operation, sequences, etc.). Prior to execution, the CxA shall identify the test procedures to the Sub(s) who shall review the tests for feasibility, safety, equipment and warranty protection. The CxA 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 CxA regarding their completion schedule for the prefunctional checklists of all assemblies. The CxA will schedule functional performance tests through the OPM and affected Subs. The CxA shall direct, witness and document the functional performance testing of all equipment and systems. The Subs shall execute the tests.

E. Problem Solving. The CxA 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 CxA 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 CxA will include the filled out forms with the turnover documents.

B. Non-Conformance.

1. The CxA 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 CxA. 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 CxA 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 CxA 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 CxA 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 CxA.
      2) The CxA 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 CxA 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 CxA. The CxA reschedules the test and the test is repeated until satisfactory performance is achieved.

6. The Contractor shall respond in writing to the CxA 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.

7. The CxA retains the original non-conformance forms until the end of the project.

8. 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 CxA notes each satisfactorily demonstrated function on the test form. Formal approval of the functional performance test is made later after review by the CxA and by the MSBA, if necessary. The CxA 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 1.08 - 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 CxA may assist the contractors responsible for assembling of any mock-up configurations in developing detailed mock-up evaluation program. The primary role of the CxA 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 CxA 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 CxA for review and approval.

3. The CxA 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 CxA.

3. The CxA shall inspect each mock-up and observe any required testing. Testing is performed by the installing contractor.

4. The CxA 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 CxA 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 CxA within two days of test completion.

2. The CxA reviews the report and submits either a non-compliance report or an approval form to the Sub or OPM. The CxA shall work with the Subs and vendors to correct and retest deficiencies or uncompleted items. The CxA 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 CxA as soon as outstanding items have been corrected. When satisfactorily completed, the CxA 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. CxA Review: Prior to substantial completion, the CxA shall review the O&M manuals, documentation for systems that were commissioned to verify compliance with the Specifications. The CxA will communicate deficiencies in the manuals to the OPM, MSBA or DOR, as requested.

B. Commissioning Manuals

1. Commissioning Record Data. The CxA 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.

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 roofing systems: shingles, underlayment, roof membranes, membrane flashings, insulation, wood blocking, and sheet metal flashings as required for new work shall be performed by or coordinated and supervised by the roofing contractor. Demolition of the existing roofing should be phased and planned as to remove only as much roofing that can be roofed with new membrane or shingles and insulation systems and made watertight in the same day.

1. Contractor is required to remove, contain, recover and dispose of all roofing 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. Remove the roofing material without sanding, sawing, grinding or drilling. Slicing/cutting is permitted.
   c. Remove all roofing 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 roofing material from the work area and properly segregate and containerize for transport. The non-friable asbestos containing debris should be disposed at an approved landfill for non-friable asphalt based roofing material. Waste disposal manifests are required for closeout submissions.

2. Removal and legally disposal 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.

4. Removal of courtyard trees and stumps. See Drawing G-002.

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.

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 05 3100

STEEL DECKING

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. Removal and replacement of deteriorated decking:

1. Removal of existing damaged perlite gypsum deck and replacement with new metal deck.
2. Removal of existing deteriorated metal roof deck and replacement with new metal roof deck.

B Unit Prices: Provide unit prices to provide labor, materials and equipment to complete the work of this section under the provisions of Section 01 2200 – Unit Prices.

1.03 RELATED REQUIREMENTS

A. Section 07 5400 – Thermoplastic Membrane Roofing.

1.04 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

B. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished; 2013.

C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2013.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2013.

E. ASTM A1008/A1008M - 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; 2013.

F. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2013.

G. ASTM E384 - Standard Test Method for Knoop and Vickers Hardness of Materials; 2011e1.

H. AWS D1.1/D1.1M - Structural Welding Code - Steel; American Welding Society; 2011 w/Errata.

I. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel; American Welding Society; 2008.

J. ICC-ES AC70 - Acceptance Criteria for Fasteners Power Driven into Concrete, Steel and Masonry Elements; ICC Evaluation Service, Inc.; 2013.

K. SDI (DM) - Publication No.31, Design Manual for Composite Decks, Form Decks, Roof Decks; Steel Deck Institute; 2007.

L. SSPC-Paint 15 - Steel Joist Shop Primer; The Society for Protective Coatings; 1999 (Ed. 2004).

M. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); The Society for Protective Coatings; 2002 (Ed. 2004).

N. V. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.05 SUBMITTALS

A. See Section 01 3000 – Administrative Requirements.

B. Shop Drawings: Indicate deck plan, support locations, projections, openings, reinforcement, pertinent details, and accessories.

C. Certificates: Certify that products furnished meet or exceed specified requirements.

D. Submit manufacturer's installation instructions.

E. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within the previous 12 months.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Steel Deck:

1. New Millenium Building Systems.

2. Nucor-Vulcraft Group.

3. Metal Deck Supply.

4. Substitutions: See Section 01 6000 – Product Requirements.

2.02 STEEL DECK

A. Roof Deck: Non-composite type, fluted steel sheet:

1. Galvanized Steel Sheet, with G90/Z275 galvanized coating.

2. 1-1/2” deep, 22 gage, Type B (Intermediate Rib). Field verify. Match thickness and profile of existing steel decking.

2.03 ACCESSORY MATERIALS

A. Bearing Plates and Angles: ASTM A36/A36M steel, unfinished.

B. Fasteners: Galvanized hardened steel, self tapping.

C. Powder Actuated Mechanical Fasteners: Steel; with knurled shank and forged ballistic point. Comply with applicable requirements of ICC-ES AC70.

1. Fasten deck at 12” o.c. along support.

D. Mechanical Fasteners: Steel; hex washer head, self-drilling, self-tapping.

1. Design Requirements for Sidelap Connections: Provide minimum #8 fastener, 2 per span.

2. Fasteners for Steel Roof Decks Protected with Waterproofing Membrane: ASTM B 633, SC1, Type III zinc electroplate.

E. Weld Washers: Mild steel, uncoated, 3/4 inch outside diameter, 1/8 inch thick.

F. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

G. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, complying with VOC limitations of authorities having jurisdiction.

2.04 FABRICATED DECK ACCESSORIES

A. Sheet Metal Deck Accessories: Metal closure strips and cover plates, 22 gage, 0.0299 inch thick sheet steel; of profile and size as indicated; finished same as deck.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify existing conditions prior to beginning work.

3.02 INSTALLATION

A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.

B. On steel supports provide minimum 1-1/2 inch bearing.

C. Fasten deck to steel support members at ends and intermediate supports parallel with the deck flute and at each transverse flute using methods specified.

D. At mechanically fastened male/female side laps fasten at 24 inches on center maximum.

E. Drive mechanical sidelap connectors completely through adjacent lapped sheets; positively engage adjacent sheets with minimum three-thread penetration.

F. Weld deck in accordance with AWS D1.3/D1.3M.

G. At openings between deck and walls, columns, and openings, provide sheet steel closures and angle flashings to close openings.

H. Close openings above walls and partitions perpendicular to deck flutes with single row of foam cell closures.

I. Place metal cant strips in position and fusion weld.

J. Position roof drain pans with flange bearing on top surface of deck. Fusion weld at each deck flute.

K. Immediately after welding deck and other metal components in position, coat welds, burned areas, and damaged surface coating, with touch-up primer.

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 the Division 1 – 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 roof replacement.
2. Replacement of deteriorated plywood and wood plank decking. See Section 01 2200 – Unit Prices.
3. Blocking and sheathing for infill of openings at all existing soffit vents and gable-end vents.
4. Removal and replacement of water damaged ACT ceiling tiles/ 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 07 2400 – Exterior Insulation Finish Systems.
2. Section 07 3113 – Asphalt Shingles.
3. Section 07 4646 – Fiber Cement Siding.
4. Section 07 5400 – Thermoplastic Membrane Roofing.
5. Section 07 6200 – Sheet Metal Flashing and Trim.
6. Section 07 7200 – Roof Accessories.
7. Section 08 1113 – Hollow metal Doors and Frames.

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. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. 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: AWPA C2.

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 AWPA C20 (lumber) and AWPA C27 (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. Rooftop equipment bases and support curbs.

2. Blocking.

3. Cants.

4. Nailers.

5. Furring.

6. Grounds.

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 ROOF SHEATHING

A. Plywood Roof 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 galavanized 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.

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 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. Cellular PVC trim boards for repairs to existing architectural wood trim at roof edges, soffits, horizontal and vertical trim. Refer to the Drawings for specific locations.

2. 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 06 1000 **–** Rough Carpentry for the installation of required blocking and sheathing.

2. Section 07 9200 – Joint Sealants: sealing of trim and joints.

3. 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 furninsh 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.

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: For asphalt shingles to include in 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: ± 1/16”
3. Variation in component thickness: ± 1/16”
4. Variation in component edge cut: ± 2°
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.

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. Koma® Celuka manufactured by Koma® Building Products, 3402 Stanwood Boulevard, Huntsville, AL 35811, 1800-330-2239.
3. Duraboard manufactured by Ply-Trim, Inc., 550 N. Meridan road, Youngstown, OH 44509, 1-800-ply-trim
4. Nels-Tek 600 manufactured by New England Lumber Specialties, 202 Day Street, West Springfield, MA 01089
5. Trimplank manufactured by Royal Group Technologies, 10249 Hoover Woods Road, Galena, OH 43021
6. Never Rot manufactured by Royal Mouldings, P.O. Box 610, Marion, VA 24354, 1800-368-3117

B. Material: Expanded rigid poly vinyl chloride material with a small-cell microstructure and density of .55 grams/cm3.

2.02 ACCESSORY PRODUCTS

A. Fasteners: Fasteners shall be #8, Grade 305 stainless steel finish screws recovered 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.

D. Ice And Water Shield Membrane (Synthetic Underlayment):

1. Self-adhering, self sealing, bituminous barrier surfaced with a smooth polyethylene film. Approved by UL, Dade County, ICC, State of Florida and Texas Department of Insurance. 36" X 66.7' (0.9m x 20.3m), and 60 mils thick, self sealing. Grace Ice and Water Shield self-adhered roofing underlayment or approved equal.

E. Self-Adhered Air/Vapor Retarder:

1. Premium, water repellant, breather type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceeds ASTM D226 and D4869. Approved by Dade Country, Florida Building Code, and ICC.. Deck-Armor™ Premium Breathable Roof Deck Protection, by GAF or approved equal.

2.03 FINISHES

A. Preparation:

1. Clean, Dry surface

2. Countersunk Screw heads to be finished with plugs of the cellular PVC material as supplied by the manufacturer to match color of cellular PVC material.

3. Sand plugs smooth to touch and provide a painted finish.

4. Paint per Section 09 9000 Painting and Coatings, color white to match existing PVC trim.

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.

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.

END OF SECTION

SECTION 07 0150

PREPARATION FOR RE-ROOFING

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. Work Includes:

1. Roof tear-off, low-slope and steep-slope on the entire building, including roofing with asbestos containing materials.
2. Removal of all existing roof-related wood curbs and blocking.
3. Roof re-cover preparation.
4. Removal of base flashings.
5. Temporary roof protection.
6. All hoisting and scaffolding for completion of work.
7. Waste disposal.

B. Related Sections:

1. Section 01 1000 – Summary for use of the premises and phasing requirements.
2. Section 01 5000 – Temporary Facilities and Controls.
3. Section 01 3543 – Environmental Procedures.
4. Section 02 4100 – Demolition.
5. Section 06 1000 – Rough Carpentry.
6. Section 07 3113 – Asphalt Shingles
7. Section 07 5400 – Thermoplastic Membrane Roofing.
8. Section 22 0000 – Plumbing.
9. Section 23 0001 – HVAC.
10. Section 26 0001 – Electrical.

1.03 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.04 DEFINITIONS

A. Schedule Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Existing Membrane Roofing System: Roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.

C. Roof Tear-Off: Removal of existing membrane roofing system from deck.

D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.

E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.05 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Photographs: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

C. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

D. Qualification Data: For Installer, including certificate that Installer is licensed to perform asbestos abatement.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Installer of new membrane roofing system, licensed to perform asbestos abatement in the Commonwealth of Massachusetts.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Reroofing Conference: Conduct conference at Project site.

1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof mounted equipment.

2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
   a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
   b. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging and plug removal requirements.
   c. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   d. Existing deck removal procedures and Owner notifications.

e. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
f. Structural loading limitations of deck during reroofing.
g. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.
h. HVAC shutdown and sealing of air intakes.
i. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
j. Asbestos removal and discovery of asbestos-containing materials.
k. Governing regulations and requirements for insurance and certificates if applicable.
l. Existing conditions that may require notification of Architect before proceeding.

1.07 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations are not disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.

1. Coordinate work activities daily with Owner so Owner can place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.

2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.

B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

D. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical

1. The results of an analysis of test cores from existing membrane roofing system are included in Section 00 3126 for Contractor’s reference.

E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

F. Hazardous Materials: Present in building to be reroofed. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.

2. Do not disturb hazardous materials or items suspected of containing hazardous materials except according to procedures specified in the Contract Documents.

3. Coordinate with hazardous material remediation subcontractor to prevent water from entering existing roofing system or building.

PART 2 – PRODUCTS

2.01 TEMPORARY PROTECTION MATERIALS

A. Expanded Polystyrene (EPS) Insulation: ASTM C 578.

B. Plywood: DOC PS1, Grade CD Exposure 1.

C. OSB: DOC PS2, Exposure 1.

2.02 AUXILIARY ROOFING MATERIALS

A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new roofing system

PART 3 – EXECUTION

3.01 PREPARATION

A. Prior to removal operations, examine all interior and exterior conditions. Identify and accommodate existing assemblies anchored to existing substrates and/or impacted by removal operations.

B. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

D. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.02 ROOF TEAR-OFF

A. General: Notify Owner's Representative each day of extent of roof tear-off proposed for that day.

B. Remove aggregate ballast associated with existing BUR roofing to be removed below existing membrane roof insulation.

C. Roof Tear-Off: Remove existing BUR roofing and other overlaid membrane roofing systems and components down to the deck.

1. Remove cover boards, roof insulation and substrate boards as occurs.

2. Remove fasteners from deck.

3. Remove all existing roofing materials down to existing deck.
   a. Ensure substrate is dry and free of loose debris prior to installation of new roofing materials.

D. Remove only as much existing roofing as can be replaced and made weathertight each day, including all flashing work.

3.03 DECK PREPARATION

A. General: Inspect deck with the OPM after tear-off of membrane roofing system, and shingle roof systems.

B. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached or deteriorated, immediately notify Architect. Do not proceed with installation until directed by Architect.

C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

D. Replace deck as required, per Unit Prices of Section 01 2200.

3.04 EXISTING BASE FLASHINGS

A. Remove existing base flashings around parapets, curbs, walls, and penetrations.

1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

B. Do not damage metal counter-flashings that are to remain. Replace metal counter-flashings damaged during removal with counter-flashings specified in Division 07 Section 07 54 00 - Thermoplastic Membrane Roofing.

C. Inspect sheathing for deterioration and damage. If sheathing has deteriorated, immediately notify Architect.

3.05 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

1. Storage or sale of demolished items or materials on-site is not permitted.

B. Separate, salvage, recycle, and dispose of materials in accordance with Commonwealth of Massachusetts “Waste Ban” 310 CMR 19.017.

C. Transport and legally dispose of demolished materials off Owner's property.

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.

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.

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.rhinolinings.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.

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 2400

EXTERIOR INSULATION AND FINISH SYSTEMS

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. Installation of new EIFS finish on plywood at existing false chimneys, Type CH-2 as indicated on Drawings.

1.03 RELATED REQUIREMENTS

A. Section 06 1000 – Rough Carpentry: Plywood substrate.

B. Section 07 6200 – Sheet Metal Flashing and Trim: Perimeter flashings and coping caps.

C. Section 07 3113 – Asphalt Shingles.

D. Section 07 5400 – Thermoplastic Membrane Roofing.

E. Section 07 9200 – Joint Sealants: sealing between dissimilar materials.

1.04 REFERENCE STANDARDS

A. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus; 2011.

B. ASTM C1397 - Standard Practice for Application of Class PB Exterior Insulation and Finish Systems (EIFS) and EIFS with Drainage; 2009.

C. ASTM D968 - Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive; 2005 (Reapproved 2010).

D. ASTM D2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity; 2011.

E. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.

F. ASTM E2273 - Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies; 2003 (Reapproved 2011).

G. ICC-ES AC219 - Acceptance Criteria for Exterior Insulation and Finish Systems; 2009.

1.05 SUBMITTALS

A. See Section 01 3300 – Submittal Procedures.

B. Product Data: Provide data on system materials, product characteristics, performance criteria, and system limitations.

C. Selection Samples: Submit manufacturer's standard range of samples illustrating available coating colors.

D. Verification Samples: Submit actual samples of selected coating minimum 12 inches square, illustrating project colors and textures.

E. Manufacturer's Installation Instructions: Indicate preparation required, installation techniques, and finishing requirements.

1.06 QUALITY ASSURANCE

A. Maintain copy of specified installation standard and manufacturer's installation instructions at project site at all times during installation.

B. Installer Qualifications: Company specializing in EIFS work, with minimum three years of experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to project site in manufacturer's original, unopened containers with labels intact. Inspect materials and notify manufacturer of any discrepancies.

B. Storage: Store materials as directed by manufacturer's written instructions.

1.08 FIELD CONDITIONS

A. Do not prepare materials or apply EIFS finish coatings under conditions other than those described in the manufacturer's written instructions.

B. Do not apply EIFS finish coatings during inclement weather unless areas of installation are protected. Protect installed EIFS finished areas from inclement weather until dry.

C. Do not install coatings or sealants when ambient temperature is below 40 degrees F.

1.09 WARRANTY

A. See Section 01 7000 – Execution and Closeout Requirements, for additional warranty requirements.

B. Provide manufacturer's standard finish material warranty, covering a period of not less than 5 years.

PART 2 – PRODUCTS

2.01 EXTERIOR INSULATION AND FINISH SYSTEM

A. Fire Characteristics:

1. Flammability: Pass, when tested in accordance with NFPA 285.

2. Ignitibility: No sustained flaming when tested in accordance with NFPA 268.

B. Water Penetration Resistance: No water penetration beyond the plane of the base coat/insulation board interface after 15 minutes, when tested in accordance with ASTM E331 at 6.24 psf differential pressure with tracer dye in the water spray; include in tested sample at

least two vertical joints and one horizontal joint of same type to be used in construction; disassemble sample if necessary to determine extent of water penetration.

C. Drainage Efficiency: Average minimum efficiency of 90 percent, when tested in accordance with ASTM E2273 for 75 minutes.

D. Salt Spray Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 300 hours exposure in accordance with ASTM B117, using at least three samples matching intended assembly, at least 4 by 6 inches in size.

E. Freeze-Thaw Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 10 cycles, when tested in accordance with ICC-ES AC219 or AC235.

F. Weathering Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 2000 hours of accelerated weathering conducted in accordance with ASTM G153 Cycle 1 or ASTM G155 Cycle 1, 5, or 9.

G. Water Degradation Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 14 days exposure, when tested in accordance with ASTM D2247.

H. Mildew Resistance: No growth supported on finish coating during 28 day exposure period, when tested in accordance with ASTM D3273.

I. Abrasion Resistance Of Finish: No cracking, checking or loss of film integrity when tested in accordance with ASTM D968 with 500 liters of sand.

J. Rainscreen system with concealed water drainage channels.

K. Manufacturers:

1. Sto Corporation

2. Dryvit Systems Inc.

3. Parex USA

4. Substitutions: See Section 01 6000 – Product Requirements.

2.02 MATERIALS

A. Finish Coating Top Coat: Water-based, air curing, acrylic or polymer-based finish with integral color and texture.

1. Texture: Fine.

2. Color selected by Architect from EIFS manufacturer’s standard colors.

B. Plywood backer board, type as stipulated by EIFS manufacturer.

C. Fiberglass reinforcing mesh.

2.03 ACCESSORY MATERIALS

A. Sealant Materials: Compatible with EIFS materials and as recommended by EIFS manufacturer.

PART 3 – EXECUTION

3.01 GENERAL

A. Install finish coating in accordance with EIFS manufacturer's instructions and ASTM C1397.

B. Where different requirements appear in either document, comply with the most stringent.

C. Neither of these documents supercedes the provisions of the Contract Documents that define the contractual relationships between the parties or the scope of work.

3.02 EXAMINATION

A. Verify that existing coating substrate is sound and free of oil, dirt, other surface contaminants, efflorescence, loose materials, or protrusions that could interfere with new EIFS coating installation and is of a type and construction that is acceptable to EIFS manufacturer. Do not begin work until substrate and adjacent materials are complete and thoroughly dry.

3.03 INSTALLATION - FINISH

A. Apply finish coat to a uniform texture and color.

B. Finish Coat Thickness: 1/16 inch.

C. Seal control and expansion joints within the field of exterior finish and insulation system, using materials and procedures recommended by sealant and finish system manufacturers.

3.04 CLEANING

A. Clean EIFS surfaces and work areas of foreign materials resulting from EIFS operations.

3.05 PROTECTION

A. Protect completed work from damage and soiling by subsequent work.

END OF SECTION

SECTION 07 3113

ASPHALT SHINGLES

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, equipment, temporary protection, tools and appliances including hoisting and scaffolding necessary for the proper completion of the work as required in the Specifications, in accordance with good roofing practice, and as required by the materials manufacturer; including but not limited to the following:

1. Demolition and legal disposal of existing roofing. See Section 02 4100 – Demolition.
2. Asphalt shingles, including starter-strip and ridge shingles.
3. Ventilated Nailbase Insulation Panels.
4. Ridge vents.
5. Fascia vents.
6. Off-Ridge vents.
7. Ice and water shield membrane (synthetic underlayment).
8. Self-adhered air/vapor retarder.
9. Expansion joint bellows.
10. Roofing cement.
11. Sheet Metal Flashing and Trim. See Section 07 6200 – Sheet Metal Flashing and Trim.
12. Clean and restore all areas affected by the work.

B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:

1. Section 02 4100 – Demolition
2. Section 06 1000 – Rough Carpentry
3. Section 07 0150 – Preparation for Re-Roofing
4. Section 0 76200 – Sheet Metal Flashing and Trim

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 furninsh authorized hard copies to the Clerk of Works (CoW) and Town of Halifax for their records. Refer to Section 01 3000 – 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.

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 asphalt shingle indicated.

F. Samples for Verification: For the products specified.

G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency or by manufacturer and witnessed by a qualified testing agency, for asphalt shingles.

H. Maintenance Data: For asphalt shingles to include in maintenance manuals.

I. Warranties: Special warranties specified in this Section.

J. Manufacturer's installation instructions to meet impact resistance and wind uplift requirements.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual that is approved, authorized, or licensed by asphalt shingle roofing system manufacturer to install roofing system indicated.

B. Fire-Test-Response Characteristics: Provide asphalt shingle and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

   1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.

C. Wind-Resistance-Test Characteristics: Provide asphalt shingles and related products identical to those tested according to ASTM D7158 and passed. Identify each bundle of asphalt shingles with appropriate markings of applicable testing and inspecting agency.

   1. Wind Resistance Ratings: 120 mph basic wind speed; classification requirement G or H.

D. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01. Review requirements for reroofing, including surface preparation specified under other Sections, substrate condition, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.

1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.

B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.06 PROJECT CONDITIONS

A. Environmental Limitations: Apply shingles within the range of ambient and substrate temperatures recommended by shingle manufacturer. Do not apply shingles to a damp or wet substrate.

B. Do not apply shingles in snow, rain, fog, or mist.

C. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle roofing to be performed according to manufacturer’s written instructions and warranty requirements.

1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

D. The Owner's Representative shall review the Contractor's work schedule submittal prior to the start of any work in this Section. After defining the locations of the work progress, the Owner shall notify the occupants in the building area(s) below each day's work. It shall be the responsibility of the Contractor to inform the Owner's Representative if his work location(s) for each day is different from the schedule and to update any changes into the schedule.

E. The building and site will be occupied and in use during the construction. The Contractor shall take all precautions necessary to protect persons and property and create as little disruption as possible.

F. Remove only as much existing roofing as can be replaced and made weathertight each day, including all flashing work.

G. Schedule and execute all work without exposing the interior building areas to the effects of inclement weather. Protect the existing buildings and contents against all risks, and repair or replace all damage to the Owners satisfaction. Protect all exterior lighting, landscape areas, adjacent buildings, and pavement from damage.

H. Shingles shall not be applied when ambient temperature is less than 40 degrees F unless approved in writing by the Engineer and manufacturer. All cold weather application procedures and cautions of the manufacturer shall be strictly followed should any applications be undertaken in such weather conditions.

I. All surfaces to receive the new underlayments, shingles or flashings shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. Do not dry with open flames.

J. All new and temporary construction, including equipment and accessories, shall be secured from wind damage or blowoff.

K. The Contractor shall provide all necessary temporary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Also provide plywood protection for roof areas (existing or new) affected by demolition or other work.

1.07 WARRANTY

A. Provide to the owner a System Warranty covering:

1. Manufacturing defects: 100% coverage for materials and labor for: 50 years non-prorated, then 20% thereafter for all shingles.

2. Warranted against algae discoloration for 10 years.

B. Special Project Warranty: Roofing Installer's Warranty, signed by roofing Installer, covering the Work of this Section, in which roofing Installer agrees to repair or replace components of asphalt shingle roofing , flashings, and underlayment that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

1.08 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Asphalt Shingles: 100 sq. ft of each type, in unbroken bundles.

PART 2 – PRODUCTS

2.01 MANUFACTURERS:

A. Landmark Premium by Ceetainteed

B. Heritage Premium by TAMKO

C. Timberline Ultra HD by GAF

D. Or Approved Equal

2.02 SHINGLES

A. 50 year warranty, heavyweight, granule surfaced, self sealing asphalt shingle with a strong fiberglass reinforced Micro Weave® core and a mineral granule surfacing. Architectural laminate styling with a 5” or 5 5/8” exposure. UL 790 Class A rated with UL 997 Wind Resistance Label; ASTM D 7158, Class H; ASTM D 3161, Type 1; ASTM D 3018, Type 1; ASTM D 3462; CSA A123.5-98; Dade County Approved, Florida Building Code Approved, Texas Dept of Insurance Approved, ICC Report Approval, Title 24 compliant and Energy Star compliant. Timberline® Cool Series Energy-Saving Architectural Shingles, by GAF or approved equal.

1. Starter shingles and ridge caps are to be supplied by the same shingle manufacturer.

2. Color: As selected from manufacturers’ full range.

2.03 RIDGE SHINGLES

A. High profile self-sealing ridge cap shingle matching the color of selected roof shingle. Timbertex® Premium Ridge Cap Shingles, by GAF or approved equal.

2.04 STARTER STRIP

A. Self sealing starter shingle designed for all roof shingles. ProStart™ Starter Strip by GAF or approved equal.

2.05 ICE AND WATER SHIELD MEMBRANE (SYNTHETIC UNDERLAYMENT)

A. Self-adhering, self sealing, bituminous barrier surfaced with a smooth polyethylene film. Approved by UL, Dade County, ICC, State of Florida and Texas Department of Insurance. 36" X 66.7' (0.9m x 20.3m), and 60 mils thick, self sealing. Grace Ice and Water Shield self-adhered roofing underlayment or approved equal.

3

2.06 AIR/VAPOR RETARDER

A. Premium, water repellant, breather type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceeds ASTM D226 and D4869. Approved by Dade Country, Florida Building Code, and ICC.. Deck-Armor™ Premium Breathable Roof Deck Protection, by GAF or approved equal.

2.07 ROOFING CEMENT

A. Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

2.08 ROOF ACCESSORIES

A. Exterior acrylic rust resistant aerosol roof accessory paint. Shingle-Match™ Roof Accessory Paint by GAF or approved equal.

B. Expansion joint bellows: metalastic expansion joint cover, low-cant to cant style, by GAF or approved equal.

2.09 ATTIC VENTILATION

A. Ridge Vents

1. Rigid plastic ridge ventilator designed to allow the passage of hot air from attics while prohibiting snow infiltration. For use in conjunction with eave/ soffit intake ventilation products. Provides 18.0 sq inches (11613 sq.mm/m) NFVA per lineal foot. . Cobra® Snow Country™ or Cobra® Snow Country Advanced™ Ridge Vent (includes 3" (76mm) galvanized ring shank nails), by GAF or approved equal.

3

B. Fascia and Soffit/Under Eave Vents

1. Aluminum .032 custom formed vented drip edge. Provide custom profiles for roof edge condition. Vented drip edge shall provide a HFVA of 11 square inches per foot.

C. Linear Off Ridge Air Intake Vents

1. Cor-A-Vent, Inc. "In-Vent" or approved equal.

2.10 NAILS

A. Standard round wire, zinc-coated steel or aluminum; 10 to 12 gauge, ring shank nails, with heads 3/8 inch (9mm) to 7/16 inch (11mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through plywood by at least 1/8 inch (3.18mm).

2.11 VENTILATED NAILBASE INSULATION PANELS

A. Cool-Vent, ventilated nailbase insulation panel as manufactured by Hunter Panels or approved equal. Product to meet or exceed Factory Mutual Approval FM 4450 and FM 4470. Substrate to be 5/8" CDX plywood. Insulation shall be R-30 minimum polyisocyanurtate. Spacer shall be solid wood. Provide appropriate fasteners and plates to resist code required up-lift. Provide clips to interlock panels to one other.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Do not begin installation until the roof deck has been properly prepared. Prepare roof deck for installation of roof system.

3.02 PREPARATION

A. Remove all existing roofing down to the roof deck.

B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Verify roof deck is securely fastened to structure and free of rot and damage. Cover with sheet metal, all holes over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.

C. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.

3.03 VENTILATED NAILBASE INSULATION PANELS

A. Install panels with the wood (OSB/Plywood) side face up. Place panels in the manufacturers recommended pattern. Only factory assembled panels will be accepted. Fasten panels through the top nailable surface and also through the wood block panel spacers using Hunter Panels approved threaded fasteners.

B. For multiple layered installations, install the base layer of panels loose-laid, and stagger the joints of subsequent layers in accordance with good roofing practice.

C. Provide fasterners in accordance with manufacturer's instructions for roof pitch.

D. Trim panels at ridge in accordance with manufacturer's instructions for installation of ridge vent as specified herein.

3.04 FLASHINGS AND ICE AND WATER SHIELD MEMBRANE UNDERLAYMENT

A. General

1. Install using methods recommended by roof shingle manufacturer and in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.

B. Eaves

1. Install vented eave edge metal flashing as recommened by ventilated nailboard manufacturer; lap joints 2 inches (51mm) and seal with plastic cement or high quality urethane sealant; nail at the top of the flange.

2. Install ice and water shield membrane underlayment up the slope from eaves edge and underneath all roof areas with asphalt shingle roofing. Lap ends 6 inches (152mm) and bond.

C. Valleys

1. Install ice and water shield membrane to within 6” of valley centerline.

2. Install high temperature ice and water shield membrane at least 36 inches wide and centered on the valley. Overlap ends and edges 6 inches and seal.

3. Install stainless steel sheet 3 foot wide flashing centered on the valley. Secure with nails 18” oc at top edges only.

4. Install high temperatue ice and water shield strip flashing to seal the metal flashing to membrane underlayment. Overlap 6” minimum.

5. Install asphalt shingles starting 3 inches from the valley centerline.

D. Ridges

1. Install ice and water shield membrane underlayment along entire lengths. If ridge vents are to be installed, position the ice and water shield membrane underlayment so that the ridge slots will not be covered.

E. Roof Deck

1. Install one layer of ice and water shield membrane over the entire nailable roof deck. Install sheets horizontally with lapped edges so water sheds.

2. On roofs sloped at more than 4 in 12, lap horizontal edges at least 2 inches (51mm) and at least 2 inches (51mm) over eaves protection membrane.

3. On roofs sloped between 2 in 12 and 4 in 12, lap horizontal edges at least 19 inches (482 mm) and at least 19 inches (482mm) over eaves protection membrane.

4. Lap ends at least 4 inches (102 mm). Stagger end laps of each layer at least 36 inches (914 mm).

F. Shingle underlayment Application

1. Shingle ice and water shield underlayment shall be installed over a clean, dry deck underneath all asphalt shingle roofing.

2. Overlap ice and water shield underlayment 6 inch minimum at edges, and in accordance with manufacturer recommendations.

G. Penetrations

1. Vent pipes: Install a 24 inch (610 mm) square piece of eaves protection membrane lapping over roof deck underlayment; seal tightly to pipe.

2. Vertical walls: Install eaves protection membrane extending at least 6 inches (152mm) up the wall and 12 inches (305mm) on to the roof surface. Lap the membrane over the roof deck underlayment.

3. Roof hatch: Install eaves protection membrane from under the built-in counter flashing and 12 inches (305mm) on to the roof surface lapping over roof deck underlayment.

4. Chimneys: Install eaves protection membrane around entire chimney extending at least 6 inches (152mm) up the wall and 12 inches (305mm) on to the roof surface. Lap the membrane over the roof deck underlayment.

5. Rake Edges: Install ventilated metal edge flashing over eaves protection membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches (51mm) and seal with plastic cement; secure with nails and clips.

3.05 INSTALLATION OF SHINGLES

A. General:

1. Install in accordance with manufacturer's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.

2. Minimize breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).

3. Handle carefully in hot weather to avoid scuffing the surfacing, or damaging the shingle edges.

B. Placement and Nailing

1. For maximum wind resistance along rakes & eaves, install any starter strip containing sealant or cement shingles to underlayment and each other in a 4" (102mm) width of asphalt plastic roof cement.

2. Secure with 6 nails per shingle per ’s instructions or local codes.

3. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

4. Nails must be driven flush with the shingle surface. Do not overdrive or under drive the nails.

5. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

C. Valleys

1. Install valleys using the "open valley" method:
   a. Snap diverging chalk lines on the metal flashing, starting at 3 inches (76mm) each side of top of valley, spreading at 1/8 inch per foot (9mm per meter) to the eaves.
   b. Run shingles to chalk line.
   c. Trim last shingle in each course to match the chalk line; do not trim shingles to less than 12 inches (305mm) wide.
   d. Apply a 2 inch (51mm) wide strip of plastic cement under ends of shingles, sealing them to the metal flashing.

D. Penetrations

1. All Penetrations are to be flashed according to , ARMA and NRCA application instructions and construction details.

3.06 INSTALLATION OF NAILBOARD ROOF INSULATION PANEL SYSTEM VENTS

A. General

1. Ventilation must meet or exceed current F.H.A., H.U.D. and local code requirements.

B. Ridge / Soffit Ventilation

1. Install ridge vent along the entire length of ridges:
2. Cut continuous vent slots through the sheathing, stopping 6 inches (152mm) from each end of the ridge.
3. On roofs without ridge board, make a slot 1 inch (25mm) wide, on either side of the peak (2” (51mm) overall).
4. On roofs with ridge board, make two slots 1-3/4 inches (44.5mm) wide, one on each side of the peak (3 ½” (89mm) overall).
5. Install ridge vent material along the full length of the ridge, including uncut areas.
6. Butt ends of ridge vent material and join using roofing cement.
7. Install eaves vents in sufficient quantity to equal or exceed the ridge vent area.

3.07 PROTECTION

A. Protect installed products from foot traffic until completion of the project.

B. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

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).

1.03 RELATED REQUIREMENTS

A. Section 06 1000 – Rough Carpentry: Siding substrate.

B. Section 07 9200 – Joint Sealants: sealing of siding joints and joints to trim.

C. 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: Unfinished.

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.

B. Soffit Panels: Smooth panels of same material and finish.

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.

C. Ice And Water Shield Membrane (Synthetic Underlayment):

1. Self-adhering, self-sealing, bituminous barrier surfaced with a smooth polyethylene film. Approved by UL, Dade County, ICC, State of Florida and Texas Department of Insurance. 36” X 66.7’ (0.9m x 20.3m), and 60 mils thick, self-sealing. Grace Ice and Water Shield self-adhered roofing underlayment or approved equal.

D Self-Adhered Air/Vapor Retarder:

1. Premium, water repellant, breather type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceeds ASTM D226 and D4869. Approved by Dade Country, Florida Building Code, and ICC.. **Deck-Armor™** Premium Breathable Roof Deck Protection, by GAF or approved equal.

E. Finish Paint: Latex house paint acceptable to siding manufacturer; primer recommended by paint manufacturer.

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.

F. Finish Painting: Within one week after installation, paint siding and trim with one coat primer and two coats finish paint.

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 5400

THERMOPLASTIC MEMBRANE ROOFING

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: Provide labor, equipment, temporary protection, tools and appliances including hoisting and scaffolding necessary for the proper completion of the work as required in the Specifications, in accordance with good roofing practice, and as required by the materials manufacturer; including but not limited to the following:

1. Demolition and legal disposal of existing roofing (see Sections 00 3126 – Existing Hazardous Materials Information, 01 3545 – Environmental Procedures, and 02 4100 – Demolition).
2. Substrate Preparation (see section 07 1050 – Preparation for Re-Roofing).
3. Vapor Barrier.
4. Wood Blocking (see Section 06 1000 – Rough Carpentry).
5. Sheet Metal Flashing and Trim (see Section 07 6200 – Sheet Metal Flashing and Trim).
6. Insulation.
7. Roof Membrane and flashing membrane.
8. Fasteners.
9. Adhesives.
10. Walkway pads.
11. Existing roof hatch to be reinstalled.
12. Clean and restore all areas affected by the work.

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) and Town of Halifax for their records. Refer to 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. The contractor shall apply a stamp or certify in writing that submittal has been reviewed by them as complete and correct.

C. Product Data: For the products specified including MSDS.

D. Shop drawings for metal flashings.

E. Samples for Verification: For the products specified.

F. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

G. Maintenance Data: For the roof membrane to include in maintenance manuals.

H. Warranties: For the warranties specified.

I. Manufacturer’s installation instructions to meet impact resistance and wind uplift requirements.

1.04 QUALITY ASSURANCE

A. Upon completion of the installation and the delivery to the roof membrane manufacturer by the Contractor of certification that all work has been done in strict accordance with the contract specifications and roof membrane manufacturer’s requirements, a roof membrane manufacturer’s Technical Service Representative will review the installed roof system wherever a warranty has been specified.

B. There shall be no deviation made from the Project Specification or the approved shop drawings without prior written approval by the Owner, the Owner's Representative and the roof membrane manufacturer.

C. All work pertaining to the installation of roof membrane manufacturer’s membrane and flashings shall only be completed by Contractor personnel trained and authorized by the roof membrane manufacturer in those procedures.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.

B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.

C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.

D. As a general rule all adhesives shall be stored at temperatures between 40 degree F (5 degree C) and 80 degree F (27 degree C). The Contractor shall read the instructions contained on the adhesive canisters for specific storage instructions.

E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.

F. All materials which are determined to be damaged by the Owner's Representative or the roof membrane manufacturer are to be removed from the job site and replaced at no cost to the Owner.

1.06 JOB CONDITIONS

A. The roof membrane manufacturer’s materials may be installed under certain adverse weather conditions but only after consultation with the roof membrane manufacturer, as installation time and system integrity may be affected.

B. Only replace as much of the roofing as can be made weathertight each day, including all flashing and detail work. All seams shall be heat welded before leaving the job site that day.

C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.

D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Contractor shall provide the necessary equipment to dry the surface prior to application.

E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.

F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.

G. The Contractor is cautioned that certain roof membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with roof membranes. The Contractor shall consult with the roof membrane manufacturer regarding compatibility, precautions and recommendations.

H. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over the roof manufacturer’s protection membrane or plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.

I. Prior to and during application, all dirt, debris and dust shall be removed from surfaces, either by vacuuming, sweeping, blowing with compressed air or similar methods.

J. The Contractor shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction.

K. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off site to a legal dumping area authorized to receive such materials. Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable City, State and Federal requirements.

L. All new roofing waste material (i.e., scrap roof membrane, empty cans of adhesive) shall be immediately removed from the site by the Contractor and properly transported to a legal dumping area authorized to receive such material.

M. The Contractor shall take precautions that storage and application of materials and equipment does not overload the roof deck or building structure.

N. Flammable adhesives and deck primers shall not be stored and not be used in the vicinity of open flames, sparks and excessive heat.

O. All rooftop contamination that is anticipated or that is occurring shall be reported to the roof membrane manufacturer to determine the corrective steps to be taken.

P. Contractor shall immediately stop work if any unusual or concealed condition is discovered and shall immediately notify Owner of such condition in writing for correction at the Owner's expense.

Q. Site cleanup, including both interior and exterior building areas that have been affected by construction, shall be completed to the Owner's satisfaction.

R. All landscaped areas damaged by construction activities shall be repaired at no cost to the Owner.

S. The Contractor shall conduct fastener pullout tests in accordance with the latest version of the SPRI/ANSI Fastener Pullout Standard to verify condition of the deck/substrate and to confirm expected pullout values described in this specification.

T. Precautions shall be taken when using certain adhesives at or near rooftop vents or air intakes. Adhesive odors shall not enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.

U. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.

V. Roof membranes are slippery when wet or covered with snow, frost, or ice. Working on surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on roofs.

1.07 BIDDING REQUIREMENTS

A. Bidders shall visit the site and carefully examine the areas in question as to conditions that may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Contractor. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions.

1.08 WARRANTIES

A. Roof Membrane Manufacturer’s Full Roof System Warranty: The roof membrane manufacturer’s roof system warranty for all products installed from the roof membrane manufacturer. The roof membrane manufacturer’s full roof system warranty shall be in effect for a twenty (20) year duration.

B. Roofing Contractor Warranty: Contractor shall supply Owner with a separate workmanship warranty. In the event any work related to roofing, flashing, or metal is found to be within Contractor warranty term, defective or otherwise not in accordance with Contract Documents, the Contractor shall repair that defect at no cost to the Owner. Contractor's warranty obligation shall run directly to the Owner, and a copy shall be sent to roof membrane manufacturer. Roofing Contractor’s Warranty shall be in effect for a two (2) year duration.

PART 2 – PRODUCTS

2.01 GENERAL

A. The components of the roof system are to be products of the roof membrane manufacturer as indicated on the Drawings and specified in the Contract Documents.

2.02 PVC ROOFING MEMBRANE

A. PVC Sheet: ASTM D 4434, fabric reinforced.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   a. Carlisle-SynTec
   b. Sika Sarnafil Inc.

c. Duro-Last Roofing, Inc.
d. GAF Materials Corporation.
e. Johns Manville

2. Thickness: 60 mils nominal.

3. Exposed Face Color: White.

4. Perimeter edge and corner securement as required by the roofing membrane manufacture to meet wind uplift requirements as per the specified warranty criteria.
   a. Design Requirements:
      1) Basic Wind: 110 MPH
      2) Importance Factor: Category III
      3) Exposure Category: B
   b. Corner Uplift Pressure: 56 lbf/sqft
   c. Perimeter Uplift Pressure: 37 lbf/sqft
   d. Field-of-Roof Uplift Pressure: 22 lbf/sqft

2.03 AUXILIARY MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.

   1. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.

B. Bonding Adhesive: Manufacturer's standard bonding adhesive for membrane, and watert-based bonding adhesive for base flashings.

C. Metal Termination Bars: Manufacturer's standard predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

D. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.

E. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, and other accessories.

F. Deck primers as recommended by manufacturer for full system warranty.

G. Sealants as recommended by manufacturer for full system warranty.

H. Pitch Pocket Filler: A two-component urethane adhesive used for pitch pocket filler.

2.04 VAPOR RETARDER

3

A. 32 mil polythelene, self-adhered, with maximum permeance rating of 0.10 perm. Lap seams and seal all joints in accordance with manufacturer’s recommendations. Similar to Sarnavap, as manufactured by Sarnafil, or Architect approved equal. Vapor retarder shall comply with requirements 780 CMR, Commonwealth of Massachusetts Building Code, Chapter 13, Section 1304.3, Air Leakage, and the following material and performance characteristics:

   1. Tensile strength: 3470 psi per ASTM D882.

   2. Elongation at break: 1000% per ASTM D 882.

   3. Yield Strength: 1595 psi per ASTM D 882.

2.05 ROOF INSULATION

A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, felt or glass-fiber mat facer on both major surfaces. Compressive strength >150 KPA at 10% compression, for both flat and tapered.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   a. Atlas Roofing Corporation.
   b. Carlisle SynTec Incorporated.
   c. Firestone Building Products Company.
   d. GAF Materials Corp.

C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.06 INSULATION AND ACCESSORIES

A. Provide flat and/or tapered polyisocyanurate insulation as required, and as provided by the approved roof membrane system manufacturer. Insulation shall be provided in thicknesses indicated on the Drawings, or as otherwise required to provide a minimum aged R value of 30 for the entire roof system in accordance with requirements of Massachusetts Building Code, 780 CMR, 8th Edition, Chapter 13. Insulation shall have a minimum compressive strength of 20 psi. Maximum size of insulation boards shall be 4 ft.-0 in. by 8 ft.-0 in.. Provide assembled systems having a slope of no less than that indicated on the drawings with a starting insulation thickness of 2-1/2 in. at all roof drains which shall provide the required minimum U-factor through the completed roof construction. Insulation assembly shall be composed of a minimum of two layers. All insulation shall be manufactured with the use of HC/Pentane as a blowing agent, with a perforated asphalt impregnated facer on both sides of the insulation.

B. Provide compatible tapered insulation as required to provide crickets at all roof penetrations and obstructions, and as otherwise required to provide a minimum ½ in. per foot slope at all areas as indicated on the Drawings.

C. Insulation and Coverboard Adhesives at Tectum/Perlite Roof Deck Panels:

1. Adhesives shall be as supplied by the approved roof membrane manufacturer for bonding to existing deck panels and new roof assembly layered components.

D. Insulation Fasteners:

1. Fasteners for steel deck shall be acceptable to the approved roof membrane manufacturer and having a minimum length to penetrate the roof deck a minimum of 3/4". Fasteners shall be installed to engage the top flange of individual flutes of the metal deck with minimum pullout resistance of 425 pounds. Fasteners shall be coated with a corrosion resistant coating equal to Stalgard or Buildex.

2. Fasteners for poured-in-place concrete deck shall be as recommended and accepted by membrane manufacturer and penetrate deck a minimum of 1" to a maximum of 1-1/2". A minimum pullout value of 800 pounds per fastener shall be provided. Fasteners shall be coated with a corrosion resistant coating equal to Stalgard or Buildex

3. Provide the approved membrane manufacturer's recommended specially coated insulation fastening plates as required for induction welding of roof membrane to fastener plate and to comply with the required wind uplift resistance in roof field, perimeter, and corner areas.

4. Fasteners and fastening plates incorporated in roofing system shall conform to FM 4470 standard and DIN 50018 specification for corrosion resistance.

E Coverboard shall be 1/2" thick, 4'-0" by 8'-0", water and mold resistant, silicone treated gypsum sheathing, Dens Deck Prime, by Sarnafil, or Architect approved equal by Georgia Pacific, Gold Bond or U.S. Gypsum complying with requirements of ASTMC 1177.

F. Membrane and Flashing Adhesives and Sealants:

1. Membrane and flashing adhesive shall be as supplied by the approved roof membrane manufacturer for the required substrate. Application rates shall be in compliance with the approved manufacturer's recommendations for the intended substrate.

2. Sealant shall be as supplied by the approved roof membrane manufacturer, with color to match the adjacent roof membrane.

3. Sealant at pitch pockets shall be pourable, self – leveling, two part polyurethane, as manufactured by the approved roof membrane manufacturer.

G. Elastomeric Flashing:

1. Base flashing shall be compatible with sheet membrane as supplied by the approved roof membrane manufacturer.

2. Pipe seals and prefabricated flashing accessories shall be as supplied by the approved roof membrane manufacturer.

3. Molded Pipe Flashing shall be as supplied by the approved roof membrane manufacturer.

H. Provide the following accessory products as manufactured by the approved membrane manufacturer:

1. Provide all clips, cleats, straps, anchors and similar items necessary to properly complete the Work. Provide accessories that are compatible with sheet metal materials used and which are of sufficient size and gage to perform as intended.

2. Preformed and prefinished fascia/gravel stop in accordance with requirements of Section 07 6200 – Sheet Metal Flashing and Trim. Material shall be compatible with the approved roof membrane as required to provide full system warranty in accordance with requirements of the Contract Documents.

3. Provide the approved manufacturer's recommended roof expansion joints at all locations as indicated on the Drawings, or as otherwise required to comply with the approved roof system manufacturer's written warranty requirements.

I. Miscellaneous fasteners and anchors shall be of the same type as metal being secured. In general all fasteners, anchors, nails, straps, shall be of zinc or cadmium plated steel, galvanized, or stainless steel. All fasteners and anchors shall have a minimum embedment of 1-1/4 inches and shall be approved for such use by the fastener manufacturer. Fasteners for attachment of metal to wood blocking shall be annular ring nails. Fasteners for attachment of metal to masonry shall be expansion type fasteners. All fasteners shall meet Factory Mutual Standard 4470 for corrosion resistance.

1. Fasteners for attachment of pressure treated blocking shall be stainless steel.

2.07 METAL FLASHINGS

A. PVC-coated, heat-weldable sheet metal: 24 gauge, G90 galvanized metal sheet with a 20 mil unsupported PVC membrane laminated on one side for roof edge fascias.

B. Concealed splice plates, expansion plates (0.040”) and straps (0.050”). Color to be selected by Architect.

C. Pre-finished aluminum reglet counter flashing: 0.040”. Color to be selected by Architect.

D. Pre-finished aluminum clips for counter flashing and blind nailers: 0.040”. Color to be selected by Architect.

E. Hook strips for fascia: 22 gauge G90 galvanized metal sheet.

F. Stainless steel hot pipe hoods and cone-shaped flashings: ANSI "18-8" Type 304, 2D finish.

G. Accessories, including but not limited to nails, screws and clip strips, shall be galvanized steel or stainless steel and completely compatible with surrounding metal so as to prevent galvanic corrosion.

H. Sealant for sheet metal flashings shall be a one-part polyurethane, conforming to ASTM C 920, such as "Dymonic" by Tremco or approved equal.

I. Band clamps shall be stainless steel, 1/2-inch wide, screw adjustable clamps.

2.08 MISCELLANEOUS FASTENERS AND ANCHORS

A. All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1-1/4 inch (32 mm) and shall be approved for such use by the fastener manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1 inch (25 mm) and shall be approved for such use by the fastener manufacturer.

2.09 WALKWAY PROTECTION

A. Provide a fabric reinforced, 0.096 inch (96 mil/2.4 mm), weldable membrane with surface embossment. Used as a protection layer from rooftop traffic. Tread is supplied in rolls of 39.3 inches (1.0 m) wide.

2.10 RELATED MATERIALS

A. Wood Nailer: Treated wood nailers shall be installed at the perimeter of the entire roof and around such other roof projections and penetrations as specified on Project Drawings. Thickness of nailers must match the insulation thickness to achieve a smooth transition. Wood nailers shall be treated for fire and rot resistance (wolmanized or osmose treated) and be #2 quality or better lumber. Creosote or asphalt-treated wood is not acceptable. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49. All wood shall have a maximum moisture content of 19 percent by weight on a dry-weight basis.

B. Plywood:When bonding directly to plywood, a minimum 1/2 inch (12 mm) CDX (C side out), smooth-surfaced exterior grade plywood with exterior grade glue shall be used. Rough-surfaced plywood or high fastener heads will require the use of Sarnafelt behind the flashing membrane. Plywood shall have a maximum moisture content of 19 percent by weight on a dry weight basis.

C. Edge Strip; Provide tapered edge strips of fully secured tapered insulation to slope from perimeter wood blocking to insulation height where wood blocking is above insulation height, except at edges with tapered crickets.

2.13 ROOF DECK REPAIRS

A. Refer to the following sections:

1. Section 01 2200 – Unit Prices
2. Section 05 3100 – Steel Decking
3. Section 06 1000 – Rough Carpentry

PART 3 - EXECUTION

3.01 PRE-CONSTRUCTION CONFERENCE

A. The Contractor, Owner's Representative and Designer shall attend a pre-construction conference.

B. The meeting shall discuss all aspects of the project including but not limited to:

1. Safety
2. Set up
3. Construction schedule and phasing
4. Contract conditions
5. Coordination of the work

3.02 SUBSTRATE INSPECTION

A. A dry, clean and smooth substrate shall be prepared to receive the adhered roof system.

B. The Contractor shall inspect the substrate for defects such as excessive surface roughness, contamination, structural inadequacy, or any other condition that will adversely affect the quality of work.

C. The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected.

D. All roof surfaces shall be free of water, ice and snow.

E. Roofing materials shall be applied over compatible and accepted substrates only.

3.03 VAPOR BARRIER/AIR BARRIER INSTALLATION

A. Self-Adhered vapor retarder shall be installed in accordance with manufacturer’s instructions for the full system warranty and to resist code required wind loads. Basic Wind Speed is 110. Should primer be required, then install primer in accordance with manufacturer’s instructions.

3.04 ROOF MEMBRANE AND FLASHING INSTALLATION

A. Roof and flashing membranes shall be installed/adhered in accordance with manufacturer’s instructions for the full system warranty and to resist code required wind loads. Basic Wind

Speed is 110. Should primer be required, then install primer in accordance with manufacturer's instructions.

3.05 INSULATION AND PROTECTION BOARD INSTALLATION

A. Insulation shall be installed/adhered in accordance with manufacturer's instructions for the full system warranty and to resist code required wind loads. Basic Wind Speed is 110.

B. Insulation shall be neatly cut to fit around penetrations and projections.

C. Do not install more insulation board than can be covered with roofing membrane by the end of the day or the onset of inclement weather.

D. Use at least 2 layers of insulation when the total insulation thickness exceeds 2-1/2 inches. Stagger joints at least 12 inches between layers.

3.06 HOT-AIR WELDING OF SEAM OVERLAPS

A. General

1. All seams shall be hot-air welded. Seam overlaps should be 3 inches (76 mm) wide when automatic machine-welding and 4 inches (100 mm) wide when hand-welding, except for certain details.

2. Welding equipment shall be provided by or approved by the roof membrane manufacturer. All mechanics intending to use the equipment shall have successfully completed a training course provided by the roof membrane manufacturer prior to welding.

3. All membrane to be welded shall be clean and dry.

4. Cut out test strips at seams, at fifty (50) foot intervals, and patch membrane. Turn over test strips to OPM.

3.07 METAL FLASHINGS

B. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:

1. Factory Mutual Loss Prevention Data Sheet 1-49 (latest issue).

2. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.

C. All metal flashings shall be shop fabricated with hemmed edges. Fascia shall cover plates to match profile of fascia over joints.

D. Complete all metal work in conjunction with roofing and flashings so that a watertight condition exists daily.

E. Metal shall be installed to provide adequate resistance to bending to allow for normal thermal expansion and contraction.

F. Metal joints shall be watertight.

G. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch (25 mm).

H. Airtight and continuous metal hook strips are required behind metal fascias. Hook strips are to be fastened 12 inches (0.3 m) on center into the wood nailer or masonry wall.

I. Counter flashings shall overlap base flashings at least 4 inches (100 mm).

J. Hook strips shall extend past wood nailers over wall surfaces by 1-1/2 inch (38 mm) minimum and shall be securely sealed from air entry.

3.08 CLEAN-UP

A. Clean the roof, building (interior and exterior), landscaped and parking areas so they are free of trash, debris and dirt caused by, or associated with the Work. Sweep all roof surfaces of leaves, sticks, fasteners, scrap metal and other roof-top debris. Take special care in cleaning around roof drains and ensure that all debris is removed from strainers such that water flow is not interrupted.

B. Rooftop and site clean-up shall be performed daily.

C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.

D. Repair or replace defaced or damaged finishes caused by work of this section.

E. Protect installed roofing and flashings from construction operations.

F. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

3.09 COMMISSIONING AND TESTING

A. Provide uplift resistance testing, and fastener and adhesive pullout testing, minimum 2 locations per roof deck type, prior to commencement of new work.

B. Refer to Section 01 9119 – Roofing Commissioning Requirements.

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 for shingle roofs
   b. Formed low-slope roof flashing and trim.
   c. Prefabricated pre-finished aluminum copings.

B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:

1. Section 06 1000 – Rough Carpentry

2. Section 07 3113 – Asphalt Shingles

3. Section 07 5400 – Thermoplastic Membrane Roofing

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. Fabricate and install roof edge flashing and copings capable of resisting the following forces required by Code according to recommendations in FMG Loss Prevention Data Sheet 1-49:

C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.

D. 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 furninsh authorized hard copies to the

Clerk of Works (CoW) and Town of Halifax for their records. Refer to 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.

B. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1. Meet with the Owner's Project Manager, Designer, User Agency's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.

2. Review methods and procedures related to sheet metal flashing and trim.

3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.

4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

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. Stainless Steel shall be ANSI "18-8" Type 304, 2D finish.

B. Galvanized Steel: ASTM A123 and A525 Specifications.

C. Zinc Coated Copper: ASTM B370. Coating shall be 0.5 mils thick on both sides.

D. All metal flashings shall be shop fabricated with 1/2-inch hemmed edges, and shall not exceed 8-feet in length.

E. Steel: ASTM A36.

2.02 ACCESSORIES

A. Accessories, including but not limited to nails, screws and clip strips, shall be galvanized steel or stainless steel and completely compatible with surrounding metal so as to prevent galvanic corrosion.

B. Flux shall conform to ASTM B32 Specifications.

C. Solder shall be 50% block tin and 50% pig lead manufactured for use with stainless steel.

D. 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.

E. Sheet metal and wood blocking to masonry wall connections shall be completed with 1-3/4 inch long, 1/4-inch diameter, stainless steel screws.

F. Fasteners for re-securing existing mechanical unit covers and for securing sheet metal to sheet metal shall be Number 10, stainless steel sheet metal screws, 1-inch long. Fasteners shall be equipped with metal capped neoprene washers.

G. Sealant for sheet metal flashings shall be a one-part polyurethane, conforming to ASTM C 920-86, such as "Dymonic" by Tremco.

H. Band clamps shall be stainless steel, 1/2-inch wide, screw adjustable clamps.

I. Flux shall be muriatic acid killed with zinc.

J. Solder shall be 60% block tin and 40% pig lead, conforming to ASTM B32 specifications. Solder vertical seams at zinc coated copper stop flashing.

K. Insect screen shall be 12 by 12 mesh, .028-inch diameter stainless steel.

2.03 FABRICATION SCHEDULE

A. Stainless Steel

1. 22-24 Gauge as Required by Roofing Manufacturer's Warranty

2. Counterflashing

B. Aluminum (.032)

1. Finish to a Kynar 500 Shop Applied Three Coat Resin Based, High Performance Thermoplastic Organic Coating

2. Coping

C. Zinc Coated Copper (20 oz)

1. Securement clips and Hook Strips

D. Zinc Coated Copper (16 oz.)

1. Through-wall Flashing

2. Reglet Flashing

3. Counter Flashing

E. PVC Coated Metal

1. A PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles. Clad is a 24 gauge, G90 galvanized metal sheet with a 20 mil (0.5 mm) unsupported PVC membrane laminated on one side. The dimensions of clad are 4 ft x 8 ft (1.2 m x 2.4 m) or 4 ft x 10 ft (1.2 m x 3.0 m).

F. Perimeter Edge Flashing

1. Prefabricated Metal

A prefabricated perimeter system edge. The system has concealed fasteners with no penetrations on the horizontal roof surface and includes fasteners and splice plates. Made from two distinct parts. A rigid stainless steel retainer base plate (Hickman Edge Grip system, or equivalent) and a decorative snap-on prefinished painted aluminum fascia cover.

a. Stainless Steel retainer base plate (thickness/gauge as required by manufacture to meet wind uplift requirements) in 10 ft. lengths.
b. Snap-on prefinished painted aluminum fascia cover (thickness/gauge as required by manufacture to meet wind uplift requirements) in 10 ft. lengths.
c. Snap-on fascia cover shall have a prefinished factory finish.

G. Expansion Joint Flashing

1. A prefabricated expansion joint cover made from PVC membrane. Designed for securement to vertical or horizontal surfaces to span and accommodate the movement of new and existing expansion gaps from 1 inch to 4-1/2 inches (25 mm to 114 mm) across.

H. Termination Bar

1. A heavy-duty, extruded aluminum flashing termination bar used at walls and large curbs. Termination bar is produced from 6063-T5, 0.10 inch to 0.12 inch (2.5 mm to 3.0 mm) thick extruded aluminum. Termination bar has a 2-1/4 inch (57 mm) deep profile, and is provided in 10 foot (3 m) lengths. Use prefabricated termination bar mitered inside and outside corners where walls intersect.

PART 3 – EXECUTION

3.01 SHEET METAL FLASHING

I. 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.

J. It is the intent of this Specification to have as little soldering as is practical in order to properly install strong, weathertight metal flashings. Joints shall be interlocked and crimped where possible. Corners shall be soldered to provide strength and a weatherproof connection.

K. Comply with Military Specification MIL-S-6872B entitled, "General Specifications for Soldering Process" when forming soldered joints. Use conduction soldering methods. Areas to be joined shall be cleaned of oil, grease, pencil marks, paint, dirt or other foreign substances. Remove burrs using files, grinding stones or other methods. Hold parts in place using clamps, jigs and supports or by self-fixturing. If parts are tack-soldered to hold them in place, the area of tack-soldering shall be reworked into the final soldering. Parts cannot be allowed to more during the soldering process.

L. Flux shall be applied to all surfaces that are to receive solder. Flux-cored solder shall not be used. Flux shall be fluid when heated and effective in removing and excluding oxides and other impurities from the joint. Flux should be readily displaced by the molten solder.

M. Areas to be joined shall be heated above the liquious temperature of the solder. To deliver maximum heat, the copper bit of the soldering iron shall be applied at the right angle so that the flat side of the iron's bit provides maximum contact area. Solder shall be applied to the joint and not the bit of the iron. Allow solder to flow in place to provide a minimum 1-inch final width of solder over the joint. Joint shall not be disturbed until it has been allowed to completely cool. After soldering, completely remove all flux and acid by washing and scrubbing with a neutralizing agent.

N. Sheet metal flashings shall be shop fabricated. Breaks, bends and hems shall be uniform, clean, and straight lines.

3.02 HOOK STRIPS

A. Hook strips shall be formed with a 3-inch face and a 3/4-inch kick, bent out at a 60° angle to the face (or 30° to the wall).

B. Secure continuous hood strips to wood blocking with nails spaced at 6-inches on center.

C. Provide 1/8-inch butt joints between hook strip sections.

3.03 SECUREMENT CLIPS

A. Securement clips shall be 6-inches long (double folded) and 2-inches wide.

B. Secure clips to masonry with masonry fasteners and to wood furring with ring shank copper nails. Clips shall be spaced at 12-inches on center.

C. Bend clips a minimum of 1-inch over bottom drip edge of counter flashing and crimp tightly.

3.04 REGLET COUNTER FLASHING

A. Fabricate new reglet counter flashing to the dimensions and shapes shown on the detail drawings and as specified herein.

B. Saw cut a reglet into the brick masonry mortar joint to a depth of 1-1/4 inches minimum and a width of 3/8-inch. Clean loose particles from reglet and fill reglet with butyl sealant.

C. Form counter flashing so the "V" bend is up and bent at a 45° angle and not less than 3/4-inch long. Bend shall provide spring action within reglet.

D. Insert counter flashing into the reglet and secure with lead wedges spaced at 8-inches on center and a minimum of 3 wedges per length of counter flashing. Assure that counter flashing and wedges are driven in properly to provide proper sealant coverage. Install full bead of polyurethane sealant above exterior edge of counter flashing.

E. Secure counter flashing with sheet metal securement cleat along bottom edge.

3.05 ROOF-TO-WALL COUNTER FLASHING

A. Fabricate counter flashing as indicated in the detail drawings.

B. Secure clips at 16-inches on center along the wall as indicated in the drawings. Insert counter flashing into the existing sheet metal receiver. Fold clips over counter flashings and crimp tightly.

C. Metal Flashings

1. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:

   Factory Mutual Loss Prevention Data Sheet 1-49 (latest issue).

   Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.

2. Complete all metal work in conjunction with roofing and flashings 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.

5. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch (25 mm).

6. Airtight and continuous metal hook strips are required behind metal fascias. Hook strips are to be fastened 12 inches (0.3 m) on center into the wood nailer or masonry wall.

7. Counter flashings shall overlap base flashings at least 4 inches (100 mm).

8. Hook strips shall extend past wood nailers over wall surfaces by 1-1/2 inch (38 mm) minimum and shall be securely sealed from air entry.

D. Prefabricated Edge Metal

1. Position the membrane over the roof edge and down outside face of wall covering wood nailer(s) completely, allowing 1/2 inch (13 mm) excess membrane. Hot-air weld all seams making sure there are no voids in welds.

2. Apply a 3/8 inch (10 mm) bead of PVC sealant to the intersection of the right angle of the clean base rail. Install base rail from right to left as seen from rooftop, lapping joints 1 inch (25 mm).

3. Fasten base rail into the side of the nailer 12 inches (0.3 m) on center using #12 x 1-5/8 inch corrosion-resistant fasteners provided with Edge-Tite. Field cut sections as necessary. A second row of fastening may be required based upon site conditions. Exercise caution at perimeter of roof. Workers shall follow OSHA safety procedures.

4. Position spring clips at 6 foot (1.8 m) centers on base rail. Locate spring clips at fascia cover laps and at mid-span of fascia cover.

5. Fascia covers are installed from right to left as seen from above. Position fascia cover on top of base rail and overlap preceding panel by 1 inch (25 mm) at notches provided. Snap covers into place. Field cut where necessary. Exercise caution at perimeter of roof. Workers shall follow OSHA safety procedures.

END OF SECTION

SECTION 07 7123

MANUFACTURED GUTTERS AND DOWNSPOUTS

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. Removal of existing and replacement with new pre-finished aluminum gutters, collector boxes, and rainwater leader downspouts as indicated on the Drawings.

1.03 RELATED REQUIREMENTS

A. Section 07 3113 – Asphalt Shingles

B. Section 07 5400 – Thermoplastic Membrane Roofing

C. Section 07 6200 – Sheet Metal Flashing and Trim.

1.04 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; American Architectural Manufacturers Association; 2012.

B. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels; 2013.

C. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 2013.

D. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2013.

E. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2010.

F. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2010.

G. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2012.

1.05 DESIGN REQUIREMENTS

A. Conform to SMACNA (ASMM) for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

B. Conform to applicable code for size and method of rain water discharge.

1.06 SUBMITTALS

A. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.

B. Product Data: Provide data on prefabricated components.

C. Samples: Submit two samples, 12 inches long illustrating component design, finish, color, and configuration.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain.

B. Prevent contact with materials that could cause discoloration, staining, or damage.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Gutters and Downspouts:

1. ATAS International, Inc: www.atas.com.

2. Cheney Flashing Company: www.cheneyflashing.com.

3. W.P. Hickman Company; Wind Resistant Gutter: www.wph.com.

4. Substitutions: See Section 01 6000 – Product Requirements.

2.02 MATERIALS

A. Pre-Finished Aluminum Sheet: ASTM B209 (ASTM B209M); 0.032 inch thick.

2.03 FINISHES

A. Finish, exposed aluminum:
   1. Polyvinylidene Fluoride (PVDF), Kynar 500 shop applied three coat resin based, high performance thermoplastic organic coating in custom non-standard metallic finish color to match Architect's sample, conforming to AAMA 605.2, NAAMM - Metal Finishes Manual, and the following:
      a. Resin base of 70 percent PVDF by weight, Atochem North America, Inc., Product "Kynar 500" or Ausimont USA, Product "Hylar 5000".
      b. Finish Coating shall be manufactured as one of the following products:
         1) Glidden Company; product "Visulure".
         2) Morton International; product "Fluoroceram CL".
         3) P.P.G. Industries Inc.; product "Duranar XL".
         4) Valspar Corp., product: "Flurothane".
      c. Surface Preparation: Properly clean aluminum with inhibited chemical cleaner and pretreat with acid chromate-fluoride-phosphate conversion coating, in accordance with Aluminum Association method AA-C12C42.
      d. Primer: Corrosion resistant, epoxy or urethane based primer compatible with finish coating, averaging 0.2 to 0.3 mils dry film thickness.
      e. Barrier Coat: Epoxy-based primer compatible with finish coating, averaging 0.70 to 0.80 mils dry film thickness.

f. Finish Coat (Color Coat): Polyvinylidene fluoride enamel averaging 0.70 to 0.80 mil dry film thickness.
g. Top Coat: Polyvinylidene fluoride enamel clear top coat averaging 0.45 to 0.55 mils dry film thickness.

2.04 COMPONENTS

A. Gutters: K-style profile, with bottom outlet elbows.

B. Downspouts: CDA Rectangular profile, with bottom outlet elbows.

C. Anchors and Supports: Profiled to suit gutters and downspouts.

1. Anchoring Devices: In accordance with CDA requirements.

2. Gutter Supports: Brackets.

3. Downspout Supports: Brackets.

D. Fasteners: Galvanized steel, with soft neoprene washers.

E. Splash pads: Precast concrete type, size 18inch x 30inch, and profile as indicated; minimum 3000 psi at 28 days. Provide at grade level where there is no existing boot connection to subsurface drainage pipe inlets. Provide rubber splash pads at roof level, as recommended by roofing manufacturer.

F. Scupper boxes: 12 inch x 13 inch tall 8 ¾ inch deep (front to back) 0.32 prefinished aluminum. Dimension at bottom 6 inch x 4 inch.

2.05 FABRICATION

A. Form gutters to profiles and sizes indicated. 8 inch deep typical unless otherwise noted.

B. Fabricate downspouts to minimum 4 inch by 5 inch.

C. Fabricate with required connection pieces.

D. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.

E. Hem exposed edges of metal.

F. Fabricate gutter and downspout accessories; seal watertight.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that surfaces are ready to receive work.

3.02 PREPARATION

A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.

B. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.

C. Slope gutters 1/8 inch per foot minimum.

D. Connect downspouts to existing downspout boots. Grout connection watertight. At rainwater locations where there is no existing boot, Contractor shall provide a splashblock, typical (field verify).

E. Set walkway pads under downspouts at roof level outfall.

END OF SECTION

SECTION 07 7200

ROOF ACCESSORIES

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:

1. Snow Guards.
2. Safety railing system for existing roof hatch.
3. Non-penetrating ballusted safety railings.

B. Related Work:

1. Section 07 3113 – Asphalt Shingles.
2. Section 07 5400 – Thermoplastic Membrane Roofing

1.03 SUBMITTALS

A. See Section 01 3300 - Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.
4. Maintenance requirements.

C. Shop Drawings: Submit detailed layout developed for this project. Show dimensioned location and number for each type of roof accessory.

1. Snow Guards: Submit design calculations for loadings and spacings based on manufacturer testing.

D. Warranty Documentation:

1. Submit manufacturer warranty.
2. Ensure that forms have been completed in Owner's name and registered with manufacturer.
3. Submit documentation that roof accessories are acceptable to roofing manufacturer, and do not limit the roofing warranty.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products under cover and elevated above grade.

1.05 WARRANTY

A. See Section 01 7000 – Execution and Closeout Requirements, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 – PRODUCTS

2.01 SNOW GUARDS

A. Half round pad style snow guard:

1. Tin-zinc alloy

2. Cover to be selected by Architect

3. Pad area is 2 3/8” L x 2 3/8“ W x 1 7/16” H.

4. Strap length is 15 5/8”.

5. Manufacturers:
   a. Alpine Snow Guards; Model PD10: www.alpinesnowguards.com.
   b. Berger Building Products: www.bergerbp.com.
   c. Metal Roof Innovations

2.02 HATCH SAFETY RAILING SYSTEM

A. Corrosion resistant aluminum rails in size to match roof hatch (3’ 0” x 2’ 6” – verify in field).

B. Meets requirements of OSHA 29 CFR 1910.23

C. Non-penetrating attachments

D. Safety yellow powder coat paint finish.

E. Self-closing gate with automatic gate latch with interior and exterior release.

F. Manufacturers:

1. Bil-Guard 2.0 Type S-20 By Bilco

2. Approved equal

2.03 NON-PENETRATING ROOFTOP ASSEMBLIES

A. Manufacturers:

1. PHP Systems/Design.

2. Portals Plus.

3. Advanced Support Products, Inc.

B. Non-Penetrating Rooftop Assemblies: Manufacturer-engineered and factory-fabricated, with pedestal bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly.

1. Height: Provide minimum clearance of 6 inches under supported items to top of roofing.

2. Support Spacing and Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.

3. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.

4. Hardware, Bolts, Nuts, and Washers: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A153/A153M.

C. Pipe Supports: Provide attachment fixtures complying with MSS SP-58 and as indicated.

1. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports; corrosion resistant material.

2. See relevant piping system specification section for additional requirements.

D. Non-Penetrating Pedestals: Steel pedestals with square, round, or rectangular bases.

1. Bases: High density polypropylene.

2. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.

3. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.

E. Non-Penetrating Safety Guard Railing System:

1. Galvanized ASTM A53 steel pipe with BS EN ISO 1461:199 galvanized pre-fabricated clamp-type connector components. 42-inch high vertical meeting OSHA Safety Standards, for 200 lb. applied load resistance, utilizing anti-slip rubber protection pads on post bases and PVC counterbalance weights.

2. Railing system to be designed for field conditions at indicated roof locations.

3. Manufacturers and Systems, or Architect approved equal system:
   a. Kee Safety, Kee-Guard with Kee-Clamp components.
   b. Garlock Equipment, Railguard 200 system.
   c. BlueWater Manufacturing, SafetyRail 2000 system.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing weather integrity.

3.04 CLEANING

A. Clean installed work to like-new condition.

3.05 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 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.

1.03 RELATED REQUIREMENTS

A. Section 07 2400 – Exterior Insulation and Finish Systems

B. Section 07 3113 – Asphalt Shingles

C. Section 07 4646 – Fiber Cement Siding

D. Section 07 5400 – Thermoplastic Membrane Roofing.

E. Section 07 6200 – Sheet Metal Flashing and Trim.

F. Section 07 7200 – Roof Accessories

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 C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2000 (Reapproved 2011).

E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.

F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).

G. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2010.

H. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2002 (Reapproved 2013).

I. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2013.

J. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2005 (Reapproved 2010).

K. 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; 890FTS-TXTR Field Tintable Textured Ultra Low Modulus Architectural Silicone Sealant - Class 100: www.pecora.com.
   b. Substitutions: See Section 01 6000 - Product Requirements.

B. Type B - 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 25 percent, minimum.

2. Color: To be selected by Architect from manufacturer's standard range.

3. Cure Type: Single-component, neutral moisture curing

4. Service Temperature Range: Minus 65 to 180 degrees F.

5. Products:
   a. Pecora Corporation; Pecora AVB Silicone: www.pecora.com.
   b. Substitutions: See Section 01 6000 - Product Requirements.

C. Type C - Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.

1. Color: White.

2. Products:
   a. Pecora Corporation; 898NST Sanitary Silicone Sealant - Class 50: www.pecora.com.
   b. Substitutions: See Section 01 6000 - Product Requirements.

D. Type D - 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. Sherwin-Williams Company; Stampede 100 Low-Modulus Hybrid Urethane Sealant: www.sherwin-williams.com.
   b. Substitutions: See Section 01 6000 - Product Requirements.

E. Type E - 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.
   c. Substitutions: See Section 01 6000 - Product Requirements.

F. Type F - Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.

1. Movement Capability: Plus and minus 35 percent, minimum.

2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.

3. Products:
   a. Substitutions: See Section 01 6000 – Product Requirements.

G. Type G - Nonsag "Traffic-Grade" Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion and traffic without the necessity to recess sealant below traffic surface.

1. Movement Capability: Plus and minus 25 percent, minimum.

2. Hardness Range: 40 to 50, 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. 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. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.

3. Open Cell: 40 to 50 percent larger in diameter than joint width.

4. Closed Cell and Bi-Cellular: 25 to 33 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 1113

HOLLOW METAL 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 SECTION INCLUDES

A. Non-fire-rated thermally insulated hollow metal door and frame.

B. Door Hardware

1.03 REFERENCE STANDARDS

A. D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.

B. F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

C. ASTM A1008/A1008M - 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; 2016.

D. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2015.

1.04 SUBMITTALS

A. See Section 01 3300 – Submittal Procedures.

B. Shop Drawings: Details showing elevations, frame profiles, finish, sizes, hardware mounting locations and manufacturer of each item.

C. Samples: showing factory finishes, colors.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Doors and Frames:

1. Ceco Door, an Assa Abloy Group company
2. Republic Doors
3. Steelcraft, an Allegion brand

2.02 DESIGN CRITERIA

A. Requirements for Hollow Metal Doors and Frames:

1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
2. Accessibility: Comply with ICC A117.1 and ADA Standards.
3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
4. Door Edge Profile: Manufacturers standard for application indicated.
5. Typical Door Face Sheets: Flush.
6. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
7. Zinc Coating for Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
   a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.

2.03 HOLLOW METAL DOOR

A. Exterior Door, Non-Fire Rated:

1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 1 - Standard-duty.
   b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 1 - Full Flush.
   d. Door Face Metal Thickness: 20 gage, 0.032 inch (0.8 mm), minimum.
2. Core Material: Manufacturers standard core material/construction and in compliance with requirements.
3. Door Thickness: 1-3/4 inch (44.5 mm), nominal.
4. Door Finish: Factory primed and finished.
5. Size: Custom to match existing modified opening. Assume 3’0” x 6” 8” (verify in field).

6. Door Thermal Resistance: R-Value of 2.8 minimum.

2.04 HOLLOW METAL FRAME

A. Exterior Door Frame, Non-Fire Rated: Full profile/continuously welded type.

1. Frame Metal Thickness: 18 gage, 0.042 inch (1.0 mm), minimum.

2. Frame Finish: Factory primed and finished.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10 , door manufacturer's standard.

B. Factory Finish: Complying with ANSI/SDI A250.3, manufacturer's standard coating.

1. Color: As selected by Architect from manufacturer's standard range.

2.06 DOOR HARDWARE

A. Provide the following hardware set:

3 heavyweight hinges

1 weatherproof threshold

1 lever handle exterior lockset

1 cylinder (coordinate with Owner keying system requirements)

1 heavy-duty overhead slide-arm stop and holder

Weather stripping, aluminum with neoprene bulb seals, at frame perimeter and door bottom.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.03 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Coordinate frame anchor placement with wall construction.

C. Coordinate installation of hardware.

D. Touch up damaged factory finishes.

3.04 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified door and frame standards or custom guidelines indicated.

B. Maximum Diagonal Distortion: 1/16 in (1.5 mm) measured with straight edge, corner to corner.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 09 9000

PAINTING AND COATINGS

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 the following:

1. Surface preparation for all painting.
2. Field painting of all new fiber cement siding.
3. Field painting of existing and new cement plaster stucco at false chimneys and patched areas above base flashings.
4. Field painting of all PVC trim and board siding.
5. Not Used
6. Touch up Painting of surfaces disturbed by the work.

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.

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.

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.

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. Exterior Fiber Cement Cladding:
   a. One Coat Sherwin-Williams Exterior Latex primer B42W8041
   b. Two coats Sherwin Williams Exterior Latex satin A82 series.

2. Exterior PVC Trim Boards:
   a. Preparation as specified by PVC trim manufacturer.
   b. Two top coats and one coat primer recommended by PVC trim manufacturer.
   c. Top Coat(s): Styrene Acrylic Latex Water Repellent.

3. Stucco:
   a. One Coat Sherwin-Williams Exterior Latex primer B42W8041
   b. Two coats Sherwin Williams Exterior Latex satin A82 series.

3 4. Not Used

END OF SECTION

SECTION 22 0000

PLUMBING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

B. Consult the individual Sections of the Specifications for cleaning of Work installed under those Specifications.

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 discard from site the existing roof drain as indicated on the drawings.

2. Remove and discard from site the existing gas piping as indicated on the drawings.

3. Furnish and install new roof drains as indicated on the drawings. Clean roof drain pipe and make it operational.

4. Extend the vent pipes as indicated on the drawings.

5. Furnish and install new gas pipes as indicated on the drawings.

6. Coordination with roofing and other contractors.

7. Testing of all plumbing systems.

8. Record Drawings.

B. Items to be Furnished Only: None.

C. Items to be Installed only: None.

D. Related Work: The following items are not included in this section and will be performed under the designated sections and as indicated below:

1. Section 01 7329 - CUTTING AND PATCHING

   a. Coring, cutting and patching [except drilling for hangers and providing openings in metal decks]. However, this work shall be paid for by the Plumbing Contractor where this is due to his omissions or negligence.

2. Section 01 5000 - TEMPORARY FACILITIES AND CONTROLS

   a. Temporary heat, light, water, power and sanitary facilities for use during construction and testing.

   b. Refer to 1.22 SCAFFOLDING, HOISTS, CRANES, STAGING, PLATFORMS & CHUTES.

E. Reference to Drawings: Refer to Title Sheet for drawing numbers and names.

1.03 INTENT

A. All work shown on the Drawings is intended to be approximately correct to scale, but figured dimensions and detailed Drawings are to be followed in every case. The Drawings shall be taken in a sense as diagrammatic. Size of pipes or conduits and methods of running them are shown but it is not intended to show every offset and fitting, nor every structural difficulty that may be encountered.

B. To carry out the true intent and purpose of the Drawings, all necessary parts to make complete, approved working systems ready for use shall be furnished without extra charge.

C. Locations shown on the Drawings are approximate and it is intended that all equipment shall be located in accordance with the general and detail Drawings of the construction proper. All measurements shall be taken at the building before fabrication commences.

1.04 QUALITY ASSURANCE

A. The work shall be executed in strict conformity with the latest edition of the prevailing State Plumbing and Building Codes and all local regulations that may apply. In case of conflict between the contract documents and a governing code or ordinance, the more stringent standard shall apply.

B. Unless otherwise specified or indicated, materials and workmanship shall conform with the latest edition of the following Standards and Specifications:

American National Standards Institute (ANSI)
Underwriter's Laboratories, Inc. (UL)
American Society for Testing and Materials (ASTM)
National Fire Protection Association (NFPA)
American Gas Association (AGA)
National Electric Code (NEC)
Department of Environmental Protection (DEP)

C. If any work is performed and subsequent changes are necessary to conform to the ordinances, the changes shall be made at the Plumbing Sub-Contractor's expense.

D. All new plumbing equipment shall be designed to conform to applicable state and local energy codes. Pipe insulation, water heater, and flow control fittings shall be selected with efficiencies and design conditions to meet applicable energy codes.

E. Availability of a "Certificate of Approval" from the local and/or state Plumbing Inspector shall be a prerequisite to scheduling a final inspection to this contract. A copy of the certificate shall be submitted to the Designer.

F. Workmanship shall be of the best quality and none but competent workmen skilled in their trades shall be employed. The Plumbing Sub-Contractor shall furnish the services of an experienced superintendent, who will be constantly in charge of the erection of the work, until completed and accepted.

G. Obtain from the manufacturer the proper method of installation and connection of the equipment that is to be furnished and installed. Obtain all information that is necessary to facilitate the work and to complete the project.

1.05 COOPERATION AND COORDINATION WITH OTHER TRADES

A. It shall be the responsibility of the Plumbing Sub-Contractor to fully coordinate his work with that of the other trades so that all work may be installed in the most direct and workmanlike manner and so that interference between piping, ducts, conduits, equipment, architectural and structural features and other work will be avoided.

B. This Sub-Contractor shall obtain detailed information from the manufacturers of apparatus as to the proper method of installing and connecting same. He shall also obtain all information from the General Contractor which may be necessary to facilitate his work and the completion of the whole project.

C. It shall be the responsibility of the Plumbing Sub-Contractor to consult with and provide the General Contractor with the exact location and size of all openings, and full information of the required work at the proper time and it will be the duty of the General Contractor to provide the same.

D. The Plumbing Sub-Contractor shall be responsible for the proper location of his required sleeves, chases, inserts, etc., and see that they are set or cut into the concrete.

E. In case the work of the two trades interferes in such a manner as to necessitate a deviation from the design, this work shall not proceed in this area until the Designer has been notified and has rendered a decision as to the manner in which the difficulty shall be overcome.

1.06 RECORD DRAWINGS

A. Refer to Section 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS.

1.07 PERMITS, FEES, RULES AND REGULATIONS

A. Give the proper Authorities all requisite notices or information relating to the work under this Section. Obtain and pay for all fees, licenses, permits and certificates. Comply with the rules and regulations of all Local, State and Federal Authorities having jurisdiction, the Codes, Standards, recommended practices and manuals of the National Fire Protection Association and the Public Utilities Companies serving the building.

1.08 PROTECTION OF WORK AND PROPERTY

A. Be responsible for the care and protection of all work included under this Section until it has been tested and accepted.

B. Protect all equipment and materials from damage from all causes including theft. All materials and equipment damaged or stolen shall be repaired or replaced with equal material or equipment at no cost to the Owner.

C. Protect all equipment, outlets and openings with temporary plugs, caps and covers. Protect work and materials of other trades from damage that might be caused by work or workmen and make good any damage thus caused.

1.09 SUBMITTAL REQUIREMENTS

A. Refer to Section 01 3300 - SUBMITTAL PROCEDURES

B. Submit the following shop drawings for approval:

1. Roof drain.
2. Pipes and pipe identification

1.10 MATERIAL AND EQUIPMENT STANDARDS

A. Where materials or equipment are specified by patent proprietary name, or name of the manufacturer, such Specification shall be deemed to be used for the purpose of establishing a standard for that particular item. Substitutions may be offered for review provided the material, equipment or process offered for consideration is equal in every respect to that indicated or specified and only if the term "equal" appears.

1.11 GUARANTEE

A. Refer to Section 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS.

1.12 CERTIFICATES OF APPROVAL

A. Refer to Section 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS.

B. Furnish any certificates necessary as evidence that the work conforms to the requirements of all authorities having jurisdiction.

1.13 CLEANING AND ADJUSTING

A. At the completion of the work, all fixtures, equipment, apparatus and exposed trim included in this Section, shall be cleaned and left ready for use. Equipment or fixtures which have been damaged during construction shall be replaced with new at no cost to the Owner.

1.14 DEBRIS

A. The Plumbing Sub-Contractor shall be responsible for the removal of all debris caused by his work and his workmen. Such debris shall be removed daily in order to leave all areas in a clean and safe condition.

1.15 TEMPORARY WATER

A. Refer to Section 01 5000 - TEMPORARY FACILITIES AND CONTROLS

1.16 WATERPROOFING AND COUNTERFLASHING

A. The Plumbing Sub-Contractor shall provide all counterflashing for all piping as applicable and as provided by him, which pierce roofs, walls and other weatherbarrier surfaces.

B. Pipes passing through slabs shall have the sleeve extended above floors as hereinafter specified to retain any water and the space between the pipe and sleeve caulked with lead wool. The top shall be sealed with lead and the bottom shall be sealed with monolastic caulking compound.

1.17 CONNECTIONS TO EQUIPMENT

A. The Plumbing Sub-Contractor shall provide all pipe connections, as applicable, to equipment provided under other Sections of the Specifications as shown on the contract drawings and herein specified including final connections to equipment to result in a complete system, fully operational. Coordinate location of all equipment with the General Contractor and Designer. Obtain installation diagrams and methods of installation of all equipment, from manufacturers. Follow instructions strictly. If additional information is required, obtain same from the Designer.

1.18 STANDARD OF MATERIALS AND WORKMANSHIP

A. Workmanship and installation methods shall conform to the best standard practice. Work shall be performed by skilled tradesmen under the direct supervision of fully qualified personnel.

B. Install equipment in strict accordance with manufacturer's written recommendations.

C. When requested, submit samples of materials proposed for review before proceeding with the work.

D. Install equipment and materials to present a neat appearance. Run piping parallel with or perpendicular to building planes.

E. Conceal piping in finished areas. Install work so as to require a minimum amount of furring.

F. Make provisions for neat insulation finish around equipment and materials. Do not mount piping or equipment within insulation depth.

G. Equipment, materials and work shall comply with the requirements of generally recognized agencies, and shall conform to and be installed in strict accordance with Federal, state and City or Town requirements and shall meet all of the requirements of all authorities having jurisdiction.

1.19 ABBREVIATIONS AND DEFINITIONS

A. "This Sub-Contractor", "The Contractor" and "P.C." mean specifically the Plumbing Sub-Contractor working under this respective of the Specifications.

B. "Equipment" as mentioned and intended herein shall mean any and all plumbing fixtures and equipment.

C. "Provide" may be used in place of "furnish and install" and where used shall mean to deliver, furnish, erect, and connect up complete in readiness for regular operation, the particular work and equipment referred to, unless otherwise specified.

D. "Concealed" shall be defined as areas where piping is located in chases, shafts, and furred ceilings.

E. All other piping shall be considered "exposed".

F. "Exposed" shall mean within sight in closets, in finished rooms, under counters, behind and/or under equipment and/or otherwise visible.

G. "Underground" shall mean pipe, conduit or equipment that is buried exterior to or within the building.

H. "Finish grade" as used herein means the final grade elevations indicated on the Drawings.

I. "Piping" shall mean and include pipe, fittings, hangers and valves.

J. "Tempered water" shall be considered the same as hot water throughout the Specification.

K. "Date of acceptance", as it is used in reference to the guarantee, shall mean that date upon which the system or equipment is turned over and accepted by the Owner complete with initial start-up and the Owner's instruction period.

1.20 DRAWINGS

A. The Drawings are intended to show approximate locations of apparatus, fixtures and piping in diagrammatic form. The Drawings are not intended to show Architectural and Structural details.

B. Do not scale drawings. Obtain any information requiring accurate dimensions from Architectural and Structural Drawings and from site measurements. Check locations and elevations before proceeding with work.

C. At no additional cost to the Owner, make all changes and additions to provide materials and/or equipment necessary to accommodate structural and architectural conditions.

D. Leave areas clean where space is indicated as reserved for future equipment.

E. Whether shown on the Drawings or not, leave adequate space and provision for servicing of equipment and removal and reinstallation of replaceable items such as motors, coils, and tubes.

F. Where “roughing-in” only for equipment, which is not part of this Section, obtain accurate information before proceeding with the work.

G. Provide all ceiling mounted components, including access doors and panels, in strict accordance with reflected ceiling plans.

H. Refer to Architectural Drawings for fire ratings of walls and slabs. The intent is this Sub-Contractor shall be fully responsible for sealing all penetrations to maintain the required fire ratings.

1.21 CROSS AND INTERCONNECTIONS.

A. No plumbing fixtures, equipment, connection, device or pipe shall be installed which would provide a cross or interconnection between a distributing supply and a drainage system or a soil or waste pipe, which would permit or make possible the backflow of sewage, polluted water, pollutants or waste into the domestic water supply system, unless such connections are protected with approved cross connection devices.

1.22 SCAFFOLDING, HOISTS, CRANES, STAGING, PLATFORMS & CHUTES

A. IMPORTANT: All Subcontractors in the “Filed Sub-Bid” category shall provide, at their own expense, all scaffolding, hoists, cranes, staging, platforms, chutes and other construction aids needed for their work. The General Contractor shall provide scaffolding, hoists, cranes, staging, platforms, chutes and other construction aids needed for the construction of the remainder [non-filed Sub-Bid category] of the work. Therefore, each Filed Sub-Bidder shall include in his/her Sub-Bids the above mentioned costs related to his/her own work.

B. The Contractor [or Subcontrator, through the General Contractor] shall coordinate in detail his/her activities with the Authority regarding height limitation and locations.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. Type A:

No hub cast iron soil pipe and fittings joined with approved stainless steel mechanical couplings 4-band for up to 4" diameter, 6-band for over 4". Sealing gasket shall be Neoprene in accordance with ASTM-C564.

B. Pipe and fittings shall be in accordance with the following:

1.	Rainwater	Type A
2.	Gas Piping	See 2.03

2.02 TESTS AND APPROVALS

A. Pipelines shall be blown or flushed clean, before piping tests are applied. All plumbing work shall be tested as herein specified. No portion shall be covered, concealed, used or made inaccessible to testing, inspection, repair, correction or replacement until tests thereof have been satisfactorily completed in the presence of the Designer's Authorized Representatives. The Plumbing Subcontractor must accommodate his testing operations to the progress of the project as a whole. Correct all defects appearing under test and repeat until all parts of the work have withstood them successfully.

B. Furnish all labor, material and services for testing, including testing plugs, pumps and compressors; he shall make and remove all temporary piping connections required for the tests and shall dispose of test water and all wastes after tests. Leave all work in good order, ready for full use.

C. Tests on all plumbing systems shall be made in accordance with the requirements of the Local Plumbing Code.

2.03 NATURAL GAS PIPING SYSTEM

A. Gas piping shall be Schedule 40 black steel pipe with threaded ends and 150-pound black malleable iron flat band threaded fittings.

B. The gas distribution system installation shall include all pipe, fittings, valves and all accessories and incidentals to conform with the code requirements. Piping shall be installed with an 8" long sediment leg at the base of all drops and shall be arranged with drain valves at low points. All changes in directions shall be made with plugged tees for cleaning piping out.

C. The Plumbing Sub-Contractor shall make all final connections between each piece of equipment requiring gas and the gas distribution systems.

D. The Plumbing Sub-Contractor shall obtain all permits for the installation of the interior gas distribution systems. Gas Company back charges and fees shall be paid by the Plumbing Sub-Contractor.

2.04 ROOF DRAINS

A. Furnish and install roof drains as indicated on the drawings.

PART 3 - EXECUTION

3.01 GENERAL

A. Provide materials and equipment as shown and specified or as required to provide complete and satisfactory operating systems, omitting only those items specifically excluded. Make connections to equipment, devices, etc., provided or installed under this Section as shown and specified.

B. All equipment, fixtures, outlets and devices shown n the Plumbing and Architectural Drawings shall be connected with all of the proper utilities and properly tied into the building plumbing systems.

3.02 MATERIALS AND WORKMANSHIP

A. Work shall be executed in a workmanlike manner and shall present neat and mechanical appearance when completed. Piping shall run concealed except in mechanical rooms and areas where no ceiling exists.

B. Work and workmen shall be fully insured as required.

C. Material and equipment shall be furnished new.

D. The Owner shall not be responsible for material and equipment prior to testing and acceptance.

3.03 BULLETINS, MANUALS AND INSTRUCTIONS

A. Furnish operation, lubrication and maintenance manuals for each piece of equipment.

3.04 GAS SYSTEM

A. All horizontal lines shall be graded not less than one-forth [1/4] inch in fifteen [15] feet to drip pockets, which shall be readily accessible to permit cleaning and emptying. A suitable drip or condensation pocket shall be installed at service entrance, bottom of risers, and where required where condensate may collect. Furnish access panels for hidden drips.

B. Each outlet, including a valve or cock outlet, shall be securely closed gas-tight with a threaded iron plug or cap immediately after installation and shall be left closed until this equipment or appliance is connected thereto.

C. All branch outlet pipes shall be taken from the top or sides of horizontal mains and not from the bottom.

3.05 PIPE JOINTS

A. All welding for gas piping shall be done in accordance with the welding procedures of the National Certified Pipe Welding Bureau, only by certified welders with certification provided prior to the start of work. Long radius welding fittings shall be installed on all welded lines. Branches from main piping shall utilize welding tees where branch size is main size or two [2] nominal sizes smaller except, where main is two and one-half [2 1/2] inches or larger and branch size is two [2] inches or smaller utilize Thread-o-let. Weld-o-lets shall be utilized where branch size is three [3] sizes larger than branch. Mitering of pipe to form elbows, tees, or similar construction will not be permitted. All pipe to be welded shall be cut off clean in pipe machine and beveled.

B. All screwed pipe joints shall have I.P.S. threads, and shall be made up with red lead and graphite ground in linseed oil applied to male threads only. All thread on pipe shall be full and cleaned out. Gas piping shall be made up with compound suitable for gas, similar to Rectorseal.

C. The Plumbing Sub-Contractor, if directed by the Designer is to cut joints as directed to demonstrate how joint is filled.

3.06 PLUMBING SYSTEM TESTS

A. All plumbing and gas systems shall be tested by the Plumbing Sub-Contractor in the presence of the Designer or his representative and the Plumbing Inspector after completion of “ROUGHING IN” and before concealing any section from view. This shall include all new systems and all existing systems and portions thereof that are scheduled to remain.

B. Furnish labor, tools, and all materials and do all testing as described herein.

C. Provide jetting of roof drain to ensure drainage is operational.

3.07 CLEANING AND ADJUSTING

A. At the completion of the work, all fixtures, equipment apparatus and exposed trim for this Section shall be cleaned.

3.08 RUBBISH REMOVAL

A. Remove from the site and legally dispose of all cartons of rubbish and debris resulting from work under this Section not less than once per week.

END OF SECTION

SECTION 23 0001

HEATING, VENTILATING AND AIR CONDITIONING

[Filed Sub-Bid Required]

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

B. Consult the individual Sections of the Specifications for cleaning of Work installed under those Specifications.

C. Time, Manner and Requirements for Submitting Sub-bids:

1. Sub-Bids for work under this Section shall be for the complete work and shall be filed in a sealed envelope with the Town of Halifax - Halifax Public Schools at a time and place as stipulated in the "NOTICE TO CONTRACTORS".

The following shall appear on the upper left hand corner of the envelope:

1. Name of Sub-Bidder:
2. Name of Project/Project Title: _____
3. Project No.: _____
4. Sub-Bid for:: Section 23 0001 Heating, Ventilating and Air Conditioning

Each sub-bid submitted for work under this Section shall be on forms furnished by the Town of Halifax - Halifax Public Schools, as required by Section 44F of Chapter 149 of the General Laws, as amended.

Sub-bids filed with Town of Halifax - Halifax Public Schools shall be accompanied by a BID BOND or CASH or CERTIFIED CHECK or a TREASURER'S or CASHIER'S CHECK issued by a responsible bank or trust company payable to the Town of Halifax - Halifax Public Schools in the amount of five percent of the bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

D. Reference Drawings: The Work of this Filed Sub-Bid is shown on the following Contract Drawings: H-100 & H-101.

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 temporary existing roof mounted exhaust fans (EF), roof top air conditioning units (RTU), roof top condensing units and condensers (CU) and reinstall all EFs, RTUs & CUs after new roof is installed as indicated on the drawings. Extend ductwork and piping to the new installed equipment.

2. Furnish and install new roof curbs to all exhaust fans (EF) as indicated on the drawings.

3. Furnish and install new wood sleepers to all condensers and air cooled condensing units (CU) as indicated on the drawings.

4. Test refrigerant pipes for leakage. Fix all pipe leaks. Evacuate the refrigerant as per OSHA and all applicable codes. Remove the section of refrigerant pipes to accommodate the reinstallation of condensers and air cooled condensing units (CU). Furnish and install new refrigerant pipe. Recharge refrigerant piping system.

5. Balancing of all air systems.

6. Record Drawings of the actual HVAC equipment installation.

B. Items to be Installed only: None.

C. Items to be Furnished Only: None.

D. Related Work: The following items of work are not included in this Section and will be performed under the Designated Sections. Examine all other Sections of the Specifications and all drawings for the relationship of the work under this Section and the work of other trades. Cooperate with all trades and coordinate all work under this Section therewith.

1. The following related items are included under Sections listed below:

2. Section 01 7329 - CUTTING AND PATCHING

   a. Cutting and patching of masonry, concrete, tile and other parts of the structure under and by the APPLICABLE SECTIONS.

3. Section 01 5000 – TEMPORARY FACILITIES AND CONTROLS

   a. Fuel, water and electricity for all tests and temporary operation of HVAC equipment.

   b. Temporary heat.

E. Reference to Drawings: Refer to Title Sheet for drawing numbers and names.

1.03 INTENT

A. All work shall be in accordance with the arrangement, detail and locations, as indicated on the Contract Drawings, Reference Drawings and any supplemental addenda, bulletins or Drawings issued by the Designer. Layouts are diagrammatic and final arrangement of equipment shall suit field conditions. Install all necessary fittings and equipment offsets required to meet job conditions. The Drawings are not intended to be scaled, but shall be followed with sufficient accuracy to coordinate with other work and structural limitations. Work installed in a manner contrary to that shown on the Drawings, or interfering with the work of another trade, shall be removed and reinstalled when so directed by the Designer. Discrepancies and questionable points shall be immediately reported to the Designer for clarification.

1.04 CODES, REGULATIONS AND STANDARDS

A. All work shall be installed in conformance to the governing Codes, Regulations and Ordinances. It shall be the responsibility of this Sub-Contractor to familiarize himself with all governing Codes, Regulations and Ordinances and report any non-compliance of the Plans and Specifications to the Designer, prior to entering into a contract. All the above requirements shall take precedence over the Plans and Specifications. These requirements are minimum criteria and no reductions to the quality or capacity of the Systems, that may be permitted by Code, will be allowed without written permission of the Designer.

B. All workmanship methods and materials shall meet the highest standards of the trade and, in general, shall conform to the Standards of the following associations:

American Standards Associations (ASA)
American Society of Mechanical Engineers (ASME)
National Board of Fire Underwriters' (NBFU)
Standard of Underwriters' Laboratories (UL)
American Society of Testing Materials (ASTM)
American Society of Heating Refrigeration and Air Conditioning Code (ASHRAE)
National Electric Code (NEC)
Associated Air Balance Council (AABC)
National Fire Prevention Association (NFPA)
Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
Occupational Safety and Health Act (OSHA)
American National Standards Institute (ANSI)
Building Officials and Code Administrators (BOCA)
Air Moving and Conditioning Association (AMCA)
Massachusetts State Building Code
National Electric Manufacturing Association (NEMA)
International Standards Organization (ISO)
Town of Halifax Building Regulations and Ordinances

1.05 DRAWINGS AND CONFLICTS IN THE WORK

A. The Drawings and Specifications are intended to be complementary. Any materials shown or specified in one, but not in the other, reasonably implied and usually included under good industry practice and/or required by applicable Codes and Regulations for the proper and safe completion and operation of the work described herein, shall be furnished and installed by this Sub-Contractor at no additional cost to the Owner. Drawings show general arrangement of equipment and are not intended to indicate the exact dimension of runs.

1.06 EXCHANGE OF INFORMATION AND COORDINATION

A. All Systems and equipment covered by this section of the Specifications shall not be installed without first coordinating the installation of same with other trades and the General Contractor. This Sub-Contractor shall, at his own expense, relocate all equipment installed should they interfere with the proper installation of the equipment to be installed by other trades and by the General Contractor.

B. Furnish to the General Contractor and all other Sub-Contractors all information relative to the portion of the installation specified in this section that will affect them, sufficiently in advance, so that they may plan their work and installation accordingly.

C. In the case of failure on the part of this Sub-Contractor to give proper information, as indicated above, sufficiently in advance, this Sub-Contractor will pay for all back charges incurred by the General Contractor and other Sub-Contractors for the modification and/or relocation of any portion of the work already performed by them in conjunction with the Contract due to this Sub-Contractor's delay or for having given information.

D. Obtain from the other trades, all information relative to the work covered by this section of the Specifications, which this Sub-Contractor is to execute in conjunction with the installation of their respective equipment.

E. In the event that conflicts, if any, cannot be settled rapidly and amicably between the affected trades with work proceeding in a workmanlike manner, then the Designer shall decide which work is to be relocated and his judgment shall be final and binding.

1.07 WORKMANSHIP

A. The entire work provided in this Specification shall be constructed and finished, in every respect, in a workmanlike and substantial manner. It is not intended that the Drawings shall show every detail. The Sub-Contractor shall furnish and install all such parts as may be necessary to complete the work in accordance with the best trade practice and to the satisfaction of the Designer and the Owner.

1.08 SITE INVESTIGATION

A. It shall be the responsibility of the Bidders to acquaint themselves with the available information, before submitting their bid. Bidders must visit the site and acquaint themselves with the existing conditions and shall study all site/civil. Architectural, Structural, Plumbing, Fire Protection, HVAC and Electrical Drawings, as well as the Specifications. The bidders shall fully inform themselves of all local and state Code requirements. Extra compensation will not be given for obvious conflictions apparent at the time of the start of the project.

1.09 TAXES AND INSURANCE

A. This Sub-Contractor shall include in his bid, applicable Federal and local taxes and the premiums of the insurance required by the General conditions and Supplementary General Conditions of the Contract.

1.10 PERMITS AND INSPECTIONS

A. This Sub-Contractor shall obtain and pay for all the permits required for this section of the work. He shall also obtain and pay for all the inspections and tests required. Defects discovered in work, materials and/or equipment shall be replaced at no cost to the Owner and the inspection and test shall be repeated.

1.11 CONTRACT COST BREAKDOWN

A. Refer to Section 01 3300 - SUBMITTAL PROCEDURES

B. No requisitions will be paid until after the breakdown is delivered to the Designer.

1.12 GUARANTEE

A. Provide notarized copies of the guarantee for HVAC systems covering for a period of two [2] years from the date of Substantial Completion of the Contract.

B. Refer to Section 01 7000 - EXECUTION AND CLOSE-OUT REQUIREMENTS for additional requirements.

1.13 MATERIALS

A. Materials shall be the best of their respective kinds and in full accord with the most modern mechanical construction. All materials shall be new.

B. All materials necessary to make the installation complete in every detail shall be furnished and installed under this Contract, whether or not specifically shown on the Drawings or specified herein.

C. It is the intent of the Specifications that one manufacturer be selected, not a combination, for any particular classification of materials.

D. Where materials, equipment apparatus or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish the standard of desired quality and style and shall be the basis of the bid.

1.14 MATERIALS AND EQUIPMENT HANDLING

A. This Sub-Contractor shall do all handling of his materials and equipment and the resulting cleanup, at his expense, in a safe and satisfactory manner. Special attention shall be paid to the protection of life and property and the equipment or apparatus handled, and any corresponding damages shall be replaced, repaired or paid for by this Sub-Contractor, as approved by the Designer. This Sub-Contractor shall provide all rigging, hoisting and staging required to complete the work of this section, unless specifically noted otherwise.

1.15 MAINTENANCE AND PROTECTION OF MATERIALS

A. Refer to Section 01 7000 - EXECUTION AND CLOSE-OUT REQUIREMENTS

1.16 SHOP DRAWING

A. Refer to Section 01 3300 - SUBMITTAL PROCEDURES

B. Provide shop drawing for roof curb, piping, refrigerant, balancing report and as required by architect or engineer.

C. Provide information to the General Contractor as required and for any other work to be performed by other trades.

1.17 RECORD DRAWINGS

A. Refer to Section 01 7000 - EXECUTION AND CLOSE-OUT REQUIREMENTS

1.18 CLEANING OF SYSTEMS

A. Refer to Section 01 7000 - EXECUTION AND CLOSE-OUT REQUIREMENTS

B. Before the Systems are accepted, all equipment shall be thoroughly cleaned to remove all dust, dirt and/or other foreign matter.

C. After the installation is complete, equipment with factory finished surfaces shall be cleaned and damaged or scratched spots shall be touched up with the same type and color paint applied at the factory.

D. All equipment that is to receive finish paint by the Painting Sub-Contractor and left ready to have surfaces prepared to receive paint.

1.19 RUBBISH REMOVAL

A. At the completion of the work, or when ordered by the General Contractor or the Designer, this Sub-Contractor shall remove from the property, all the rubbish and waste materials belonging to him. Keep the job site free from accumulation of waste materials and rubbish; premises must be maintained in a clean condition.

1.20 TEMPORARY STRUCTURES

A. This Sub-Contractor shall provide, on the premises and where directed by the Designer, shall maintain in good condition, and shall remove when directed, suitable and substantial watertight sheds or trailers in which he shall store all his materials and equipment.

1.21 TEMPORARY SERVICES

A. Refer to Section 01 5000 - TEMPORARY FACILITIES AND CONTROLS.

1.22 TESTS

A. Furnish all labor, materials, instruments, supplies and services and bear all costs for the accomplishment of the tests herein specified or required by governing Authorities. Correct all defects appearing under test, repeat the tests until no defects are disclosed and leave the equipment clean and ready for use.

B. Perform tests, other than herein specified, which may be specified by legal authorities or by agencies to whose requirements this work is to conform.

C. Dispose of test water and wastes after tests are complete, in a manner satisfactory to the Designer and in accordance with governing regulations.

1.23 EQUIPMENT ACCESS REQUIREMENTS

A. All work shall be installed so that all parts requiring inspection, operation, maintenance and repair are readily accessible. Minor deviations from the Drawings may be made to accomplish this, but changes of magnitude shall not be made prior to written approval from the Designer.

B. Furnish access panels in walls and ceilings at locations indicated on the Drawings, or as required to permit access for adjustment, removal and the replacement and servicing of all equipment, and all other items requiring maintenance and adjustments. Access panels shall be installed by other trades.

C. Coordinate the exact location of access panels in all finished spaces with the Designer.

1.24 FABRICATION OF MATERIALS

A. Before prefabricating ductwork or piping for installation make certain that such items can be installed as shown on the Drawings without interfering with the structure or the work of other trades. Any problems that cannot be solved in agreement with other trades affected, shall be submitted for decision.

B. If ductwork or piping is prefabricated prior to the investigation and reaching of a solution to possible interference problems, necessary changes in such prefabricated items shall be made at no extra cost to the Owner.

C. In case of any discrepancies between the Specifications and Drawings, or where the Specifications or Drawings are not clear or definite, the subject shall be referred to or decided by the Designer whose decision shall be final. Otherwise, make adjustments at no expense to the Owner.

1.25 SCAFFOLDING, HOISTS, CRANES, STAGING, PLATFORMS & CHUTES

A. IMPORTANT: All Subcontractors in the “Filed Sub-Bid” category shall provide, at their own expense, all scaffolding, hoists, cranes, staging, platforms, chutes and other construction aids needed for their work. The General Contractor shall provide scaffolding, hoists, cranes, staging, platforms, chutes and other construction aids needed for the construction of the remainder [non-filed Sub-Bid category] of the work. Therefore, each Filed Sub-Bidder shall include in his/her Sub-Bids the above mentioned costs related to his/her own work.

B. Cranes may be employed for the work, but care shall be taken when they are employed adjacent to overhead power lines and adjacent structures which are to remain and to be protected from damage.

C. The Contractor [or Subcontractor, through the General Contractor] shall coordinate in detail his/her activities with the Authority regarding height limitation and locations.

PART 2 - PRODUCTS

2.01 PIPING SYSTEMS MATERIALS (NEW)

A. Piping shall conform to the following requirements. All materials shall be new and shall be installed as specified as per industry standards.

B. The material of construction shall be as follows:

1. Type L copper tubing as ASTM B88 hard drawn.

C. Joints shall be solder joint w/ 95-5 tin antimony solder.

D. Fittings shall be wrought copper solder joint fittings.

E. Piping shall be rated for refrigeration ACR.

F. Install piping as per industry standards.

G. Test piping as per industry standards.

H. Insulate refrigerant piping with 3/4" thick Armastrong close cell insulation. Weatherproof insulation for outdoor application.

2.02 PREFABRICATED ROOF CURB

A. Furnish and install roof curb as indicated on the drawings.

PART 3 - EXECUTION

3.01 OPERATION AND START-UP

A. This Sub-Contractor shall furnish all labor, materials and equipment necessary to place the equipment into operation and then start and operate all systems to demonstrate the fitness of the installation.

B. Prior to start-up, this Sub-Contractor shall check all equipment for rotation, check belts for tightness, provide lubrication, clean all equipment, perform pressure tests and make all other adjustments necessary for start-up.

3.02 COORDINATION

A. The structure and its appurtenances, clearances and the related services, such as plumbing, heating, ventilating and electric service, have been planned to be adequate and suitable for the installation of equipment specified under this Section. The Owner will not assume any increase in cost caused by differing requirements peculiar to a particular make or type of equipment and any such incidental cost shall be borne by this Sub-Contractor. He shall be responsible for the proper installation and location of his required sleeves, chases, inserts, etc., and see that they are set in the forms before the concrete is poured. He shall be responsible for his work and equipment furnished and installed by him until the completion and final acceptance of this contract, and he shall replace any work which may be damaged, lost or stolen, without additional cost to the Owner.

B. It shall be the duty of this Sub-Contractor to furnish full information to all trades relative to the work they are to do in connection with work under this Section. This includes data for wiring, including wiring diagrams, equipment foundations, pipe connections, etc., furnished under other Sections.

3.03 CONNECTIONS TO EQUIPMENT

A. Provide unions or flanges at all connections to equipment. Ensure that piping adjacent to equipment is readily removable for servicing and/or removal of equipment, without shutting down the entire system.

B. Install unions in piping up to and including 2-inch pipe size. Install flanges in piping 2 1/2 inch piper size and larger.

3.04 COMPLETION

A. Run-in all bearings and gear boxes. Follow manufacturer's written instructions. After running-in, flush out and refill with recommended lubricants.

B. Remove oil and dirt from equipment surfaces and bases.

C. Check and align all drives. Adjust belts for proper tension.

D. Remove all temporary protection and covers.

E. Vacuum clean the inside of all air handling systems when the systems are 99% complete, including fans, ducts, coils, and terminal units to ensure that they are free from debris and dust. Coordinate with General Contractor and Designer.

F. Change air and water filters, as witnessed by the Owner's representative and Designer before the Owner accepts the building.

G. Leave mechanical work in as new working order.

H. Refer to Section 01 7000 - EXECUTION AND CLOSE-OUT REQUIREMENTS.

3.05 INSPECTION

A. Period inspections of the work in progress will be made to check general conformity of the work to the Drawings and Specifications.

B. Correct all deficiencies immediately upon notification.

3.06 TESTING

A. Furnish all labor, materials, instruments, supplies and services and bear all costs for the accomplishment of the tests herein specified. Correct all defects appearing under tests and repeat the tests until all defects are disclosed. Leave equipment clean and ready for use.

B. Perform all tests other than herein specified which may be required by Legal Authorities or by Agencies to whose requirements this work is to conform.

C. Furnish all necessary testing apparatus, make all temporary connections and perform all testing operations required, at no additional cost to the Owner.

D. All equipment and ductwork installed under this Contract shall be tested and found tight. Insulated or otherwise concealed piping shall be tested before being closed-in. All leaking joints shall be corrected, retested and found tight. Such tests shall conform to the requirements of local codes but shall not be less than the equivalent of the tests called for herein.

E. Tests performed shall not relieve the HVAC Subcontractor of his responsibility if leaks develop after the tests are made.

3.07 FINAL INSPECTION

A. When all HVAC work in this project has been completed as indicated on the Drawings and specified herein and is ready for final inspection, such an inspection shall be made by the Designer's and the Owner's Representatives. At this time the HVAC Subcontractor for the work under this Section shall demonstrate that the requirements of these specifications and Drawings, have been met to the satisfaction of the Designer and the Owner. All submittals shall be required prior to the final inspection.

END OF SECTION

SECTION 26 0001

ELECTRICAL

[Filed Sub-Bid Required]

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

B. Consult the individual Sections of the Specifications for cleaning of Work installed under those Specifications.

C. Time, Manner and Requirements for Submitting Sub-bids:

1. Sub-Bids for work under this Section shall be for the complete work and shall be filed in a sealed envelope with the Town of Halifax - Halifax Public Schools at a time and place as stipulated in the "INSTRUCTIONS TO BIDDERS".

   The following shall appear on the upper left hand corner of the envelope:

   1. Name of Sub-Bidder:
   2. Name of Project/Project Title: _____
   3. Project No.: _____
   4. Sub-Bid for: Section 26 0001 Electrical

   Each sub-bid submitted for work under this Section shall be on forms furnished by the Town of Halifax - Halifax Public Schools, as required by Section 44F of Chapter 149 of the General Laws, as amended.

   Sub-bids filed with Town of Halifax - Halifax Public Schools shall be accompanied by a BID BOND or CASH or CERTIFIED CHECK or a TREASURER'S or CASHIER'S CHECK issued by a responsible bank or trust company payable to the Town of Halifax - Halifax Public Schools in the amount of five percent of the bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

D. Reference Drawings: The Work of this Filed Sub-Bid is shown on the following Contract Drawings: E-100 & E-101.

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. Disconnect power to all existing roof mounted exhaust fans (EF), roof top condensing units and condensers (CU) and make safe as indicated on the drawings.

2. Remove and discard from site the existing disconnect switches and receptacles as indicated on the drawings.

3. After HVAC equipment is installed, reconnect equipment as indicated on the drawings.

4. Furnish and install disconnect switches, receptacles, junction boxes, wiring and conduits as indicated on the drawings.

5. Conduits and raceways, outlet boxes and accessories, pull boxes, wireways.

6. Wiring devices, wiring device plates, multi-outlet assemblies.

7. Branch circuit wiring, wire and cable and terminations.

8. Disconnecting power at selected areas for demolition work. Selected electrical demolition work. Refer to Architectural and Electrical Drawings for demolition work area.

9. Wiring for HVAC Systems.

10. All other systems and necessary related electric equipment as specified herein and/or as indicated on the drawings.

11. Certified test reports.

12. Equipment connections.

13. Temporary light and power.

14. Testing

15. Record Drawings

16. Power wiring and connections to equipment provided under all sections.

B. Items to be Installed Only: None.

C. Items to be Furnished Only: None.

D. Related Work: The following items are not included in this section, except as noted, and will be performed under the designated sections and as indicated below:

1. Section 01 5000 - TEMPORARY FACILITIES AND CONTROLS

   a. Refer to Paragraph 1.23 SCAFFOLDING, HOISTS, CRANES, STAGING, PLATFORMS & CHUTES.

2. The demolition of the existing electrical work shall be by the Electrical Sub-Contractor. The Electrical Sub-Contractor shall disconnect the electrical power and make the site safe.

F. Reference to Drawings: Refer to Title Sheet for drawing numbers and names.

1.03 DRAWINGS

A. Drawings are diagrammatic and indicate general arrangement of systems and work included in Contract. Information and components shown on riser diagrams but not on plans, and vice versa, shall apply or shall be provided as though expressly requiring both. It is not intended that every junction box, offset, fitting or component be specified or shown on Drawings; however, Contract Documents require provision of all components and materials necessary for complete and operational Electrical installation, whether or not indicated or specified. Discrepancies or questionable issues shall be immediately reported in writing to Designer for clarification.

B. Do not scale Drawings. Scale indicated on Drawings is for establishing reference points only. Actual field conditions shall govern all dimensions.

C. Provide items refereed to in singular number in Contract Documents in quantities necessary to complete Work of this Section.

D. Where Drawings or Specifications indicate discrepancies, or are unclear, advise Designer in wiring before prebid conference. Otherwise Designer's interpretation of Contract Documents shall be final. No additional compensation will be approved because of discrepancies or lack of clarity thus unresolved.

E. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.

F. Where Drawings or Specifications do not agree with manufacturer's recommendations, or with applicable codes and standards, alert Designer in writing before installation. Otherwise, make necessary changes in installation as required by Designer within Contract Price.

1.04 PERMITS, LAWS, ORDINANCE AND CODES

A. Obtain and pay for all permits, inspections, licenses and certificates required for work under this Section.

B. Comply with laws, ordinances, rules and regulations of all local, State and Federal Authorities having jurisdiction, the rules and regulations of the National Board of Fire Underwriters, and of Halifax Electrical Department] serving the building.

C. If any work is performed and subsequent changes are necessary to conform to such codes, regulations and ordinances, the changes shall be made at the Electrical Sub-Contractor's expense.

D. The furnishing of a "Certificate of Approval" in triplicate from the local inspection authorities shall be a pre-requisite to a final acceptance to this Contract.

1.05 RECORD DRAWINGS

A. Refer to Section 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS

B. Purchase and maintain complete set of blackline prints of Contract Drawings at job site. As work progresses mark changes made, whether resulting from Addenda, formal change orders or other instructions issued by Designer. Color-in various conduits, wires, fixtures, apparatus and associated appurtenances as erected.

C. At completion of work prepare new set of reproducible Record Drawings, on mylar, of work as actually installed, incorporating changes, addenda and added data noted on marked-up prints, including DIMENSIONED location of underground conduit beyond limits of building.

1.06 COORDINATION

A. It shall be the responsibility of the Electrical Sub-Contractor to fully coordinate his work with that of the other trades so that all work may be installed in the most direct and workmanlike manner and so that interference between piping, ducts, equipment, architectural and structural features and other work will be avoided.

B. It shall be the responsibility of the Electrical Sub-Contractor to consult with and provide the General Contractor with the exact location and size of all openings, and full information of the required work at the proper time and it will be the duty of the General Contractor to provide the same. The Electrical Sub-Contractor shall do no cutting and patching of materials.

C. The Electrical Sub-Contractor shall be responsible for the proper location of his required sleeves, chases, inserts, etc., and see that they are set or cut into the concrete.

D. In case the work of the two trades interferes in such a manner as to necessitate a deviation from the design, this work shall not proceed in this area until the Designer has been notified and has rendered a decision as to the manner in which the difficulty shall be overcome.

1.07 WORKMANSHIP

A. The entire work provided in this Specification shall be constructed and finished in every respect in a workmanlike and substantial manner. It is not intended that the Drawings shall show every outlet, fitting, and accessory, but the Electrical Sub-Contractor shall furnish and install all such parts as may be necessary to complete the systems in accordance with the best trade practice and to the satisfaction of the Designer.

1.08 EXAMINATION OF SITE AND DOCUMENTS

A. Refer to Section 01 1000 - SUMMARY OF WORK

B. Prior to submitting bid, visit site and identify any existing conditions and difficulties that will affect work of this Section. No compensation will be granted for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observers.

C. Prior to commencing Work of this Section, examine site and conditions under which work will be performed. Determine exact locations of existing items shown diagrammatically on Drawings. Report in writing to Designer any conditions that might adversely affect work. Commencement of work will be construed as complete acceptance of existing conditions and preparatory work.

1.09 PROTECTION

A. The Electrical Sub-Contractor, at his own expense, shall cover and protect his work and new materials and equipment from all damage by weather or any causes during the progress of the work including security against loss.

B. Materials, fixtures and fittings shall be properly protected and all openings shall be temporarily closed as to prevent obstruction and damage.

C. The Electrical Sub-Contractor shall exercise due care in protecting all other materials and the building structure, with proper supervision by his representatives, of his work, against floods, torches, and portable fires in the building; any damage resulting therefrom shall be repaired at the expense of the Electrical Sub-Contractor with no increase in the Contract price.

D. On the completion of the building and work, he will clean all equipment and materials under his contract.

1.10 CARTING AND HANDLING

A. The Electrical Sub-Contractor shall do all carting, handling, hoisting, etc. for his materials and equipment in a safe and satisfactory manner. Any damages resulting therefrom shall be repaired or paid for by the Electrical Sub-Contractor to the satisfaction of all parties concerned.

1.11 MATERIALS STANDARDS

A. National standards referenced herein are included to establish recognized quality only. Equivalent quality and testing standards will be acceptable subject to their timely submission, review and acceptance by the Designer.

B. Unless otherwise specified, furnish, install and test work in accordance with latest editions of applicable publications and standards of the following:

1. ADA: Americans with Disabilities Act
2. ASTM: American Society for Testing and Materials
3. UL: Underwriters Laboratories, Inc.
4. ICEA: Insulated Cable Engineers Association
5. NEMA: National Electrical Manufacturers Association
6. IEEE: Institute of Electrical and Electronic Engineers
7. ANSI: American National Standards Institute
8. NFPA: National Fire Protection Association
9. MEC: Massachusetts Electrical Code
10. ACI: American Concrete Institute Code
11. CBM: Certified Ballast Manufacturers
12. SBC: Commonwealth of Massachusetts State Building Code.
13. AEIC: Associates of Edison Illuminator Companies.
14. Town of Halifax Electrical and Fire Department Rules and Regulations.

C. Reference made to codes and standards shall be interpreted as minimum requirements. Where referenced codes and/or standards conflict, the more stringent shall apply. Perform work in excess of codes and standards as indicated by Drawings and Specifications.

1.12 TESTS

A. The Electrical Sub-Contractor shall test all work and equipment as directed by the Designer and as required by authorities having jurisdiction, furnishing all equipment, necessary personnel and electric power.

B. The entire installation shall be tested for shorts, grounds, and open circuits and all defects shall be corrected before acceptance of the work. all work shall be demonstrated to be in proper operating conditions to the complete satisfaction of the Designer and the Owner.

1.13 GUARANTEE

A. Refer to Section 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS and other related Articles.

B. Manufacturers shall provide their standard guarantees/warranties for work under this Section. However, such guarantees/warranties shall be in addition to and not in lieu of all other liabilities which the manufacturer and the Contractor may have by law or by other provisions of the Contract Documents.

C. Guarantee Work of this Section in writing for one year from date of substantial completion. Repair or replace defective materials, equipment, workmanship and installation that develop within this period, promptly and to Designer's satisfaction and correct damage caused in making necessary repairs and replacements under guarantee within Contract Price. Include off-hour reports when necessary such as for Fire Alarm System.

D. Replace material or equipment that requires excessive service during guarantee period, as defined and as directed by the Designer.

1.14 SUBMITTALS

A. Prepare and submit submittals to include, but not necessarily be limited to the following items:

1. Disconnect switches

2. Conduits and raceways

3. Wire and cable.

4. Wiring devices

5. Wiring device plates

B. Shop Drawings and samples will be provided with reasonable promptness and will be stamped indicating appropriate action as follows:

1. "No EXCEPTIONS TAKEN" means that fabrication, manufacture, or construction may proceed providing submittal complies with Contract Documents.

2. "EXCEPTIONS AS NOTED" means that fabrication, manufacture, or construction may proceed providing submittal complies with Engineer's notations and Contract Documents. If, for any reason, notations cannot be complied with, resubmit as described for submittals stamped "REJECT".

3. "AMEND AND RESUBMIT" means that submittal requires changes as noted and resubmittal for review.

4. "REJECTED" means that submittal does not comply with Contract Documents and that fabrication, manufacture, or construction shall not proceed. Resubmit in accordance with requirements of Contract Documents.

1.15 EQUIPMENT AND MATERIALS

A. The Electrical Sub-Contractor shall see that all his equipment and materials are delivered at the building when required, so as to carry on the work in the most efficient manner.

B. All work, fixtures, and materials shall be protected at all times. The Electrical Sub-Contractor shall make good all damages caused either directly or indirectly by his workmen. All conduit openings shall be closed with caps or plugs during installation. All equipment shall be tightly covered and protected against dirt, water, chemicals, or mechanical injury.

C. All work shall be done by licensed, skilled workmen, in accordance with the best practices of the trade and to the satisfaction of the Designer.

1.16 CLEANING AND ADJUSTING

A. At the completion of the work, all fixtures, equipment, apparatus and exposed trim for same included in this section, shall be cleaned and left ready for use. Equipment which as been damaged during construction shall be replaced.

1.17 DEBRIS

A. The Electrical Sub-Contractor shall be responsible for the removal of all debris caused by his work and his workmen. Such debris shall be removed daily in order to leave all areas in a clean and safe condition.

1.18 QUALITY ASSURANCE

A. Installation shall comply with Massachusetts Electrical Code, latest revisions, and prevailing local, federal and state regulations.

B. Material and equipment shall be UL listed where standard has been established.

C. Manufacturer names and nomenclature facilitate description of certain materials and equipment and established type, quality and function, and it should not be inferred that other products are not acceptable.

D. Perform tests required by specifications, Architect's instructions, laws, ordinances or public authorities, approvals, and give Designer timely notice. Notify Designer of dates for inspection by other authorities.

1.19 PERMITS, FEES AND UTILITY CHARGES

A. Obtain necessary permits, licenses, or certificates of approval required. Pay fees required by and conforming to local and state laws and regulations. At conclusion of work, furnish certificates of inspection to the Owner from authorities having jurisdiction.

1.20 TEMPORARY FACILITIES

A. Refer to requirements of Section 01 5000 - TEMPORARY FACILITIES AND CONTROLS regarding temporary facilities.

B. Refer to Paragraph 1.29 SCAFFOLDING, HOISTS, CRANES, STAGING, PLATFORMS & CHUTES.

C. Provide temporary construction required for electrical work as directed by Designer.

1.21 SUBSTITUTION OF MATERIALS

A. Refer to Section 01 3300 - SUBMITTAL PROCEDURES for substitution provisions and procedures.

B. Submit comprehensive descriptive and technical data to establish quality. Do not submit for substitution material or equipment unless identical material or equipment has been operated successfully for at least three consecutive years.

1.22 TEMPORARY LIGHT AND POWER

A. Refer to Section 01 5000 - TEMPORARY FACILITIES AND CONTROLS for requirements of temporary light and power.

1.23 SCAFFOLDING, HOISTS, CRANES, STAGING, PLATFORMS & CHUTES

A. IMPORTANT: All Subcontractors in the "Filed Sub-Bid" category shall provide, at their own expense, all scaffolding, hoists, cranes, staging, platforms, chutes and other construction aids needed for their work. The General Contractor shall provide scaffolding, hoists, cranes, staging, platforms, chutes and other construction aids needed for the construction of the remainder [non-filed Sub-Bid category] of the work. Therefore, each Filed Sub-Bidder shall include in his/her Sub-Bids the above mentioned costs related to his/her own work.

B. Cranes may be employed for the work, but care shall be taken when they are employed adjacent to overhead power lines and adjacent structures which are to remain and to be protected from damage.

C. The Contractor [or Subcontractor, through the General Contractor] shall coordinate in detail his/her activities with the Authority regarding height limitation and locations.

PART 2 - PRODUCTS

2.01 GENERAL

A. Materials provided under this Section shall be new, be the best of their respective kinds, and shall comply with the Specifications.

2.02 WIRING DEVICES

A. All receptacle outlets shall be specification grade, UL listed and shall meet Federal Specifications. All duplex receptacles shall be grounded. Outdoor receptacles shall be NEMA 3R standards.

2.03 RACEWAYS

A. Intermediate metal conduit shall be hot-dipped galvanized steel conforming to UL Standard No. 1242. Conduit shall be as manufactured by Republic Steel Corp., Pyle National, Allied Tube and Conduit Corp., or equal.

B. Electric metallic tubing shall be hot-dipped steel conforming to UL Standard No. 747. Tubing shall be as manufactured by Pyle National, Allied Tube and Conduit Corp., Wheatland Tube Company, or equal.

C. Flexible metal conduit shall be galvanized steel with separate copper grounding conductor. Liquid-tight flexible metal conduit shall be similar, but with extruded moisture and oilproof outer jacket of poly-vinyl chloride plastic.

D. Intermediate metal conduit fittings, couplings and connectors shall be threaded and galvanized or cadmium plated.

E. Couplings and connectors for electric metallic tubing shall be galvanized steel set-screw.

F. Steel support rods or support bolts for conduits shall be 1/8-inch diameter for each inch or fraction thereof of diameter of conduit size, but no rod or bolt shall be less than 1/4 inch in diameter.

G. Expansion fittings shall be Appleton XJ, Crouse-Hinds, O.Z./Gedney, or equal, size as required.

H. Waterproof conduit seals shall be comprised of malleable iron seal with gland assembly and adjustable pressure bushings, O.Z./Gedney type FSK Link-seal, Appleton, or equal.

2.04 WIRES AND CABLES

A. All wire and cable shall be copper and shall comply with the standards of the Underwriters' Laboratories, inc., the A.S.T.M. and the I.P.C.E.A. as applicable. Wire and Cable for lighting and power systems shall be type "XHHW" insulation for 600 volts. Wires shall be supplied in different colors for the different phases, white for neutral and green for ground. Minimum size wire shall be #12 AWG except motor control circuit wiring and fire alarm system wiring may be #4. For branch circuit runs (15 ampere and 20 ampere) exceeding 100 feet in length from the panelboard to the first outlet the entire branch circuit run shall be #10 or larger, over 175 feet - use #8 AWG.

B. Provide single conductor wire and cable with 600V insulation of sizes shown on Drawings. Wire size #8 AWG and larger shall be stranded. Wire of size smaller than #8 shall be solid. Conductors shall be soft drawn copper with conductivity of not less than 98 percent of ANSI Standard. Wire of size smaller than #8 shall be solid. Conductors shall be soft drawn copper with conductivity of not less than 98 percent of ANSI Standard for annealed copper.

C. Wire and cable run in underground ductbanks and manholes shall be single conductor type RHH-RHW-USE with neoprene jacket, rated 75 degrees C wet, 90 degrees C dry for 600 Volt service.

D. Wire and cable shall be by Phelps Dodge Copper Products Corp., General Cable Co., Rome Cable Co., Triangle Conduit and Cable Co., Hatfield Wire and Cable Co., Anaconda Wire and Cable Co., Pirelli Cable Corp., or equal.

E. Provide terminal lugs and splice connectors equal to circuit ampacity.

F. Conduit sealing bushings shall be comprised of molded one-piece neoprene sealing ring, zinc plated malleable iron locking collar, PVC coated pressure discs, stainless steel flat washers and stainless steel hex socket head cap screws for sealing ring compression O.Z. Gedney type CSB Appleton, Crouse-Hinds, or equal.

2.05 OUTLET BOXES

A. All outlet boxes to be galvanized 4" square with proper raised covers to match finish line for wall outlet and 4" octagon boxes with stud and plaster ring where required for ceiling outlets. At outlets of all descriptions, for all systems, there shall be either a box or device especially designed to receive the type of fittings to be mounted thereon.

B. All exposed outlet boxes shall be galvanized pressed steel boxes of proper size with proper surface cover as manufactured by Raco, Steel City, Appleton, or equal.

2.06 PULL BOXES, WIREWAYS AND CHANNELS

A. Pull boxes shall be code gauge galvanized steel with screw covers to match. Pull boxes and wireways shall be as shown on Drawings and/or as required by MEC and/or job conditions, with steel barriers separating systems.

B. Wireways shall be code gauge galvanized steel, manufactured standard sections and fittings, with combination hinged and screw covers.

C. Steel channel support shall be minimum 1 5/8-inch mild strip steel with minimum .105 inch wall thickness, Unistrut P1000, Kindorf, Husky Products, or equal.

2.07 SAFETY SWITCHES/DISCONNECT SWITCHES

A. Provide disconnect switches fused or unfused as shown on drawings. Switches shall be NEMA Type HD safety switches for heavy duty with interlocking cover and toggle operator handle. Switches exposed to weather shall have rain-tight use 3R enclosures. Switch enclosure shall be NEMA listed for location and atmosphere in which they are mounted. Current carrying parts shall be silver plated.

B. Provide NEMA 4 disconnect switches for equipment in wet areas of kitchen [such as dishwasher].

C. Disconnect switches shall be as manufactured by one of the following: Siemens, Westinghouse Electric, Square D Company or equal.

PART 3 - EXECUTION

3.01 GENERAL

A. Unless specifically noted or shown otherwise, install all equipment and material specified in this Section or shown on Drawings whether or not specifically itemized herein. PART 3 covers particular installation methods and requirements peculiar to certain items and classes of material and equipment.

3.02 PULL BOXES AND WIREWAYS

A. Provide bolts or galvanized steel rods to support pull boxes of minimum thickness equal to rod or bolt size required on largest size conduit entering pull box, as defined under “Raceways” paragraph in this Section.

B. Identify conductors passing through pull boxes and wireways to indicate origin and termination. Provide nameplates for pull boxes.

3.03 RACEWAY WORK

A. Install wire and cable in approved raceways as specified and as approved by authorities having jurisdiction. Raceways shall be run concealed except as indicated on the Drawings.

B. Install wiring in electric metallic tubing, unless otherwise noted below.

C. Provide intermediate metal conduit for exposed conduit in all areas.

D. Make connections to motors with liquid-tight flexible metal conduit. Flexible connections shall be minimum of 18 inches and maximum of 3 feet long with grounding conductor. Flexible connections shall be used prior to attachment of conduit to equipment housing.

E. Minimum size plastic conduit shall be 3/4-inch trade size.

F. Carefully clean and dry all conduit before installation of conductors. Do not pull wires into conduit system [or install cables] until building roof and walls are weather-tight. Plug conduit ends to exclude dust, moisture, plaster or mortar while building is under construction. Lubricants or cleaning agents which might have deleterious effect on conductor coverings shall not be used for drawing conductors into raceways.

G. Intermediate metal conduit ends shall be cut square, threaded and reamed to remove burrs and sharp edges. Field threads shall be of same type and same effective length as factory-cut threads. Turns in exposed conduit runs shall be made by use of factory-made bends, or field-made bends equivalent in radius and consistency with factory-made bends, as approved. In event of multiplicity of conduits making same turn, provide condulets or steel junction box with removable steel cover. Route conduits so as not to interfere with operation or maintenance of any equipment. Offsets and bends shall be made in concealed conduits as required by job conditions. Perform work in neat and workmanlike manner as approved by Designer. Steel support or racks shall be galvanized steel channel and fittings, Unistrut, Kindorf, Husky Products Company or equal.

H. Install conduit to keep exposed threads to an absolute minimum.

I. Provide support rods and clamps to support conduits as required.

J. Conduit routing shown on Drawings is diagrammatic. Run conduits to coordinate with building structure. Concealed conduit shall be as short and direct as possible. Exposed conduit shall be run in straight lines parallel to walls, beams and columns with right angle bends.

3.04 WIRING METHODS

A. Provide color coding for secondary service, feeders and branch circuits as follows:

1. 120/240 Volt, 1 Phase, 3 Wire, Wye:

PHASE	COLOR
A	BLACK
B	RED
NEUTRAL	WHITE
EQUIP.GROUND	GREEN

2. Make connections to terminals from left to right arranged Phase A, B and C.

3. Color code wiring for signal systems differently from power wiring described above. White and green colored insulation shall only be used with color tracer. Provide one of the following methods for single or multi-conductor cables:

a. Spiral or longitudinal color stripe [tracer], running full length of cable.

b. Printed numbers stamped every 12 inches on cable insulation.

c. Numbered wire markers, Brady or equal, at junction boxes and termination points.

4. Provide same color coding for switch legs as corresponding phase conductor.

5. Provide colored plastic tape of specified color code identification for large size conductors available only in black. Wrap tape three complete turns around conductor, at ends and at connections and splices.

B. Splices and Terminations

1. Make splices and termination equivalent electrically and mechanically to conductor insulation.

2. Make splices in branch circuit wiring with solderless, screw-on connectors Ideal, Scotchlok, T&B or equal, rated 600 Volt, of size and type required by manufacturer's recommendation, with temperature ratings equal to those of cable insulation. Insulate splices with integral covers or with plastic, rubber, or friction tape, Permacel, or equal, to maintain integrity of cable insulation.

3. Make splices and terminations to conductors #8 and larger with corrosion resistant, high conductivity, pressure indent, hex screw or bolt clamp connectors, with or without tongues, designed specifically for intended service. Connectors for cables 250 kcmil and larger shall have two bolt holes. Splitbolt connectors, Rurndy or equal, shall be acceptable for all splices of conductors #8 and larger.

4. Make splices at motor junction boxes with pressure indent connectors or splitbolt connectors as specified herein.

5. Provide standard bolt-on lugs with Allen or cap screws to attach copper wire and cable to disconnect switches and other electrical equipment.

3.05 COOPERATION AND WORK PROGRESS

A. Perform work so that progress of project, including work of other Sections is not delayed.

B. Coordinate work of this Section with work of other Sections to complete work as soon as conditions permit and minimize interruptions of building functions. Assume additional costs incurred due to lack of or improper coordination with work of other Sections.

C. Remove waste material daily from premises. Store material and equipment in dry location, in neat and orderly fashion. Ensure adequate security for electrical material and equipment stored at job.

D. Obtain detailed information from manufacturer of equipment provided under this Section as to proper methods of installation.

E. Provide necessary safeguards for protection of life and property of the Owner, workers, staff and public.

F. Coordinate exact mounting arrangement and location of equipment shown on Drawings. Allow for proper space requirements for equipment access, operation and maintenance. Particular attention shall be given to group installations. If insufficient space or conflict with work of other Sections will prevent proper installation, access, operation or maintenance of shown equipment, immediately notify the Designer and do not proceed with this part of Contract work until directed by the Designer.

G. Coordinate delivery of electrical equipment to project prior to installation. Such equipment stored for extended period of time prior to installation may be subject to rejection by the Designer.

3.06 GROUNDING

A. Ground as per latest NEC and Massachusetts Electric Code.

3.07 EQUIPMENT CONNECTIONS

A. Make final connections to equipment. Where not furnished by manufacturer, provide cord and plug on equipment for connections to receptacles as shown on the Drawings.

B. Adjust method of connection and connection devices for equipment [direct connection, receptacle device, disconnect switch, flexible connection] to conform to manufacturer's wiring diagrams and equipment data sheets as directed by the Designer and at no additional cost.

END OF SECTION